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BURIALS IN THE AZTEC RUIN  
THE AZTEC RUIN ANNEX

BY

EARL H. MORRIS



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**By EARL H. MORRIS.**



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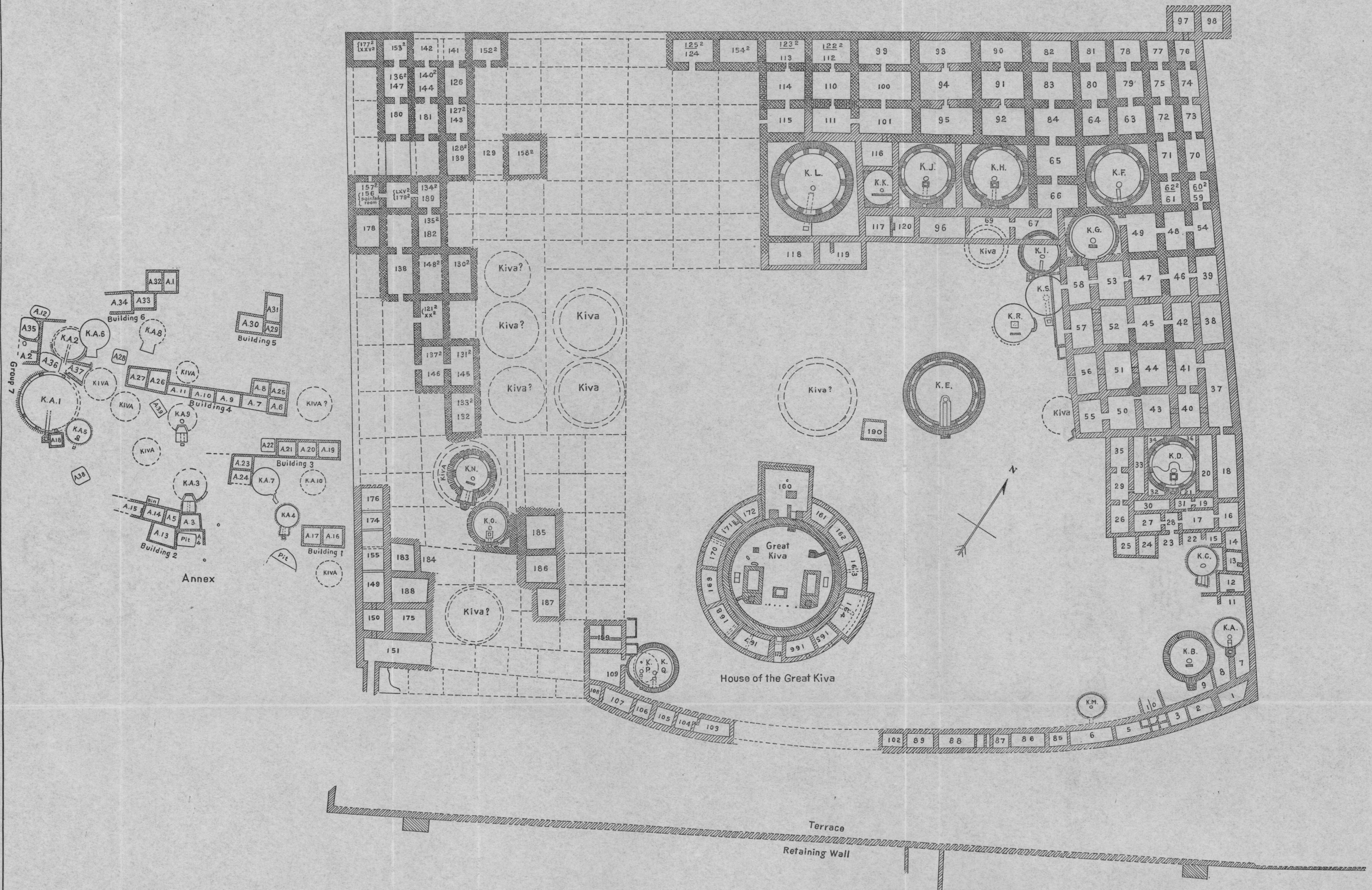
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The Aztec Ruin

December 1923

Relative Height of walls {  
 One story or less  
 Between one and two stories  
 Between two and three stories

0 20 40 50  
 SCALE





## INTRODUCTION

Mortuary customs are inherently interesting because they form a striking and significant element of any culture complex. Moreover, in the Southwest where the archeologist is striving to recover, from other than written documents, the history of a culture which continued with essential similarity throughout many centuries, an intensive study of burial practices will in the end prove of distinct value in accurately delineating the chronological periods now recognized as separate phases of Pueblo development, and will provide one more criterion by which to judge for or against the subdivisions into which the major periods must eventually fall. Therefore, a special section of the record of explorations in the Aztec Ruin will be devoted to a consideration of the burials found within and adjacent to the great pueblo.

Even at the risk of repetition of detail the burials will be listed and described in numerical sequence from 1 upward, the position of each in the series representing approximately the historical order of its discovery. The numbering is not altogether consistent since in a few instances more than one body is placed under a single heading. One of two reasons is accountable for such grouping; either apparent contemporaneity of interment, or the impossibility of determining with which of two or more skeletons respective accompanying objects belonged.

The rooms containing burials are not especially designated on the groundplan of the pueblo, but as the room numbers are clearly given in the text, there should be no difficulty attached to the establishment of the provenience and distribution of the burials. Whenever the figure 2 appears at the upper right hand of a room number it signifies that the chamber is above a relatively intact first story ceiling. Some burials are described as being in the second story where the 2 does not occur as part of the room number. In such a case the first story ceiling had collapsed, and the fill was continuous from the ground floor upward. Two words are used with definitely restricted meaning; *refuse* being applied only to accumulations of waste materials deposited by human agencies, and *débris* to the wreckage of the building.

## BURIALS IN THE AZTEC RUIN.

### ROOM 1, SOUTH WING.

*Burial No. 1.* Adult, flexed, on left side, head to southwest, lying on floor with back against south wall, six feet from the southeast corner.

*Burial No. 2.* Adult, flexed, on right side, head to northeast, lying on floor with back to south wall, immediately west of Burial No. 1.

*Burial No. 3.* Adult, flexed, on right side, head to southwest, lying on floor with back against the north wall, seven feet from the northeast corner. In front of the skull was a black-on-white mug (29.0-5140).

*Burial No. 4.* Adult, flexed, on left side, head to northeast, lying on floor with back parallel to north wall, just west of Burial No. 3. In front of the face was a corrugated pot (29.0-5141).

These burials were in pits which had been dug down to the floor level through a refuse fill 1 foot 3 inches to 2 feet in depth. Even the two against the north wall were less than 4 feet below the surface of the mound, and as a result had been acted upon by moisture until the bones fell to pieces at a touch. As might be expected under conditions of such advanced decay, no traces of burial wrappings were distinguishable.

#### ROOM 2, SOUTH WING.

*Burial No. 5.* Infant, position undeterminable, lying in refuse 6 inches above the floor against the center of the south wall. A fragmentary black-on-white bowl with corrugated exterior (29.0-5158) was inverted over the remains.

#### KIVA B, SOUTH WING.

*Burial No. 6.* Infant, flexed, on right side, head to southwest, lying in refuse at level of banquette against the wall on the northwest side of the kiva. There remained a few shreds of a wrapping of plaited rush mats.

*Burial No. 7.* Child, perhaps fourteen to sixteen years old, flexed, with head to south, lying in refuse four feet above the floor at the west side of the kiva. The bones were crushed and disturbed so that it was impossible to determine on which side the body had been placed.

#### ROOM 29, EAST WING.

*Burial No. 8.* Adult, apparently female, flexed, lying on left side with back against the west wall and head in the northwest corner. Remains of plaited rush mats enveloped the decayed bones. A small, badly disintegrated coiled basket was inverted over the skull (29.0-6741). Three digging-sticks lay along the wall above and back of the body, blades pointing footward. The right forearm was crossed over the abdomen. Paralleling the humerus, resting on the ribs of the right side, were two leaf-shaped chipped stone knives with wooden handles, the latter pointing toward the head. (29.0-6739, 6840). A corrugated pot (29.0-6738), a black-on-white mug (29.0-6737), and a black-on-white bowl (29.0-6736) were in a row in front of the face in the order mentioned.

The body was 1 foot 3 inches above the floor, overlying fallen masonry and drift sand, indicating that the chamber had been abandoned and allowed to fall into partial decay before the burial was made.

#### ROOM 33, EAST WING.

*Burial No. 9.* Adult, apparently female, flexed, on right side, face toward the north wall, and head in the northeast corner. The decayed bones were covered with the disintegrated remains of a plaited

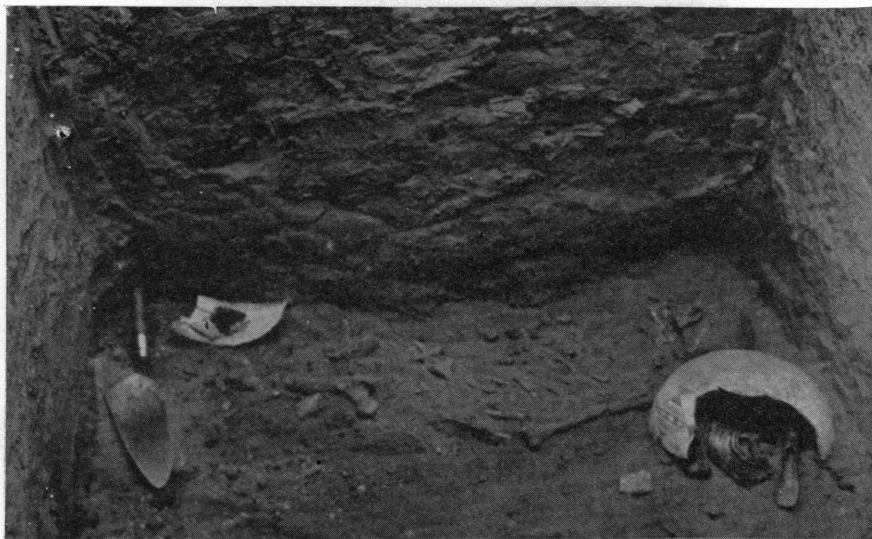


Fig. 1. Burial No. 9 exemplifies a Common Practice in Intramural Interment; the placing of the Body Adjacent and Parallel to a Wall.

rush mat. Behind the skull a large bowl (29.0-6874) was inverted upon a coiled basket plaque (29.0-6871). Beneath the bowl were three bone scrapers (29.0-6975-77); three objects made of parallel strips of coarse fiber, similar in shape to a knife hilt with guards above and below the grip (29.0-6873); and a roll of cotton cord.

The body was 1 foot 6 inches above the floor resting upon a mass of fallen masonry.

#### ROOM 37, EAST WING.

*Burial No. 10.* Child, probably between ten and fourteen years old, lying on right side, flexed, with head to south, back parallel to the west wall, and feet in the northwest corner. Some of the bones were

charred. The body had been wrapped in cotton cloth (29.0-6879). Two coiled baskets (29.0-6878), six bowls (29.0-6880-6885, inclusive), a pitcher (29.0-6886), and a mug (29.0-6887) were in front of the body; all but the mug were broken and more or less scattered.



Fig. 2. The Embers of the Burning Ceiling blackened the Bones of the Child in Burial 10, calcined its Wrappings, and destroyed the Baskets which were among the Mortuary Offerings.

The burial bundle and accompanying objects had been left in plain view upon the floor of the room. Gradually drift sand and plaster from the walls accumulated and partially covered them. Then came the conflagration which raged through the greater portion of the pueblo. The

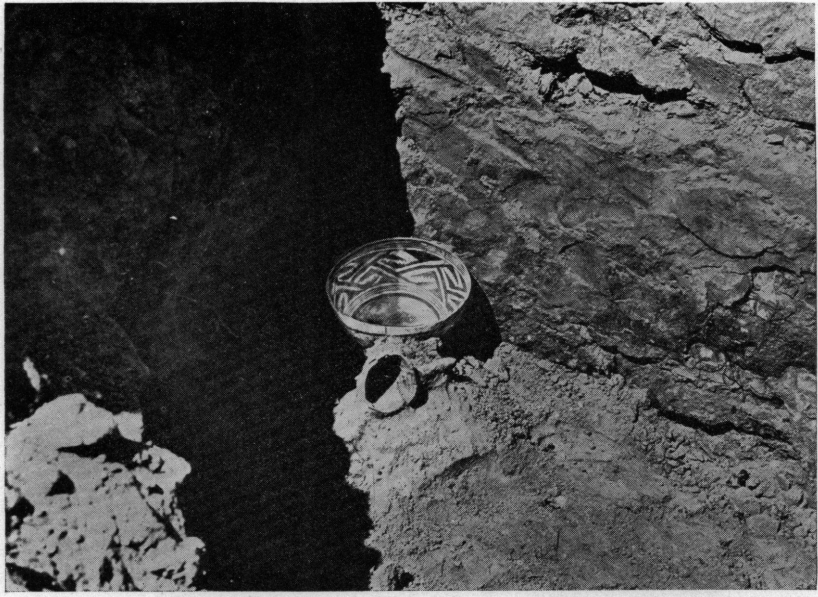


Fig. 3. Grave 14. Bowl and Dipper accompanying the Group Burial of Infants and Children against the East Wall of Room 52.



Fig. 4. Burial 15. Usually few Objects were buried with Small Children, but Occasionally there was a Marked Exception as in the Case of Burial 15. Not infrequently the entire skeleton has completely decayed, or has been removed by burrowing animals.

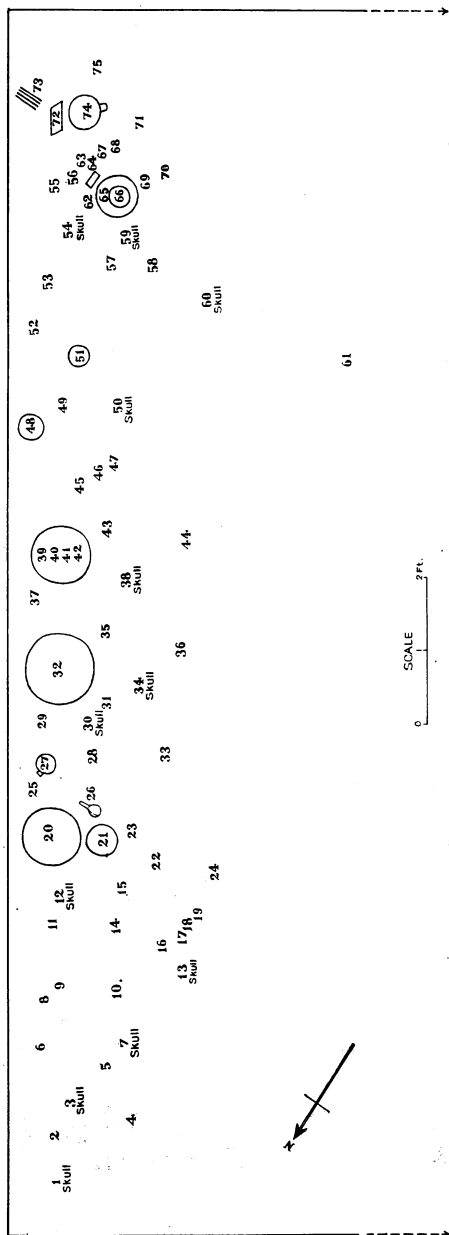


Fig. 5. Distribution of Objects in Burial 14, Room 52. The Museum catalogue numbers for these specimens are given below. (See pp. 152-153.)

2-29 0-7231a-r	15 99-7725	24-29 0-7208	35-29 0-7210	45-29 0-7209	56-29 0-7220	67-29 0-7204
4 -7235a-o	16-29 0-7202	25 -7225	36 -7201	46 -7214a-r	57 -7245a-h	68 -7222
5 -7232a-y	17 -7203	26 -7196	37 -7239a-y	47 -7215	58 -7207	69 -7243a-g
6 -7236a-h	18 -7216	27 -7195	38 -7212	48 -7192	61 -7234a-i	70 -7230a-p
8 -7223	19 -7205	28 -7217	39 -7213	49 -7241a-t	62 -7221	71 -7198a-s
9 -7224	20 -7189	29 -7238a-m	40 -7234a-i	51 -7194	63 99-7723	72 -7246
10 -7233a-z, s <sup>4</sup>	21 -7190	30 -7211	41 -7234a-i	52 -7219	64-29 0-7247	73 -7226a-n
11 -7240a-m	22 -7200	31 -7188	42 99-7724	53 -7206	65 -7191	74 -7197
14 -7199	23 -7242a-f	32 -7188	43 -7206	54 -7227a-u	66 -7193	75 -7229
		33 -7237a-n	44 -7228a-z, s <sup>3</sup>	55 -7218		

burning roof timbers of Room 37 fell, and during the course of further combustion, carbonized the baskets and cloth, and blackened the portions of the skeleton and pottery vessels not protected by earth.

*Burial No. 11.* Small child represented by a few charred bones lying upon the floor against the east wall six feet from the northeast corner.

#### ROOM 45, EAST WING.

*Burial No. 12.* Adult male, flexed, on left side with back against the south wall and head in the southwest corner ten feet above the floor and just beneath the ceiling which had sagged toward the center of the room. This fairly well preserved skeleton (99-7722) is that of an unusually large powerfully muscled individual. The skull is not artificially deformed at the back. An ornament (29.0-7074) consisting of a fringe of coarse reddish hair woven into a cord, was at the back of the head. There were no traces of burial wrappings. The relatively massive stature and the absence of occipital deformation suggest that this man may have been a member of a tribe different from that resident in the Aztec Ruin.

#### ROOM 18, EAST WING.

*Burial No. 13.* Infant, flexed, head to the east, side undeterminable, buried in refuse immediately beneath the floor, with feet against the west wall, 10 feet from the northwest corner.

#### ROOM 52, EAST WING.

*Burial No. 14.* At a fairly uniform level in the refuse fill  $3\frac{1}{2}$  feet above the floor of Room 52, the remains of at least fifteen infants and small children were scattered along the entire length of the east wall. All of the bones except bits of the broken skulls, and now and then a femur or humerus, had completely decayed. Therefore it was impossible to ascertain the positions of the various bodies, or with which of them the respective accompanying objects belonged. Above the burial level there was an average of 9 inches of refuse. (Fig. 3.)

Whatever wrappings may have enveloped the bodies were disintegrated beyond recognition, and with the one exception, hereafter noted, there remained not a trace of the perishable articles which must have formed a portion of the mortuary offerings.

The accompanying chart shows the positions in which the specimens recovered were found (Fig. 5). The location of a sack or thin-

walled basket 14 inches high, and 9 inches in diameter, with a constricted neck, is marked by Nos. 39-42. The vegetable fiber had decayed, leaving only a brown line of cleavage in the earth. In the bottom of the sack or basket were a great number of small disk-shaped beads (29.0-7212-7213). These had been strung into an elongated coil about four inches in length, of which the individual strands could be plainly distinguished. On top of the beads lay nine bird bone tubes (29.0-7234a-o) and above these was the skull of a young child (99-7724). The following is a list of the objects found with Burial No. 14.

29.0-7188	Bowl, black-on-white,
7189	" " " "
7190	" " " "
7191	" " " "
7192	" " " "
7193	" " " "
7194	Dipper, black-on-white, handle missing
7195	" " " " " "
7196	" " " " " "
7197	Mug, black-on-white
7198a-s	Beads in process of manufacture: 19 pieces of stone, some rounded, two perforated
7199	27 stone beads, same material as 29.0-7198
7200	8 crystal beads, calcite or selenite
7201	64 white disk beads
7202	12 gray disk beads
7203	12 black disk beads, lignite (?)
7204	5 beads, miscellaneous
7205	65 turquoise beads, disk-shaped
7216	Animal effigy of hematite
7206	27 olivella shell beads
7207	Shell bead
7217	Hematite paint stick
7208	5 olivella shell beads
7209	17 shell beads truncated
7210	3 cylindrical stone beads
7214	16 rectangular slabs of bone; backings for beads of fragile materials
2715	Galena crystals
7219	Worked green stone
7218	Piece of hematite
7220	Polished stone
7221	" "
7222	" "
7223	" "
7224	" "
7225	Gray quartzite knife



29.0-7212	6 feet of black disk-shaped beads, average $\frac{1}{25}$ in. in diameter; about 3100 in strand.
7213	56 feet of black disk-shaped beads, about $\frac{1}{16}$ in. in diameter; approximately 16600 in strand.
7211	14 olivella shell beads
7226a-n	14 bird bone tubes, average length $6\frac{1}{2}$ inches
7227a-u	22 " " " " " $4\frac{3}{4}$ "
7228a-z, a <sup>3</sup>	29 " " " " " $4\frac{1}{2}$ "
7229	17 " " " " " $4\frac{1}{2}$ "
7230a-p	16 " " " " " $4\frac{1}{2}$ "
7231a-r	15 " " " " " $4\frac{3}{8}$ "
7232a-y	25 " " " " " $4\frac{1}{4}$ "
7233a-z, a <sup>4</sup>	30 " " " " " $3\frac{3}{4}$ "
7234a-i	9 " " " " " $3\frac{3}{4}$ "
7235a-o	15 " " " " " $3\frac{3}{4}$ "
7236a-h	8 " " " " " $3\frac{3}{4}$ "
7237a-n	13 " " " " " $3\frac{3}{8}$ "
7238a-m	13 " " " " " $3\frac{1}{2}$ "
7239a-y	25 " " " " " $3\frac{3}{8}$ "
7240a-m	13 " " " " " $3\frac{3}{8}$ "
7241a-t	20 " " " " " $3\frac{3}{8}$ "
7242a-f	6 " " " " " $2\frac{1}{2}$ "
7243a-g	7 " " " " " $1\frac{1}{8}$ "
7244a-z	100 " " " " " fragmentary
7245a-h	8 wing bones, ends uncut
7246	Worked sandstone slab
7247	" " "
99-7723	Portions of skull of infant
7724	" " " " "
7725	" " " " "

The numerous bone tubes had been done up in bundles, grouped as indicated by the catalogue numbers above, each bundle containing tubes of nearly equal length. Some of the bundles showed traces of a cloth wrapping, and probably all of them had been so enclosed. The covering of two of the bundles had been tinted red or else stained that color during the process of decay.

#### ROOM 56, EAST WING.

*Burial No. 15.* Young child; a few fragments of the skull were all that had resisted decay. The exact position of the body was undeterminable, but to judge from the alignment of the accompanying objects it had lain transversely to the long dimension of the room, that is, east and west, in the refuse fill about one foot south of the center and twenty inches above the floor. (Fig. 4.)

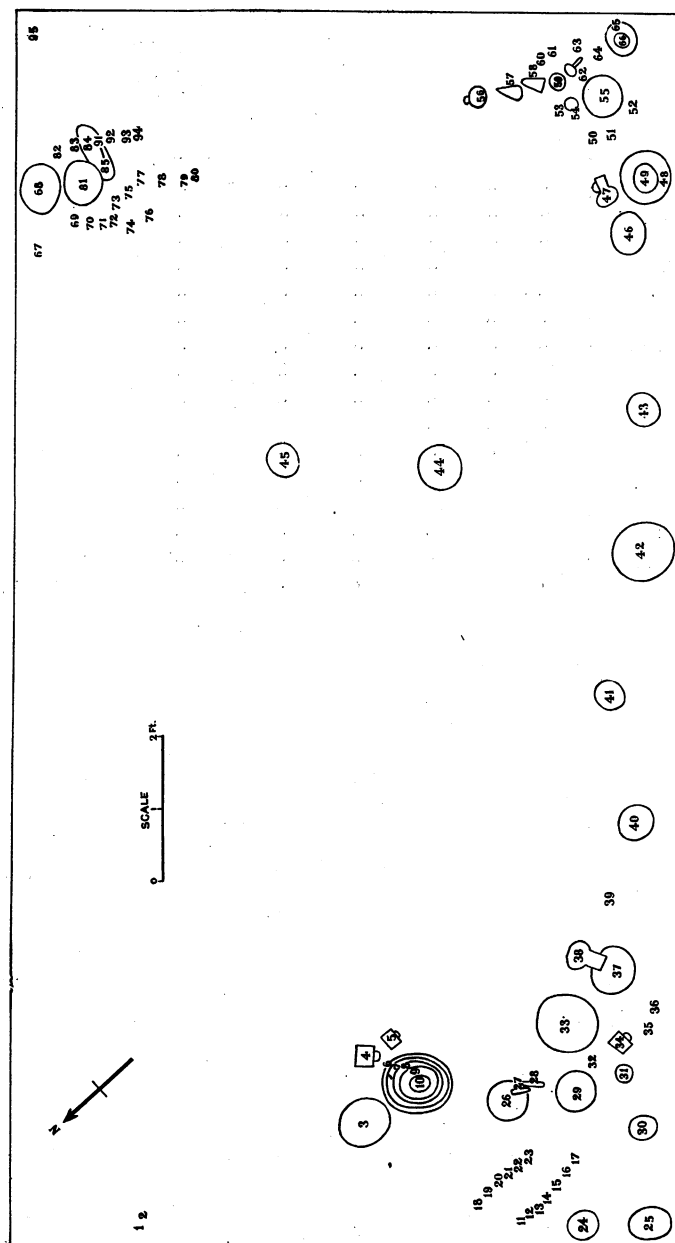


Fig. 6. Distribution of Objects in Burial 16. The Museum catalogue numbers for these specimens are given on opposite page .(See also pp. 156-158.)

The articles found with the body were five black-on-white bowls (29.0-7849-7853, inclusive); a small corrugated pot (29.0-7854); 15 bird bone tubes (29.0-7855-7861, inclusive); and the impression of a decayed coiled basket. The basket was cylindrical in shape, about 6 inches in diameter, and more than three inches in height. It was placed upright in one of the bowls.

#### ROOM 41, EAST WING.

*Burial No. 16.* The number of bodies originally present in Room 41 is uncertain. One adult lay partially flexed on the right side with back to the east wall and feet in the southeast corner. Just west of this skeleton was that of a second adult, apparently parallel to and with face toward the first. Between the center of the room and the southwest corner there were a few fragments of charred flesh and bone, portions of the body of a child. In the northwest corner and along the north wall there were the scattered remains of two more children. Here and there on the western side of the room there were bits of calcined flesh, so that while it can only be positively stated that burial No. 16 contained the bodies of two adults and three children, it is probable that there were more. (Fig. 7.)

About one foot of ashy refuse had accumulated in the chamber previous to its use for sepulture. The ashes were scraped back from the ends and the west wall to within from one to four inches of the floor, and the bodies placed in the resulting depression.

An astonishing quantity and variety of objects accompanied the remains. A large globular vase, the first object found, was resting against the breast of the adult in the southeast corner. When it was raised a mass of olivella shells was visible beneath it. The skeleton had been completely covered from throat to thighs with beads, abalone shell, and

#### EXPLANATION OF FIG. 6.

1-29.0-7942	19-29.0-7931	37-29.0-7888	55-29.0-7903	73-29.0-7926
2 -7943	20 -7928	38 -7908	56 -7910	74 -7978
3 -7885	21 -7979	39 -7921	57 -7918	75 -7954-7970
4 -7912	22 -7951	40 -7901	58 -7917	76 -7985
5 -7913	23 -7980	41 -7902	59 -7907	77 -7972
6 -7890	24 -7883	42 -7906	60 -8000	78 -7932
7 -7894	25 -7907	43 -7899	61 -8001	79 -7982
8 -7896	26 -7895	44 -7891	62 -7948	80 -7983
9 -7898	27 -7923	45 -7900	63 -7904	81 -7905
10 -7915	28 -7924	46 -7889	64 -7992	82 -7984
11 -7944	29 -7887	47 -7909	65 -7897	83 -7946
12 -7945	30 -7893	48 -7886	66 -7911	84 -7940
13 -7991	31 -7919	49 -7892	67 -8002	85-91 -7933-7939
14 -7971	32 -7922	50 -7930	68 -7884	92 -7949
15 -7976	33 -7882	51 (?)	69 -7941	93 -7972
16 -7977	34 -7914	52 -8007	70 -7950	94 -7973
17 -7997	35 -7990	53 -7925	71 -7952	95 -7927
18 -7929	36 -8003	54 -7920	72 -7953	

mosaic pendants. There was also an olivella shell anklet on the left leg. In the southwest corner there was a veritable heap of pottery vessels, bowls, large and small, mugs, and bird effigies. In one of the latter there were approximately 31000 tiny black disk-shaped beads. A line of vessels was continuous along the west wall. Near the northern end lay 200 quartzite arrowpoints, in a heap as if spilled from some container. A large bowl and vase were adjacent to the west half of the north wall. Charred and broken bird bone tubes, beads, turquoise inlay, and mosaic fragments were scattered everywhere. To recover them the débris was run through screens grading from coarse to fine. The smallest beads were secured by sifting the dust through a milk strainer.

The chart (Fig. 6) shows the positions in which the numerous objects were found, and a complete list is given below. Judging from conditions observed elsewhere there can be no doubt that textiles, wooden objects, and other perishable artifacts were plentiful among the burial offerings. Had Room 41 been protected from fire and moisture, it would have yielded a close rival to Pepper's unprecedented finds in Pueblo Bonito.

Those who laid the bodies away did not cover them with earth, and they must have remained exposed for some time previous to the conflagration. This is indicated by the fact that a portion of a strand of beads was encrusted upon the distal end of the shaft of the right femur of the second adult. The flesh of the leg had decayed permitting the beads to settle down upon the bone, and drift sand and rain-washed plaster had accumulated to a sufficient depth to protect the latter from fire.

The intense heat evidenced by the reddened walls and generally charred condition of Room 41 was generated principally by burning corn, fully two hundred bushels of which had been stored in the room above, most of it on the cob, but some evidently shelled. When the partially consumed floor supports gave way, the seething mass was precipitated into the chamber beneath, where lack of draft smothered out the flame before combustion was complete. A layer of carbonized corn, enclosing lumps of wood charcoal and brick-colored chunks of floor earth, covered Burial No. 16 to a depth of 18 inches.

List of specimens from Burial No. 16.<sup>1</sup>

29.0-7882	Bowl, black-on-white
7883	" " " "
7884	" " " "

---

<sup>1</sup>This list is copied directly from the field catalogue.

29.0-7885	Bowl, black-on-white
7886	" " " "
7887	" " " "
7888	" " " "
7889	" " " "
7890	" " " "
7891	" " " "
7892	" " " "
7893	" " " "
7894	" " " "
7895	" " " "
7896	" " " "
7897	" " " "
7898	" " " "
7899	" " " "
7900	" " " "
7901	" " " "
7902	" " " "
7903	Bowl, three-color Kayenta ware
7904	Dipper, red interior, black pattern, gray exterior, red pattern
7905	Vase with rim and cover flange, black-on-white
7906	Vase with rim and cover flange, black-on-white
7907	Water jar, two handles, black-on-white
7908	Pitcher, black-on-white, handle missing
7909	Pitcher, black-on-white
7910	Mug, black-on-white
7911	" " " "
7912	" " " "
7913	" " " "
7914	" " " "
7915	" " " " globular
7916	Vase, globular, black-on-white, bird head in relief on one side
7917	Bird-shaped vessel, head in relief, black-on-white
7918	Bird-shaped vessel, head in relief, black-on-white
7919	Corrugated pot, small
7920	Corrugated pot, small, unbaked, fragmentary
7921	200 quartzite arrowpoints
7922	Hematite paint stick
7923	Cylinder of red pigment, shows impression of cornhusk mould
7924	Cylinder of red pigment, shows impression of cornhusk mould
7925	Necklace of olivella shells, about 400
7926	Necklace of olivella shells, about 400
7927	Anklet of 70 olivella shells
7928	70 olivella shells
7929	Shell beads, conus sp. 33 nearly complete
7930	Shell beads, conus sp. 3 nearly complete
7931	Shells (pelecypod) 6 nearly complete
7932	Large shell pendant (gasteropod) fragmentary

29.0-7933	Abalone shell pendant, charred
7934	" " " "
7935	" " " "
7936	" " " "
7937	" " " "
7938	" " " "
7939	" " " "
7940	Fragments of abalone shell pendants
7941	Abalone shell, beads and bone embedded in charred earth
7942	Shell disk pendant
7943	" " " incomplete
7944	" " " "
7945	" " " "
7946	Shell disk, terraced for rings of inlay; inlay fragments adhering to back
7947	Shell disk
7948	2 shell disks and part of mosaic elements which covered them
7949	Worked shell, fragment of mosaic adhering to it
7950	5 worked shells
7951	Inlaid shell, incomplete
7952	172 large disk-shaped beads
7953	11 large cylindrical beads
7954-7970	Several hundred beads, unsorted
7971	Beads, mosaic fragments, bits of shell and turquoise, unsorted
7972	Flat irregular shaped beads, probably mostly turquoise
7973	Beads, frog-shaped
7974	Spherical pendant of turquoise matrix, incomplete
7975	Rectangular shell bead, fastened to bone backing
7976	Rectangular beads grooved and bone back
7977	Rectangular shell beads and shell fragments
7978	Disk-shaped beads, mostly very small
7979	Beads, bits of turquoise, galena, etc., unsorted
7980	36 figure eight beads
7981	57 feet of tiny black disk beads; about 31000. Buried in 7918
7982	15 feet of tiny pink disk beads, about 8500
7983	Distal end of right femur, beads like No. 1559 encrusted on shaft
7984	39 tubular bone beads
7985	Several hundred mosaic fragments, turquoise, galena, lignite, and stone
7986	Fragments of shell, miscellaneous
7987	Shell conus sp. (?)
7988	10 bird bone tubes found in No. 7916
7989	6 bird bone tubes found in No. 7912
7990	Many bird bone tubes, mostly broken
7991-2	" " " " " "
7993	Jasper drill, fragments of stone and galena, found in No. 7916
7994	Bits of cord, stone, etc., found in 7916



**Fig. 7. Burial 16, against South End of East Wall of Room 5. Beneath the spherical jar a mass of beads, and shell and mosaic disks, covered the skeleton of an adult from throat to thighs.**



**Fig. 8. Burial 24. The Absence of Pottery with these Three Skeletons is Characteristic of Most of the Late Mesa Verde Burials in the Aztec Ruin.**

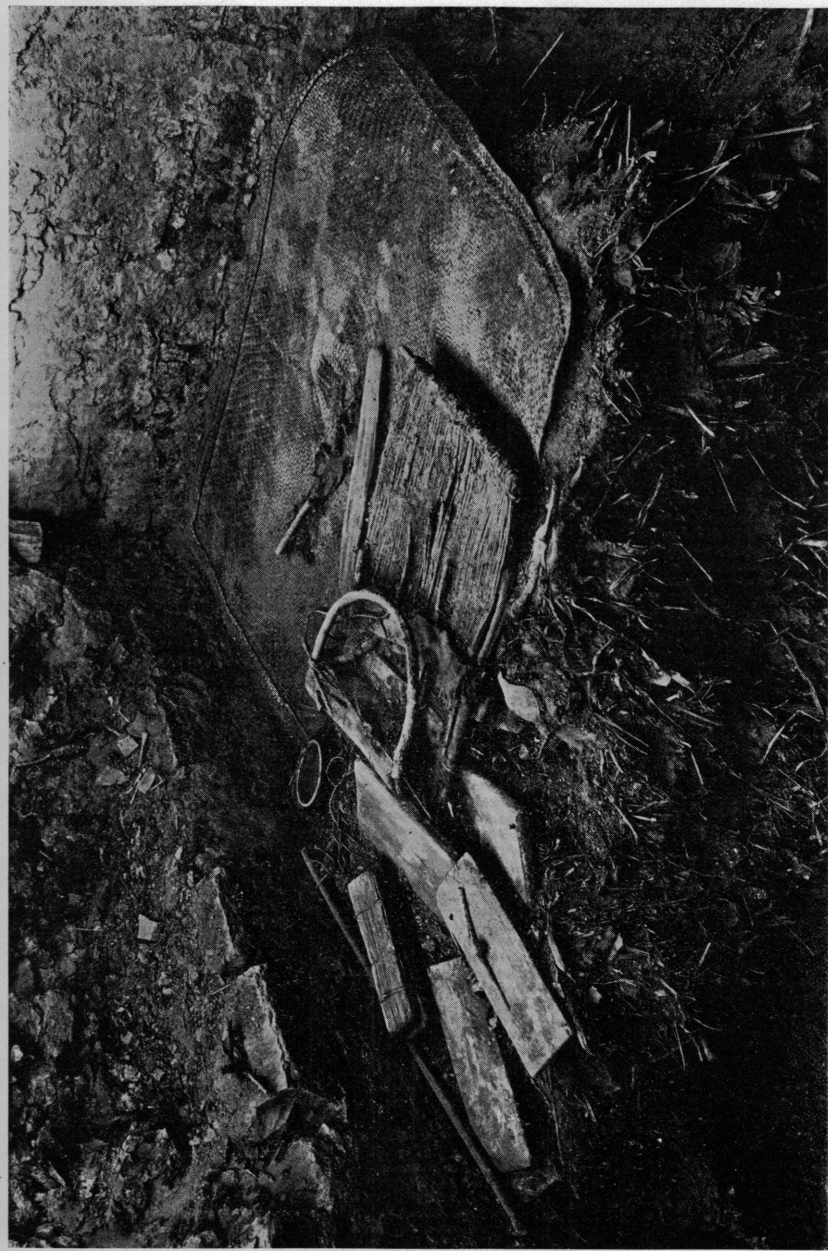


Fig. 9. Burial 20. Protected above by ten feet of fallen walls and beneath by vegetable refuse, no moisture had reached Burial 20. Hence the perishable accompaniments were perfectly preserved. Such conditions are extremely rare and serve to emphasize the incomplete knowledge of the range of burial accompaniments to be gleaned from an examination of graves in all but the most sheltered places.



29.0-7995	Charred cloth found in 7917
7996	Charred substance, cloth embedded in it, found in 7910
7997	Charred substance, cloth, embedded in it
7998	Galena crystals, bits of stone, etc., found in 7911
7999	Charred walnuts found in 7917
8000	Rectangular stone, polished
8001	Triangular stone, polished

#### ROOM 77, NORTH WING.

*Burial No. 17.* Infant, flexed, lying on floor on left side with head to the east, feet in the northwest corner, and back against the north wall. Some of the bones were missing, evidently having been carried off by rats, the nests of which covered the remains. There were a few cobblestones east of the body, and a sandstone over the legs. These may have been intentionally placed. There were no accompanying objects nor traces of wrappings.

#### ROOM 109, SOUTH WING.

*Burial No. 18.* Infant lying on a secondary floor in the northwest corner. The bones were much disturbed, and the position of the body undeterminable. There were no accompanying objects, nor remains of wrappings. Refuse covered the bones.

#### ROOM 94, NORTH WING.

*Burial No. 19.* Infant, lying on the floor about five feet from the west and three feet from the north wall. The bones were disturbed and the position of the body undeterminable. There were no accompanying objects, nor traces of wrappings. Drift sand covered the remains.

#### ROOM 95, NORTH WING.

*Burial No. 20.* Infant, lying near the northeast corner of the room. On top of an 18 inch layer of dry vegetable refuse was spread a worn and incomplete plaited rush mat (29.0-8956) and above it a whole one (29.0-8955), with longer dimension paralleling the east wall of the room. On the western side of the mat, nearer to the wall than to the southern extremity, lay a cradleboard (29.0-8957) upon which were some of the infant's bones. Portions of the skull were beside the western edge of the cradle, and other bones were scattered about in the neighborhood.

Between the cradleboard and the east wall was a piece of heavy cotton cloth (29.0-8960) and quantities of lint chewed from the cloth by rats. Between the cloth and the cradle was a flattened stick with both

ends charred (29.0-8969). Across the cradle was a woven band (29.0-8964) and beside it a strand of bone and walnut shell beads strung on a buckskin thong (29.0-8967). Between the cradle and the north wall were a coiled basket (29.0-8958), a ceremonial stick (29.0-8968), and five pine boards (29.0-8970-8973 inclusive). Over the basket and the adjacent boards there was a portion of the cordage base of a piece of feather cloth (29.0-8963). West and south of the mat were a basket (29.0-8959), a piece of cotton cloth (29.0-8962), a baby's moccasin (29.0-8965), and a piece of fringed buckskin ornamented with porcupine quills. Doubtless these were accompaniments of the burial that had been dragged from their places by rats. (Fig. 9.)

Covering the whole was a few inches of vegetable refuse composed principally of cornhusks and tassels, cedar splinters, and rat excrement. Over this lay the masonry of the north wall which had settled and split down to a point just above the burial, forcing the veneer course over *en masse* across the east end of the room.

#### ROOM 106, SOUTH WING.

*Burial No. 21.* Young child, flexed, on left side with head to north, lying on a secondary floor with head in the northwest corner and back along the west wall. Near the face were three vessels; a black-on-white bowl (29.0-9300), a small corrugated pot (29.0-9301), and a miniature cocoon-shaped vessel (29.0-9302). There had been a wrapping of rush matting. The burial was covered with a thin layer of refuse, then with drift sand.

#### ROOM 107, SOUTH WING.

*Burial No. 22.* Two infants with bones so mixed and scattered that the burial positions were not ascertained. They lay on a secondary floor against the center of the east wall. There were traces of rush mat wrappings, but no accompanying objects. Refuse covered the remains.

#### COBBLESTONE ANNEX WEST OF MAIN PUEBLO.

*Burial No. 23.* Young person, fusion of shafts and epiphyses in long bones not quite complete, lying on left side, flexed, with head to north, left hand under neck and right forearm across the breast. The body faced a flimsy adobe wall. There were two vessels by the breast: a black-on-white dipper bowl (29.0-9016) and a tiny corrugated pot (29.0-9017).

This body was found two feet below the surface in a pit from which adobe earth was being dug for mortar.

## ROOM 109, SOUTH WING.

*Burial No. 24.* Three adults lying on a secondary floor.

(1) Lying on the right side, flexed, with head to northeast, and body parallel to the south wall.

(2) Lying on back, closely flexed, with head toward north. The arms and legs were mashed down along the sides of the trunk. The body must have been bound at the time of burial to retain this position.

(3) Lying on right side, partially flexed, feet drawn up against buttocks, knees extending down from and in front of body, head toward west. The right arm was folded beneath the body, the left extended toward the thighs.

The bones of all three were more or less disturbed, and badly decayed. There were no accompanying objects nor traces of wrappings. The latter, however, would not have been recognizable even if they were originally present. Refuse covered the remains. (Fig. 8.)

About one foot above the first skeleton were the left femur and left tibia of an adult, lacking respectively the proximal and distal extremities. No other portions of this skeleton were found. Scattered among the refuse in the northeast corner of the room were portions of the skeleton of a small child.

## ROOMS 110, 111, 112, NORTH WING.

*Burial No. 25.* Two adults. These bodies had been placed on the uneven surface of a refuse deposit adjacent to the south half of the west wall of Room 111. The refuse was four feet deep beneath the remains, sloping down to 2½ feet in the northwest corner, and tailing off to 1½ feet at the east end of the room.

The mortuary offerings accompanying the bodies comprised a wealth and variety of objects; pottery vessels, beads and ornaments, arrow-points, cloth, sandals, matting, ceremonial sticks, etc., etc. The specimens recovered are given in the following list. Most of the perishable objects were hopelessly decayed, and consequently are not represented in the list. It may be doubted whether all of the vessels enumerated were among the mortuary offerings. The incompleteness of many of them suggests that they may have been thrown into the chamber as refuse at a later date.

Originally the bodies were covered with numbers of plaited rush mats, but not with earth. Prior to their final interment by the action of the elements, some agency accomplished the disappointingly thorough destruction of most of the accompanying artifacts, and of many of the

bones themselves. One skull, numerous other bones, the pottery vessels without exception, necklaces of beads, pendants, etc., were crushed and scattered all over Room 111, through the door in the north wall, across Room 110, and even into Room 112 beyond. The complete skull was west of the door of Room 112, while its mandible was lying southeast of the center of Room 111.

In Room 112 the layer containing the broken artifacts was on top of a thin deposit of vegetable refuse which had been partially burned. In Room 110 it was above a stratum of almost pure ashes varying from a mere line to 6 inches in thickness. In these two rooms the vertical distribution was confined to a band of washed and blown sand at no point more than three inches thick. The same was true of the east end of Room 111, but from the line of the door toward the west wall the layer progressively thickened to a maximum of between six and seven inches, the greater depth being due to the partially decayed organic material derived from the bodies, from mats, cloth, baskets, ceremonial sticks, etc., with a considerable admixture of rat excrement.

In Room 111 the immediate covering of the specimen bearing stratum consisted of from 6 to 15 inches of stratified sandy earth deposited by wind and rain. Above this was the fallen ceiling of the room.

It would be interesting to know where to place the blame for the general havoc wrought with this burial. Carnivorous animals might have dragged portions of the bodies from one chamber to another, but it is not to be supposed that they would have crushed the artifacts so thoroughly, and certainly they would not have eaten or carried away portions of them. The removal of small bones, potsherds and the like might be attributed to pack rats. However, the paucity of turquoise, the finding of parts but not all of large ornaments, and the presence of portions of the vessels too large for the rodents to have moved in Kiva L inclines one to the belief that human marauders and looters must have visited Room 111 soon after the bodies therein were laid away.

List of Specimens from Burial No. 25.

29.0-8655	Bowl, black-on-white			
8656	"	"	"	"
8657	"	"	"	"
8658	"	"	"	"
8659	"	"	"	"
8660	"	"	"	"
8661	"	"	"	"
8662	"	"	"	"
8663	"	"	"	"

29.0-8664	Bowl, black-on-white
8665	" " " "
8666	" " " "
8667	" " " "
8668	" " " "
8669	" " " "
8670	" " " "
8671	" " " " incomplete
8672	" " " " "
8673	" " " " "
8674	" " " " "
8675	" " " " "
8676	" " " " "
8677	" " " " "
8678	" " " " "
8679	" " " " "
8680	" " " " "
8681	" " " " "
8682	" " " " "
8683	" " " " "
8684	" " " " "
8685	" " " " "
8686	" " " " "
8687	" " " " "
8688	" " " " "
8689	" " " " "
8690	" " " " "
8691	" " " " "
8692	" " " " "
8693	Mug, black-on-white, incomplete
8694	Water jar, black-on-white, incomplete
8695	Water jar, black-on-white, incomplete
8696	Water jar, black-on-white, incomplete
8697	Dipper, black-on-white
8698	Bowl, black-on-red, incomplete
8699	Bowl, black-on-red, incomplete
8700	Bowl, black-on-red interior, red-on-cream exterior
8701	Bowl, black, Tularosa type of coiling
8702	Bowl, black, Tularosa type of coiling, incomplete
8703	Bowl, black, Tularosa type of coiling, incomplete
8704	Bowl, black, rectangular, Tularosa type of coiling
8705	Bowl, black, trough-shaped, incomplete
8706	Potsherds, black, Tularosa type
8707	Potsherds, red.
8708	Potsherds, black-on-white
8709	Corrugated pot, spine-like ornamentation, incomplete
8710	Potsherds, corrugated. Contain restorable vessels
8736	Bird bone whistle

- 29.0-8737      Mammal bone scraper; recessed for inlay  
8738      Thin strip of bone, 3 perforations near one end  
8739      Large flake of flint-like stone; implement (?)  
8740      Polished stone disk; pot lid  
8741      Polished stone disk; pot lid  
8742      Polished stone disk; pot lid, incomplete  
8747      6 white arrowpoints  
8748      6 red arrowpoints  
8749      2 white arrowpoints, incomplete  
8750      Portion of black chipped knife blade  
8751      Portion of black chipped knife blade  
8752      Portion of white chipped knife blade  
8754      Piece of turquoise, unworked  
8755      Crystal of galena  
8756      Piece of lignite  
8757      Portion of polished stone ornament  
8758      Polished stone, small, rectangular  
8759      Bits of copper ore; pigment  
8760      Bits of turquoise, galena, pink stone, etc., broken beads and  
                inlay fragments  
8761      Portions of beaver tusk ornaments  
8762      95 disk-shaped turquoise beads; low grade stone  
8763      Large cylindrical turquoise bead; low grade stone  
8764      21 disk-shaped, turquoise beads, first quality stone  
8765      Composite bead, turquoise and white stone  
8766      2 large cylindrical beads. Massive amethyst (?)  
8767      Spherical bead. Copper ore (?)  
8768      6 button-shaped lignite beads; large  
8769      3 button-shaped lignite beads; small  
8770      Spheroidal lignite bead  
8771      Lignite pendant, incomplete  
8772      2 button-shaped beads, yellow stone  
8773      Rectangular bead, stone or shell  
8774      Stone pendant, ham-shaped. A fossil polished on back and  
                edges  
8775      Abalone shell pendant, circular  
8776      Abalone shell pendant, circular  
8777      Abalone shell pendant, incomplete  
8778      Shell bead, cylindrical  
8779      15 disk-shaped shell beads, white to purple  
8780      2.3 feet of beads. Small olivella shells truncated  
8781      10 olivella shell beads  
8782      12 feet of beads strung as originally worn; two white; one black;  
                two white  
8783      13.4 feet of white disk-shaped beads like 8782  
8784      About 150 black disk-shaped beads like 8783  
8785      4 white, 5 black beads on original sinew string  
8786      Beads, black and white, on original cords

29.0-8787	Plaited rush matting, decayed
8788	Fragment of plaited rush matting, piece of sewed rush matting adhering to it
8789	Extra large and heavy sandal-shaped object; woven, technique not determined
8790	Duplicate of 8789
8791	Small coiled basket, decayed
8792	Portions of coiled baskets
8793	Portion of ceremonial stick, decayed cloth adhering to it
8794	Sandal-shaped slab of pine bark
8795	7 small bow-shaped ceremonial sticks
8796	Fragments of small bow-shaped ceremonial sticks
8797	Fragment of ceremonial stick, portions of 2 bow-shaped sticks like 8795 attached to it
8798	Bundle of small, very slender ceremonial sticks
8799	Ceremonial stick, decayed
8800	Ceremonial stick, decayed
8801	Ceremonial stick, decayed
8802	Ceremonial stick, decayed
8803	Portions of ceremonial sticks, representing at least 30 individual specimens
8804	Squash shell disk, perforated at center
8805	Squash shell disk, perforated at center
8806	Squash shell disk, perforated at center
8807	Squash shell disk, perforated at center; piece of rush matting adhering to one side
8808	Small curved stick
8809	Portion of hearth of firedrill

#### ROOM 107, SOUTH WING.

*Burial No. 26.* Infant, bones disturbed, position not determined; buried in refuse immediately beneath a secondary floor against the north wall  $2\frac{1}{2}$  feet from the northeast corner. There had been a covering of willow matting. A black-on-white bowl and a mug (29.0-9285-9286) were on top of the south edge of the mat. In digging a fire pit in the secondary floor, occupants of the room had removed portions of these vessels.

#### ROOM 139, NORTH WING.

*Burial No. 27.* The finds in this room will be described on page 214.

*Burial No. 28.* Infant, head to south, skeleton disturbed and incomplete, lying in refuse against the east wall, 4 feet from the southeast corner of the room, and 16 inches above the floor. There were no accompanying objects, nor traces of wrappings.

#### ROOM 141, NORTH WING.

*Burial No. 29.* Burial No. 29 was rifled in 1882; hence, a description of it necessarily will be incomplete. The ceiling of Room 141 is intact,

and according to Mr. Sherman Howe, who was among the first to enter the chamber, the skeletons lay in plain view, only partially covered by sifted dust and sand. The number of bodies is variously reported to have been from thirteen to sixteen. The following objects are enumerated as having been removed from the chamber; skulls retaining hair and dried flesh; many pottery vessels and coiled baskets; rush mats; large pieces of cloth; sandals, "clothes" and "walking sticks"—probably large ceremonial sticks.

The clearing of the chamber threw some light upon the conditions and features of the burial. The bodies had been placed upon an accumulation of from 4 to 10 inches of refuse. Some at least had the customary complete vestiture of cotton and feather cloth, with ultimate coverings or shrouds of plaited rush matting.

The first comers turned the contents of the room, beginning at the north wall, working thence southward, and throwing the débris behind them. During this procedure many bones, bits of matting, cloth, etc., were overlooked or discarded and reinterred. The following is a list of the objects recovered from the room which it is reasonably certain were either burial accompaniments or portions of the wrappings:—

29.0-9662	Plaited rush matting, many fragments
9663	Fragment of rush matting, ornamentally plaited
9664	Yucca cord, mostly feather-wrapped
9665	Fragments of feather cloth
9666	Fragment of feather cloth, cotton cloth adhering to it
9667	Piece of cotton cloth
9668	Piece of cotton cloth
9669	Piece of cotton cloth
9670	Piece of cotton cloth
9671	Piece of cotton cloth
9672	Piece of cotton cloth; adhering to buckskin
9673	Hank of cord; cotton (?)
9674	Cotton cord
9675	Piece of buckskin
9676	Human hair
9677	Human hair cord, heavy, square braided
9678	Ball of yucca fiber tied with cord
9679	Center of coiled plaque or basket
9680	Bowl, black-on-white, incomplete
9681	Vase, black-on-white, incomplete
9682	Vase, black-on-red, Kayenta type

An examination of the bones reveals the presence of ten pairs of innominate and femora, thus proving that at least ten bodies were present in Burial No. 29. It is doubtful if there were more than that number.



One of the individuals was perhaps fully grown, but not altogether mature as evidenced by the separation of the epiphyses from the long bones. The others varied from infants of scarcely more than foetal development to children of twelve to fifteen years.

Had there been beads and ornaments with the bodies, certainly some of them have been scattered and overlooked by previous searchers. Since none were found in sifting the débris, it is evident that such objects had not been included among the accompaniments, thus placing Burial No. 29 in marked contrast to the group burials previously opened in the east and north wings.

*Burial No. 30.* In the northwest corner of Room 141, with long axis parallel to the north wall, a pit 11 by 28 inches had been dug in the floor to a depth of 7 inches. In it was the body of a young child, lying on the right side of the back with head to the west. The legs were partially flexed, and the arms were crossed over the abdomen. From the position of the mandible, it was evident that the skull had extended above the floor, and as it was missing, it is reasonable to suppose that it was removed by those who dug over the contents of the room down to the floor level.

Several layers of rush matting covered the body. Decomposition was so thorough that were they originally present, no remains of cotton or feather cloth could be identified. To the right (south) of the mandible was a black-on-white mug (29.0-9684) and inverted over it a decayed coiled basket (29.0-9685). In the region of the neck were two beads: one a conus shell with the spire ground off (29.0-9686), the other an olivella shell (29.0-9687).

#### ROOM 138, WEST WING.

*Burial No. 31.* Child, partially flexed, wrapped in feather cloth and enclosed in a shroud consisting of a large plaited rush mat folded upward and over the body. A thong of yucca strips encircling the bundle in the region of the lower limbs held this portion in place and a heavy yucca fiber cord tied in a bowknot surrounded the middle part. The head end of the bundle was broken open and the skull crushed. (Fig. 10.)

Upon the second floor, the northern third of which had not entirely fallen, there was a quantity of loose sandstones which had toppled down from an upper wall. Over the stones had been deposited a small quantity of dry vegetable refuse and ashes. The burial bundle lay on the surface of this refuse, diagonally across the northeast corner of the room with head against the east wall. About one foot south of the skull was a small

corrugated pot (29.0-9691). To a depth of 1 inch it contained the decayed remains of a pasty vegetable substance, perhaps mush or cooked squash. Some 2 feet of dry refuse—cobs, husks, bark, splinters, and ashes—covered the burial.

The ceiling of the first story had partially collapsed, and in the consequent settling of the débris, the bundle was considerably crushed.

*Burial No. 32.* Young adult, presumably female. The third molars were visible in both jaws. Synostosis of the long bones was incomplete. The heels were drawn up against the buttocks and the knees bent forward and downward from the trunk at an angle of about 50°. The left arm was crossed over the abdomen, and the right was bent so that the hand covers the breast at the base of the throat.

A feather string cloth was wrapped around the body, covering it completely. External to this was a plaited rush mat. The body lay on the left side with right shoulder inclined forward. On the right side, which was uppermost, much dried skin and the wrappings were intact. Desiccated flesh covered the legs and feet and shrunk ligaments and bits of scalp, retaining a few wisps of black hair, adhered to the skull.

There was approximately three feet of fallen masonry on the second floor in the northwest corner of the room. The body was placed on the irregular surface of the stones with face to the north wall and head some two feet from the northwest corner. As a result of the unequal settling of the second floor, when found, the burial sloped downward from head to foot at an angle of 45°. The skull was broken away from the trunk which was somewhat crushed. (Fig. 32.)

External to the wrappings, covering the trunk, was a rectangular object resembling the bottom of a cradleboard, made of very slender unpeeled sticks (29.0-9696). Back of the shoulders was a coiled basket (29.0-9694) containing a smaller one, inverted (29.0-9695). Behind the pelvis were a mug (29.0-9697), a corrugated pot (29.0-9698), and some fragments of a black-on-white bowl.

From 4 to 6 inches of dry refuse, a continuation of the deposit which lay above Burial No. 31, formed the immediate covering of the remains.

*Burial No. 33.* Young child, partially flexed, on the left side with head to the west, adjacent to the west wall of the room, 4½ feet from the southwest corner, and 15 inches below the surface of the mound. This skeleton lay in refuse of relatively late deposition.

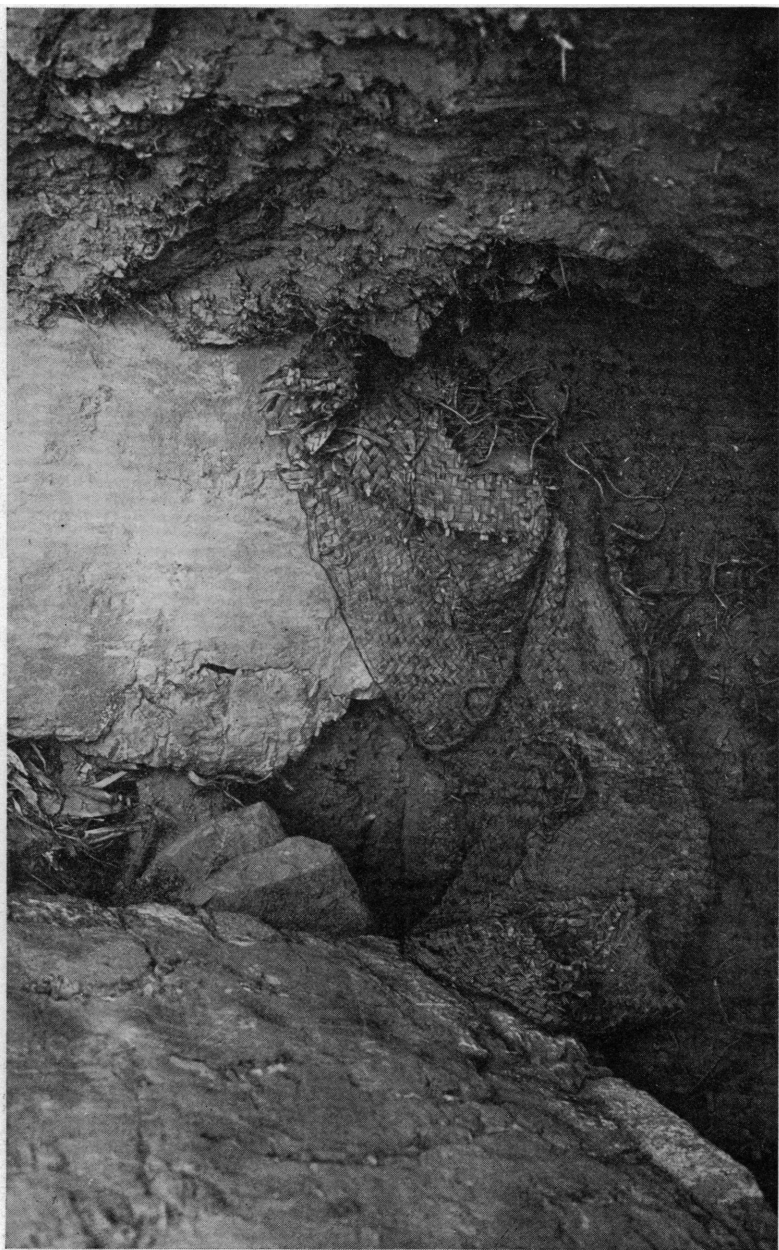


Fig. 10. Burial Bundle (No. 31) resting upon Vegetable Refuse overlying Wall Debris above the Second Floor of Room 138.



Fig. 11. Burial 32. Where Interments were made in the Second Story the Subsequent Collapse of the Ceiling beneath often precipitated them in a jumbled Mass into the Lower Chamber. Burial 32 was one of the less extreme examples, the footward end having settled about three feet from its original position.

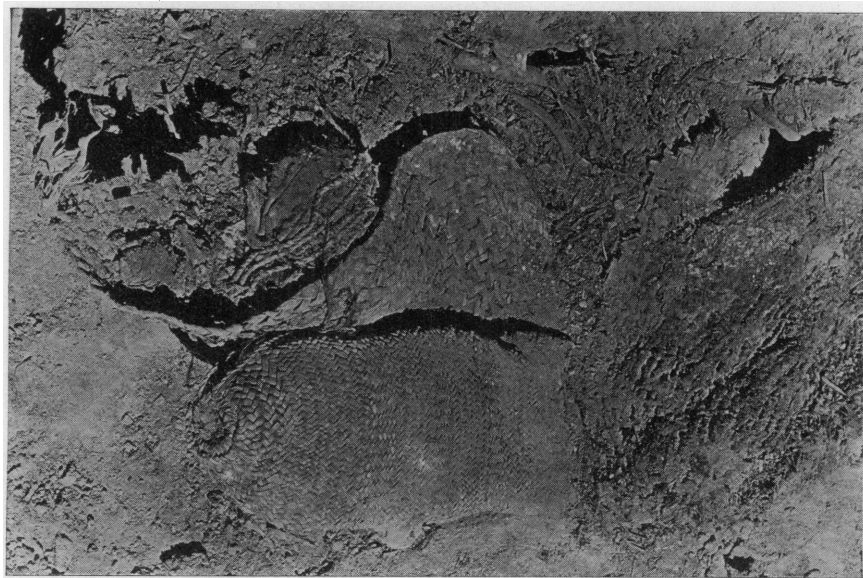


Fig. 12. Burial 34, a Second Story Burial. In the second Story more frequently than in the first, burials were sufficiently well preserved to reveal the exact nature of the wrappings and perishable accompaniments.

ROOM 135<sup>2</sup>, NORTH WING.

*Burial No. 34.* Young adult of small stature, on right side with head to the west. The knees were drawn up against the chest, the left forearm lay across the abdomen, and the right arm was extended beneath the body, which lay with back against the middle of the north wall in a shallow depression scooped out of the earth floor to within an inch of the timbers supporting it.

A heavy cotton cloth (29.1-23), sewn together from several separate pieces, swathed the head and neck. Trunk and limbs were enveloped in a feather string blanket. There were two thicknesses of plaited rush matting both above and below the body. From the position of the fragments it appeared that two large mats were laid with an edge against the wall, the body placed on them, and then the free edge folded upward and over the remains. All wrappings were considerably decayed except the cloth covering the face and left side of the skull. Much dried flesh remained on the bones, particularly those of the lower limbs. Beneath the skull was a mass of impacted matter—flesh, cloth, matting, etc., enclosing hanks of black hair.

In front of the body, external to the feather cloth and one thickness of matting, was a large sausage-shaped bag (29.1-25), reaching from beside the skull to beneath the knees. A variation in the plaiting of this bag produced transverse bands of ornamentation. (Fig. 12.)

Eight inches of refuse, the thin edge of the deposit which covered the floor of Room 135<sup>2</sup> lay over the remains.

## ROOM 143, NORTH WING.

*Burial No. 35.* Young child on right side of back with head to the east. The grave was dug to a depth of 15 inches in the two-foot accumulation of refuse which covered the floor of the room, the masonry of the north and east walls forming two sides of the pit. The child had been buried with or upon a cradleboard. The skull was where it normally should have been, reposing upon the slab of wood which formed the headrest of the cradle. The legs, however, were between the broken bed of the latter and the north wall. Beneath the headrest was a black-on-white bowl (29.1-66), the rim of which had cut a deep ring in the spongy wood. South of the skull was a mug (29.1-67) and in the neck-breast region were two conus shell beads (29.1-62-63), a pendant of red stone (29.1-64), and one of lignite (29.1-65). On top of the trunk and limbs were two billets of cottonwood root (29.1-69-70), and a board (29.1-71). Two thicknesses of rush matting, representing probably a large mat

folded in the middle, covered the remains, but there was no matting beneath, nor were there traces of cotton or feather string cloth. Above the other objects, lying lengthwise of the body, was a short digging-stick (29.1-68).

From the position and condition of the cradle, it is evident that the excavation was too small, and that the cradle was broken in order to permit that which it was desired to bury to sink to the bottom of the pit. Presumably the digging-stick was the one with which the grave was dug.

#### ROOM 136<sup>2</sup>, NORTH WING.

*Burial No. 36.* Small child enveloped in a plaited rush mat. The mat was folded upward and over the body in such a manner as to form a rectangular bundle. The bundle lay on the sloping surface of the refuse fill with head toward and 18 inches distant from the southeast corner of the room. The long axis pointed about 20° north from the line of the south wall. The bundle was mashed flat, and the head portion torn by the broken end of the south ceiling support which had fallen directly upon it. There are two yucca binding cords, one encircling the foot end, the other passing around the middle. Other wrappings may be present beneath the mat or shroud, but there was no evidence of them around the skull which was partially visible.

This burial evidently was the last to be made in Room 136<sup>2</sup> as there was no refuse of human origin surrounding or on top of it.

*Burial No. 37.* Infant, on left side with head to the north, lying in refuse against the east wall 3 feet from the south end, and 2½ feet above the floor. The skull was absent, probably having fallen into the room below through a crack left where the ceiling of the first story had pulled away from the masonry. There remained portions of two wrappings; an inner one of feather cloth, and an outer one of rush matting.

*Burial No. 38.* This burial and the three following were in a bin which occupied the northeast quarter of Room 136<sup>2</sup>. The south and west walls of the enclosure were flimsy affairs of adobe and small stones rising to a height of two feet above the floor. Burial No. 38, the first to be encountered, was that of a small child, flexed, and lay on the right side with back to the east wall and head to the north, in the northeast corner of the bin, two feet above the floor. Moisture from above, presumably before the ceiling collapsed, reached this body and all wrappings had thoroughly decayed, but there remained the impression of a plaited rush mat in the ashy refuse. (Fig. 13.)



Fig. 13. Burials 38, 39, 40. Storage Bins were occasionally put to a Secondary Use as Burial Places. In the above instance coiled baskets instead of pottery vessels were placed with the dead.





Fig. 14. Burial 41, the Perfectly Preserved Burial Bundle of a Child on the Floor of the Bin beneath Burials 38, 39, 40, shown in Fig. 13.



*Burial No. 39.* Small child. The body was placed across the center of a plaited rush mat, with head near one edge. The sides of the mat were folded over the body from right to left, and left to right. Above the head the three thicknesses were pierced and lashed together with a strip of yucca leaf. Presumably the opposite end was similarly fastened. This initial package was laid upon another mat which was folded from left to right, and right to left, that is, in reverse order to the first. The second mat was incomplete, and enveloped only the lower two thirds of the body, but extended some eight inches beyond the first, which portion was doubled upward and forward toward the head. Two thongs of yucca strips bound the outer mat in place, one passing around the middle of the body, the other around the lower limbs.

The burial package lay diagonally across the northwest half of the previously mentioned bin, with head to the northeast. It was in dry refuse 20 inches above the floor. It is assumed that the large coiled basket plaque (Field No. 3577) which was at the same level in the south-east corner, was an accompaniment of this burial. (Fig. 13.)

*Burial No. 40.* A child considerably larger than the others found in Room 136<sup>2</sup>. The fully extended body lay face upward across the center of a rush mat the edges of which were folded over the remains from right to left and left to right in the order given. A long yucca cord, once part of a piece of feather cloth, encircled the neck portion of the bundle, was tied there and then passed spirally beneath and around, and was tied again over the pelvis. Another cord encircled the lower limbs. At the head end the three strips of matting were perforated and fastened together with a yucca leaf.

The burial was adjacent to the north wall of the bin, 14 inches above the floor, with head to the west and 15 inches distant from the west wall. One plaited rush mat, folded in the middle, lay beneath the bundle, and another, similarly folded covered it (Field Nos. 3579, 3580). Two perfectly preserved coiled baskets (Field Nos. 3581, 3582) were between the head and the west wall. In the bottom of the smaller basket was a mass of dried vegetable substance which originally was of a mushy or pulpy consistency, perhaps cooked squash.

Beneath the upper mat, opposite the shoulder region, were two short strands of beads (Field Nos. 3583, 3584). One strand consists of thirty white disks and one black disk, with an olivella shell at each end; the other of eighteen white wedge-shaped beads perforated near the thinner edge, and one rectangular piece of low grade turquoise. These beads may have been brought from within the bundle by rats.

*Burial No. 41.* Infant in a perfectly preserved burial bundle. The body lies on the right side, flexed, and is completely enveloped in the yucca cordage of what was a feather cloth blanket. The tiny form thus wrapped was placed on one edge of a rush mat which was folded over it from back to front, and the portion which extended beyond the head folded under in a manner that is not superficially apparent. Three transverse binding strips of yucca leaf hold the mat in place. (Fig. 14).

This bundle lay at the center of the south half of the bin, with head toward the east and slightly nearer to the south wall than were the feet. There was a mass of partly shredded cedarbark 2 inches thick between the bundle and the floor.

There was a small basket of unusual workmanship (Field No. 3586), which probably belonged with Burial No. 41, on the floor at the east edge of the bin. It seems to have been made in two parts. The inner component is a bowl rather loosely plaited of yucca strips, the ends of which are bent outward and downward over the withe which forms the enclosed element of the rim, and are sewn to the walls with yucca cord. The outer component is a strong, firm border  $1\frac{1}{4}$  inches wide, made of closely plaited yucca leaves. Its upper edge rises slightly above the margin of the bowl and curves somewhat inward over it. There is no evident attachment between rim and bowl, the former apparently being held in place by the shrinkage of its fibers as they dried.

#### ROOM 145, WEST WING.

*Burial No. 42.* Child, flexed, on right side with head to east. In the northwest corner of the room a pit had been dug to the bottom of a 20 inch refuse deposit underlying a secondary floor. In consequence, the skeleton was lying on the original floor, with face to the north wall. There were impressions of rush matting in the earth, but no distinguishable traces of other wrappings. Between the skull and the north wall was a dipper bowl (Field No. 3814) and fallen between the ribs, to the left of the sternum, a red stone pendant (Field No. 3815).

#### ROOM 150, WEST WING.

*Burial No. 43.* Young adult. The skeleton lay on the floor, face downward, parallel to the west wall with head 18 inches from the south-west corner. The tightly folded legs were huddled beneath the left side of the body as a result of which the right shoulder was somewhat lower than the left. The elbows were sharply bent, the hands, open, one within the other, being at the base of the throat. Decay was so thorough that

there were no identifiable vestiges of wrappings, but a good deal of brown mould suggested their former presence. Washed and blown sand and adobe covered the bones.

A very small black-on-white bowl (Field No. 3938) was inverted beneath the right shoulder. Adjacent to the south wall, slightly east of the line of the longer axis of the body, was a large black-on-white bowl (Field No. 3936) containing two mugs (Field Nos. 3939, 3940) and two small corrugated pots (Field Nos. 3941, 3942). West of the large bowl was one of medium size (Field No. 3937), lying on its edge, the bottom leaning against the wall.

*Burial No. 44.* Under this heading are grouped the remains of at least three small children, as identified by portions of skulls. The bones were scattered over the northern two thirds of Room 150, but were most plentiful near the northwest corner. They had a vertical distribution of about 8 inches in stratified wind-blown and rain-washed earth containing occasional sandstones and ceiling splinters. Near the top of the bone-bearing strata, 18 inches from the west wall and 2 feet from the north, there lay, inverted, an unusually fine black-on-white bowl (Field No. 3944). Scattered over the same area as the bones were the fragments of another bowl (Field No. 3945). These bodies and vessels seem to have been on the second floor whence they fell as decay gradually removed the supporting timbers.

*Burial No. 45.* Infant, flexed, on right side with head to the east. The skeleton was in an irregular pit 4 inches beneath the last used floor level, opposite the center of the south wall. There were shreds of rush matting above and beneath the bones, and vestiges of a small coiled basket by the face.

*Burial No. 46.* Adult with much worn teeth, apparently a female. The skeleton lay on the right side with head to the north, feet drawn up against the buttocks, knees extending at right angles from the trunk, and hands covering the breast. The grave pit, which was cut down to a depth of 20 inches beneath the last-used floor level in the northwest corner of the room, was not quite large enough, the skull being jammed against the north wall, and the knees somewhat elevated, resting on the sloping side of the excavation.

A decayed mat-like object lay immediately above the bones, extending from the shoulders down to and partly upon the thighs. It consisted of reed stems laid side by side, doubled down and under and lashed together, enclosing a transverse stick at each end. This object resembled the base of a cradleboard. On top of it was a pine board 18

by 7 by  $\frac{3}{4}$  inches, with long axis parallel to that of the body. There had been a feather cloth wrapping, and to judge from the quantity of mould, one of cotton cloth as well.

Resting on the left side of the skull, and against the north and east walls were four black-on-white bowls (Field Nos. 3949-3952, inclusive). Two were upright, one inside the other, while the second pair, each corresponding in size to the one it covered, was inverted on top of them.

Above the remains flat strips of cedarbark were laid across the pit from east to west to a depth of several thicknesses. So well had this covering excluded the earth that cavities remained within the chest and beneath the legs in which water had collected and stood. As a result of long and repeated wetting, the perishable objects, and even the bones, were badly decayed.

#### Room A.12.

Room A.12 is a pit room at the western edge of the cobblestone annex situated westward of the great pueblo.

*Burial No. 47.* Two adults: (1) aged male, on back, head to east, legs flexed, knees elevated, the left more than the right, upper arms parallel to the trunk, hands crossed upon the pelvis. The skeleton lay with left side against the south wall of the pit in refuse one foot above the floor.

(2) Aged female, on left side, head to north, legs flexed practically at right angles to the trunk, knees slightly elevated, hands, left above the right at the left and in front of face. This skeleton was at the same level as the first with back against the west wall of the pit.

#### Room 153<sup>2</sup>, NORTH WING.

*Burial No. 48.* Infant, very small, with bones so disturbed that the position of burial was not determinable. It lay near the surface of the refuse fill in the extreme northeast corner,  $3\frac{1}{2}$  feet above the floor.

*Burial No. 49.* Infant, flexed, on left side, head to east and back against the center of the north wall,  $3\frac{1}{2}$  feet above the floor. Decay was thorough, but the earthy refuse retained impressions of a wrapping of rush mats.

*Burial No. 50.* Infant, flexed, on right side with back against the east wall and skull touching the north, lying in refuse 3 feet above the floor. There were a few shreds of rush matting over the bones. Eight inches from the face was a mug (Field No. 3971) with the handle missing. This burial was directly beneath and only 6 inches below Burial No. 48.



Fig. 15. Burials in Refuse Deposits in the Second Story. At the right (Burial 53) may be seen the perfectly preserved bundle containing the remains of a child. At the left (Burial 54) are mats covering the bones of three others. In the lower left hand corner is the cordage of a feather string blanket overlying the feet of an adult.

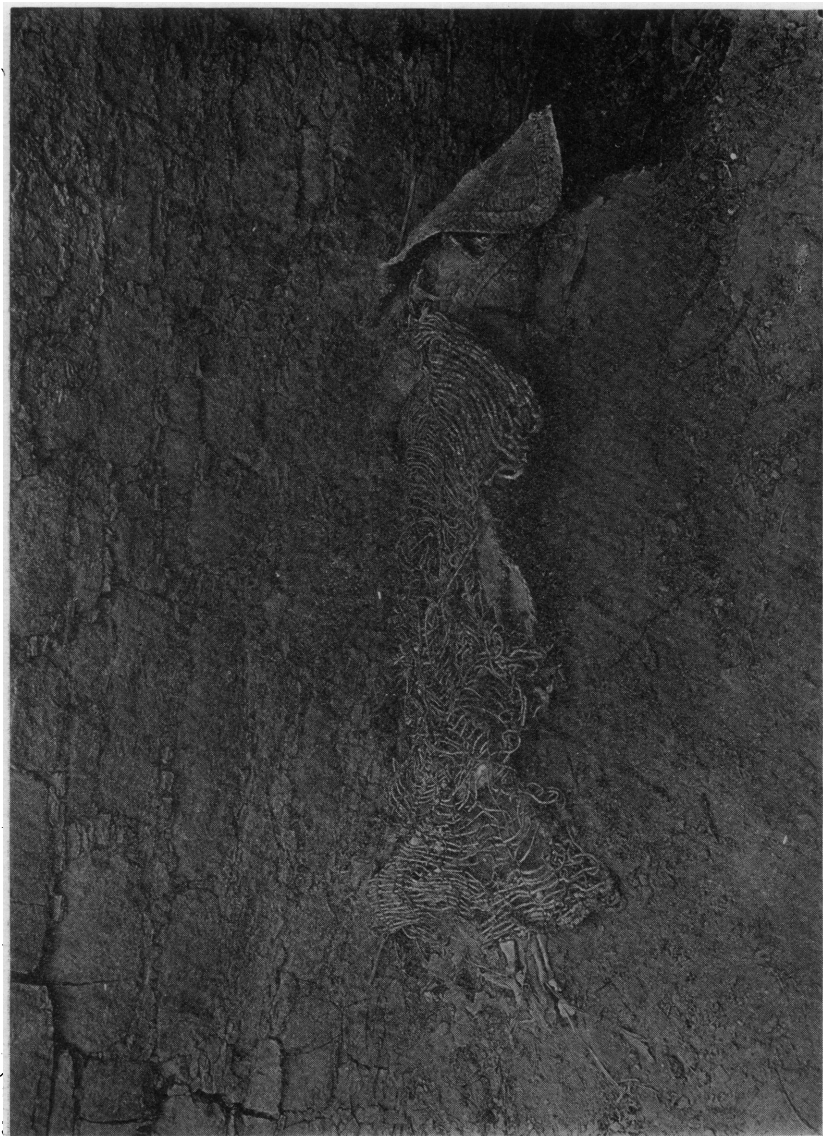


Fig. 16. Burial 55, an Adult wrapped in a Feather String Blanket and Plaited Rush Matting. The body lay on an empaacted mass of turkey droppings and was partially covered with the same material.

*Burial No. 51.* Adult, apparently female, on right side of back with head to east, lying in refuse against the center of the north wall 2 feet above the floor. The legs were flexed with elevated knees touching the wall. The left arm was bent at the elbow with forearm across the abdomen; the right was extended, the hand being under the corresponding thigh.

A very thick, tightly-woven cotton cloth, sewn together from several pieces, enveloped the entire body. Only a portion of this could be saved (Field No. 3973). There had been an outer wrapping of rush matting but no intermediate layer of feather cloth. Covering the trunk, external to the wrappings, was a rectangular object made of closely-laid parallel reeds, with the extremities turned under and sewed to the straight portions of the stems, enclosing a cross stick at each end. This was of the same type as similar objects found over Burials 32 and 48, presumably the bed of a cradleboard.

This burial was 1 foot 6 inches directly beneath Burial No. 49.

*Burial No. 52.* Child, on right side, head to the east. The body was wrapped in a well-preserved rush mat which has not been opened, hence further details are lacking. The bundle was against the center of the north wall 9 inches beneath Burial No. 51, in a shallow excavation made in the layer of dust and adobe clods which constituted the initial fill of the chamber.

In the triangular space bounded by the legs, the trunk, and the wall were two black-on-white bowls (Field Nos. 3975, 3976), the larger one on edge with bottom touching the wall, the smaller upright inside of it.

*Burial No. 53.* Small child, flexed, on right side with head to the east. The bones were enclosed in a perfectly preserved burial bundle which lay parallel and contiguous to the west end of the south wall 2 feet above the floor. Two rush mats are folded to form a rectangular package which is secured at the ends by lashings of yucca string which pass through the several thicknesses; and in the center by two feather-wrapped yucca binding cords. The bundle has not been opened. Beneath it, hidden by the sandy dust on which it lay, were two black-on-white canteens (Field Nos. 3978, 3979) with cord bails intact, and a handsomely plaited yucca pot rest fitting the larger one (Field No. 3980). Presumably these accompanied the burial, although mortuary offerings placed beneath the body have not been previously observed by the writer in the Aztec Ruin or elsewhere. (Fig. 15.)

*Burial No. 54.* Three small children. The burial deposit was in the southeast quarter of the room, in dry refuse 2 feet 4 inches above the floor.

The smallest of the three skeletons lay up on the left side, more or less flexed, with head pointing toward the northwest corner of the room. It was wrapped in a plaited rush mat the edges of which were awkwardly doubled under the body. Back of the head and thorax the mat was torn away. On the portions of the skeleton thus revealed there were no inner wrappings.

The second skeleton lay tightly flexed on the left side, with feet against the parcel containing the first, and head pointing away from it at right angles toward the southwest. A decayed feather cloth blanket enveloped the bones. Inside of it, among the disarticulated ribs, was a small mug of unusual form (Field No. 3988), which, previous to decay, had rested against the breast of the child. The bundle lay upon a large fragment of a rush mat and was covered with another good sized fragment.

Rodents had worked among the bones, carrying away many of the smaller ones and filling the space within and without the feather cloth with cobs, husks, splinters, and similar portable objects from the neighboring refuse.

Upon the mat which covered the second body, back of and 1 foot distant from it were three articles of footgear, one piled on top of the other (Field Nos. 3990, 3991, 3992). They were heavy sock-like objects, which to judge from their frayed portions, may have been worn without sandals. Without doubt they are too large for the child near whose remains they were found; hence, whether they were burial offerings or an unrelated portion of the refuse accumulation, must remain uncertain.

Over the two burials just described was spread a fragmentary rush mat, originally at least 42 by 56 inches, with longer axis northeast to southwest. On one end of this mat, parallel to and resting partly upon the first, and also upon the lower end of the second, was the third skeleton. It lay on the right side with head toward the northwest. The legs were flexed, the arms extended, the right passing beneath the right thigh, the left between the thighs. Wrapped around the skeleton was a considerably damaged feather cloth blanket. Beyond the feet, the edges of the feather cloth were bunched together, as the top of a partly filled sack might be, and bound with a belt-like object made up of ten parallel yucca cords fastened together in a manner not superficially apparent, and encased in a sheath of very thin soft-tanned hide with the edges sewn together down the center of one side.

The free end of the mat beneath the skeleton was brought upward and over it, and as a final covering for the burial heap were two other large fragments of rush matting.



*Burial No. 55.* Young adult, apparently female. The skeleton lay on the right side of the back 2 feet above the floor, with head to south, facing, and adjacent to the mid portion of the east wall. The legs were tightly flexed, the knees extending forward and downward from the trunk at an angle of about 45°. The left arm was extended with hand behind the left hip, while the right was sharply bent with open hand upon the breast.

The cordage of a feather cloth blanket enveloped the entire skeleton. This was folded upward and over, first from left to right, then from right to left. A heavy yucca cord encircled the middle of the bundle, passed thence downward beyond the hips and around a second time. Part of a rush mat extended diagonally beneath the body from the line of the right shoulder to the middle of the unflexed left forearm. At the back the selvage edge was bent upward against the skull and under the corner of the feather cloth which hung down over the left shoulder. In front the somewhat longer protruding portion was brought up to and partially over the skull and was crumpled together in front of the neck. A thong of yucca strips passed over the left cheek and under the bundle, holding the mat in place. (Fig. 16.)

Under the chin and throat, between the feather cloth and the mat, was a wad of cotton cloth, elongated and as large as one's two fists. It was saturated with filth and as hard as a clod, but when cleansed and spread out proved to have dimensions of 20 by 31 inches. The excellent fabric was worn to a rag before being placed with the dead. Evidently it was a part of a sort of sleeveless jacket. The weave is twilled, and there is a striped decoration in the following sequence: dark brown; natural color; red; narrow alternating lines of natural color and red (6 of natural color, 5 of red); red; natural color; brown; etc.

The burial lay upon a solidified mass of turkey dung four inches thick, and in the refuse covering it, turkey droppings were numerous. It would seem that Room 153<sup>2</sup> served as cemetery, refuse repository, and turkey pen all at the same time.

#### REFUSE AT WESTERN EDGE OF ANNEX.

*Burial No. 56.* Aged male lying on right side with head toward the southeast, legs closely flexed, arms partially so, with hands in lap. By the breast were a mug, a dipper bowl and a small corrugated pot (Field Nos. 4136, 4137, 4138). In the mug was a chunk of galena (Field No. 4140). Upon the ribs of the left side, in the angle between sternum and clavicle were four white arrowpoints (Field No. 4140).

This skeleton was only 11 inches below the surface and parts of it were thrown out by a plow in the excavation of an irrigating ditch.

#### SOUTHWEST REFUSE MOUND.

*Burial No. 57.* Infant, about three feet below the surface at undetermined point in southeast quarter of the mound. With it was a large black-on-white bowl (Field No. 4141). The burial was so disturbed by the caving of a bank that further details were not ascertained.

#### SOUTHEAST REFUSE MOUND.

*Burial No. 58.* Adult lying in the extreme peak of the mound immediately beneath the surface. The bones were disturbed and the position of the burial was not determined. This skeleton was found during the excavation of the test pit sunk by N. C. Nelson in 1916.

*Burial No. 59.* Adult, skull missing, on left side extended, head toward northwest, lying 3 feet west of No. 58, 8 inches below the surface.

#### ROOM 147, NORTH WING.

The two burials described below were found by one of the parties which entered the open rooms in the northwest corner of the pueblo in the spring of 1882. The facts here recorded were given by Mr. Sherman Howe who was a member of the party. The scattered bones found in clearing the room were parts of the skeletons not carried away by the early visitors, which in time became covered with dust and hidden from view.

*Burial No. 60.* Adult. This skeleton lay parallel to the north wall in the northeast corner of the room on the surface of a shallow refuse deposit. It was wrapped in a plaited rush mat held in place by a heavy cord passing around the middle of the bundle. South of the body was a large bowl-shaped coiled basket.

*Burial No. 61.* Adult. The skeleton, held together by dried ligaments, sat with elevated knees, shoulders touching the middle of the west wall, and head leaning back against it. There were no indications of clothing or wrappings. The unusual position of this skeleton raises the question whether the individual was put away in such an unaccustomed posture, or simply died where found.

#### ROOM 151, WEST WING.

*Burial No. 62.* Two adults. Adjacent to the north wall of the room, 5 feet from the northwest corner, there had been a crater-shaped pit in the wall débris extending to within 27 inches of the floor. Judging from

the position of bone fragments among the ashes, a layer of inflammable material was placed in the bottom of the pit, the bodies laid upon it, and covered with a quantity of fuel. Sufficient heat was generated by the burning mass entirely to consume the flesh and whatever wrappings there may have been, thoroughly to calcine the bones, and to impart to the surrounding earth and stone a pale brick color. Scattered over the fire area were the fragments of a black-on-white bowl (Field No. 4152), and at the south edge of the pit was a mug (Field No. 4153) and a tubular pottery pipe (Field No. 4154).

*Burial No. 63.* Adult, flexed, on left side with head to the south, lying in a pit in the clean earth which formed the initial fill of the chamber, 5 feet from the west wall, 4 from the north, and 11 inches above the floor. The feet were beneath the south edge of Burial No. 62. The bones, like those of all other skeletons in this room, were mere shells which fell to pieces when moved. No traces of wrappings remained.

*Burial No. 64.* Small child, flexed, on left side with head to the east, lying in a pit in the clean earth adjacent to the north wall,  $7\frac{1}{2}$  feet from the northwest corner, and 6 inches above the floor. There had been a wrapping of rush matting.

*Burial No. 65.* Child, about two-thirds grown, on right side, flexed, with head to the south, lying in a pit in the clean earth 8 feet from the west wall,  $3\frac{1}{2}$  from the north, and 16 inches above the floor. There remained vestiges of feather cloth and rush mat wrappings.

*Burial No. 66.* Small child, flexed, with head to west, lying on back in a pit in the clean earth adjacent to the south wall  $9\frac{1}{2}$  feet from the southwest corner, and 21 inches above the floor. There had been wrappings of feather cloth and rush matting.

*Burial No. 67.* Adolescent, partially flexed, on right side with head to the south, lying in a pit in the clean earth 11 feet from the west wall,  $5\frac{1}{2}$  from the north, and 17 inches above the floor. Considerable brown mould was present among the decayed bones, indicating the former presence of wrappings, but identifiable fragments could not be found.

*Burial No. 68.* Infant, flexed, on right side with head to west, facing the south wall 12 feet from the southwest corner, lying in a pit in the clean earth 21 inches above the floor. There had been a wrapping of rush mats.

*Burial No. 69.* Small child, flexed, on left side with head to the southwest, lying in a pit in the clean earth  $12\frac{1}{2}$  feet from the west wall,  $4\frac{1}{4}$  from the north, and 27 inches above the floor. There had been a wrapping of rush mats. By the face was the impression of a bowl-shaped coiled basket approximately 7 inches in diameter.

*Burial No. 70.* Infant, extended, on back with head to north, lying in pit in the clean earth 13 feet from the west wall, 3 from the north, and 13 inches above the floor. No traces of wrappings could be found.

*Burial No. 71.* Small child, flexed, on right side of back with head to east, lying in a pit against the north wall 16 feet from the northwest corner, and 8 inches above the floor. There had been an inner wrapping of feather cloth and an outer one of rush matting around at least the head and shoulders. Behind the skull was a dipper bowl (Field No. 4155). Inverted over the trunk was the bottom of a large bowl, and beneath it several bird bone tubes (Field No. 4156), presumably beads. It could not be determined whether they were strung when buried, or were laid loose upon the body.

*Burial No. 72.* Adult, aged, apparently male, flexed, on left side with head to south. This skeleton was in loose ashes immediately above the initial fill of clean earth, against the north wall,  $16\frac{1}{2}$  feet from the northwest corner and 4 feet above the floor. There were no indications of wrappings, and it is doubtful if any were originally present.

*Burial No. 73.* Adult as identified by a lower jaw, a shoulder blade and a few ribs. These were immediately beneath the surface, 18 feet from the west wall, 4 from the north, and 7 feet above the floor. Since the slope of the mound was toward the south and all of the lower part had weathered out, the body must have been buried with head to the north. Near the jaw was a small corrugated pot (Field No. 4161).

*Burial No. 74.* Child, flexed, on right side of back with head toward the west, lying in clean earth  $19\frac{1}{2}$  feet from the west wall, adjacent to the north, and  $2\frac{1}{2}$  feet above the floor. There were no traces of wrappings. By the face was a corrugated pot (Field No. 4157).

*Burial No. 75.* Child, flexed, on left side of back with head to north, lying in a pit in the clean earth, with legs against the south wall  $21\frac{1}{2}$  feet from the southwest corner and 9 inches above the floor. There had been a wrapping of rush matting. By the face were fragments composing half of a bowl (Field No. 4159); on the breast a mug (Field No. 4158); and in the neck-breast region 16 bird bone tubes, presumably beads, (Field No. 4160).

*Burial No. 76.* Young adult, tightly flexed, on right side with head to the west. This skeleton was 17 inches directly above Burial No. 75. The lower limbs and trunk were covered with a worked sandstone slab 14 by  $20\frac{1}{2}$  by  $\frac{3}{4}$  inches. There had been no burial wrappings.

*Burial No. 77.* Infant, flexed, on left side with head to the north, lying in a pit in the clean earth 23 feet from the west wall,  $3\frac{1}{2}$  from the

north, and 19 inches above the floor. Decayed rush matting enveloped the bones.

*Burial No. 78.* Small child, flexed, on left side with head to the west. This skeleton lay in earth between layers of wall débris with back against the south wall, 27 feet from the southwest corner and 46 inches above the floor. Decayed rush matting covered the bones.

#### ROOM 159, SOUTH WING.

A rectangular bin cut off from the remainder of the chamber by thin masonry partitions, occupied practically the northwest quarter of Room 159. Burials No. 79 and 80 were in this bin.

*Burial No. 79.* Aged person, apparently female, on right side with head to the west. The skeleton was tightly flexed, both arms and legs being huddled in front of and partly beneath the trunk. It lay with back against the north wall and head in the northwest corner of the bin. Thorax and left shoulder were tilted forward and the skull turned so that it rested face downward. A large bowl (Field No. 4207) was over the skull, and under the bowl, upon the occiput, was a cake of brown mould which previous to decay had been a piece of worked wood, evidently pine, about 4 inches square and  $\frac{3}{8}$  inch thick. South of the large bowl,  $2\frac{1}{2}$  inches distant, was a small one, also inverted (Field No. 4208). In its bottom is a small irregular hole. A fragment from the girdle of a water jar had been placed concave side downward over the opening. The bowl was empty, hence the potsherd was put where found for some other reason than to protect the contents from the earth which otherwise would have sifted in.

The skeleton was thoroughly decayed. Even in the cavity beneath the bowl which covered the head there was no evidence of wrappings. Clean sandy earth covered the remains.

*Burial No. 80.* Young adult, identified by a full set of very slightly worn teeth. The tightly flexed skeleton was on the right side, parallel to the north wall, with head 15 inches from the east wall of the bin. (Fig. 17.) The thorax and left shoulder were tilted forward and the skull was face downward. The pelvis and legs of this skeleton were 10 inches directly above the corresponding parts of the one in Burial No. 79. Inverted over the skull was a large bowl (Field No. 4209). Leaning against the north side of this bowl was a good-sized fragment of another (Field No. 4216), beneath which was a ladle (Field No. 4212). East of the head lay a medium-sized corrugated pot (Field No. 4214), in the mouth of which, serving as a lid, was a smaller one (Field No. 4215). Within the larger

pot was a dipper bowl. Southeast of the corrugated pots was a small bowl (Field No. 4210) in upright position, and in it, also upright, a mug (Field No. 4211) which contained a cylinder of hematite (Field No. 4218). The bottom of a water jar (Field No. 4217), concave side downward, served as a cover for bowl and mug. South of the skull were fragments of a thin, flat, more or less rectangular, cake of partially carbonized foodstuff, probably mush or squash pulp (Field No. 4219). On the bottom of the cake were impressions of corn leaves or husks which must have been the lining of the container in which the cake was moulded.

The bones were utterly decayed. Covering the heap of granular dust which had been the skull was a tangle of cords which retained their form until disturbed, then vanished to dust. Presumably these represented the base of a feather cloth wrapping. The advanced decomposition of the bones can be attributed in part, at least, to the presence of a quantity of vegetable material which had been cast upon the body, covering it, and extending to the south, east, and north walls of the bin. Cornmeal and squash pulp from which the seeds had not been removed constituted the major components of the mass. The larger cooking pot was filled with the same sort of substance. The layer of vegetable decay varied from  $\frac{3}{4}$  to 4 inches in thickness.

The top of the smaller corrugated pot was only 4 inches beneath the level of the last-used court, which extended over the obliterated remains of Room 159, thus giving evidence of very shallow interment.

#### ROOM 43, EAST WING.

*Burial No. 81.* Slender-boned person, probably female, perhaps fully grown, but with skeletal framework not quite mature. Synostosis of the long bones was not complete, and the third molars in both jaws, though formed, had not pierced the processes. The body lay on the right side with head to the west, arms bent, with hands at the base of the throat and legs drawn up so that the femora made an angle of about  $45^\circ$  with the trunk. The grave was a pit essentially rectangular, 4 feet long, 16 inches wide, and 15 inches deep, situated parallel to and about 6 feet distant from the north wall, and extending to within 18 inches of the west side of the room. It was dug into clean sandy earth beneath the primary floor. Decay was so advanced that wrappings, if once present, had completely disappeared.

Beyond the limits of the grave pit, in the line of the longer axis of the body, a large, unusually handsome water jar (Field No. 4228) stood on the floor, contiguous to the west wall of the room. Just north of it

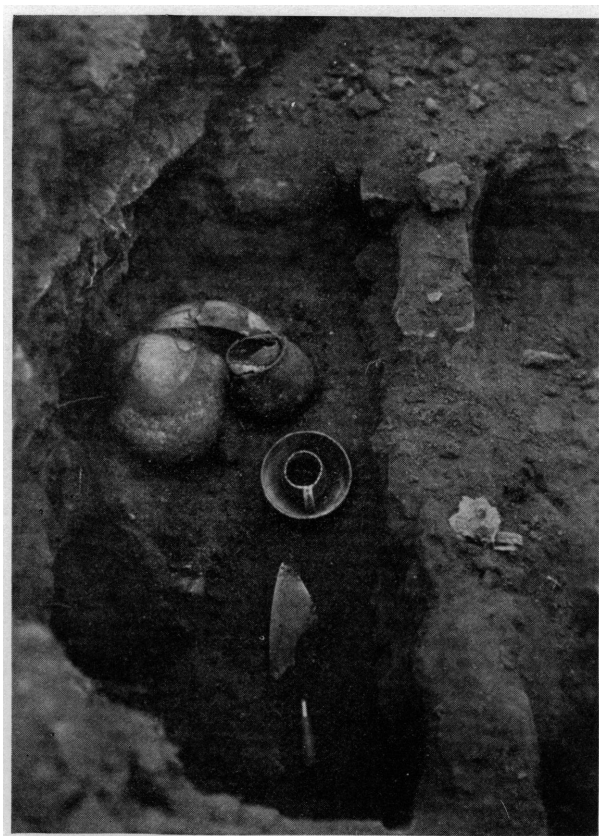


Fig. 17. Burial 80. The Skull in this Burial was beneath the Inverted Bowl at the left. This interment was in a bin in a dismantled room under the southwest corner of the court. A great quantity of cornmeal and squash pulp had been cast in upon the body.

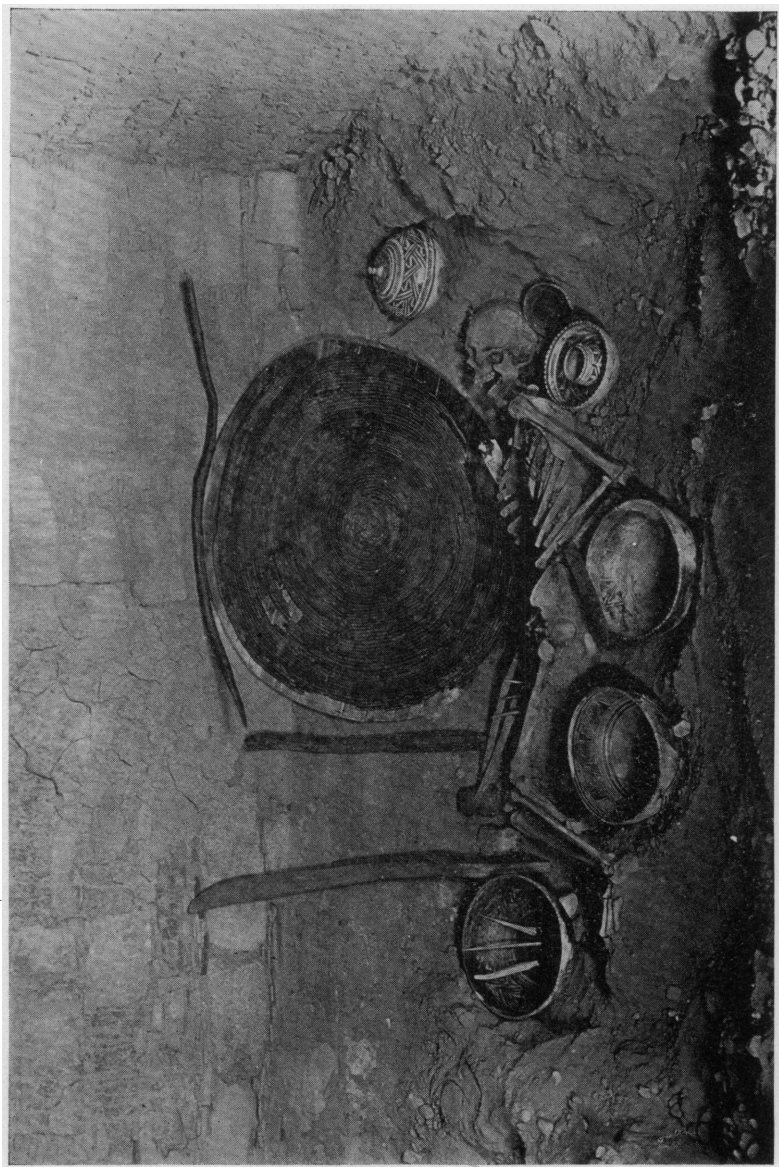


Fig. 18. The "Warrior's Grave," Burial 83. The basketry shield and numerous burial accouterments indicate that the individual occupied a position of unusual importance in the pueblo. Probably this was due in part at least to his great stature approximately 6 feet 2 inches.



was a bowl (Field No. 4226) and in the latter a pitcher (Field No. 4227). Between the bowl and the wall was a thin, rectangular, well polished slab of black slate (Field No. 4229).

#### KIVA S, COURT.

*Burial No. 82.* It is uncertain whether Burial No. 82 was an original interment or not. The skull, that of an adult, was the only part of the skeleton found. It was on the floor directly against the wall at the west side of the kiva. The cranium may have belonged to a skeleton disturbed in some other quarter of the pueblo, of which this part was thrown into the abandoned kiva, along with other refuse. This skull is the first example of oblique deformation exhumed in the Aztec Ruin.

#### ROOM 178, NORTH WING.

*Burial No. 83.* Adult male on right side, two-thirds extended with head toward the east. The right arm was extended with upturned palm beneath the right femur slightly above the knee. The left was bent with hand in front of the left innominatum. Measured from the lower surface of the calcanium to the upper edge of the patella, thence to the greater trochanter of the femur, and thence to the crown of the skull, the distance was 6 feet 1¼ inches. The bones had not been in the least disturbed; hence, this figure represents the height of the individual with fair accuracy. (Fig. 18.)

The grave was a pit sunk in the floor, reaching somewhat nearer to the east wall than to the west. The dimensions were: length, 5 feet 9 inches; width, 2 feet 4 inches; depth, 1 foot 4 inches. The north side revealed a downward continuation of the sandstone wall of the room, while the others showed an upper layer of from 4 to 6 inches of sand, gravel, and sandstone spalls, and beneath clean fine sand.

An inner wrapping of feather cloth had enveloped the entire body and there had been an outer covering of rush matting equally extensive. These fabrics were readily distinguishable, but so rotten that not even portions could be preserved. A shield (Field No. 4766) lay above the wrappings, covering the remains from the middle of the thighs to the forehead. This is an example of coiled basketry technique, slightly oval, 36 inches long by 31 inches wide. The longer axis was parallel to that of the body. One edge was doubled down behind the back at right angles, touching the floor of the pit. The central portion lay nearly flat, while the northward side had settled down beyond the sternal ends of the left ribs, and the margin was tilted up against the stone wall. The center was

slightly convex, like the very shallow crown of a hat. The space between this area and a hard wood handle which had been lashed to the basketry on the reverse side, gave room for the hand when the shield was in use. The peripheral five coils had been coated with pitch and thickly spangled with minute flakes of selenite. The next five were stained a dark red, while the remaining forty-eight were of a greenish blue color.

Back of the skull was a small bowl-shaped coiled basket (Field No. 4787). Adjacent to it, back of the neck and shoulders, was a small bowl (Field No. 4848) containing a mug with handle broken off (Field No. 4749). Behind the pelvis was a large bowl (Field No. 4746). Between hips and heels was another (Field No. 4747), the bottom of which had been worn through, then patched with a disk ground from the side of a corrugated pot and cemented to the inner surface of the bowl with pitch. Between the feet and the north wall of the pit was a third large bowl (Field No. 4745). Broken, scattered over the skull and behind the body was an especially fine globular vase (Field No. 4750) and the cover belonging to it (Field No. 4751). The latter is a pottery disk with a stem which ends in a small knob.

In the angle back of the knees were five bone awls (Field Nos. 4760-64, inclusive), the prong of an antler (Field No. 4759) abraded at the tip as if by flaking, a sandstone rasping implement (Field No. 4757), an incomplete chipped knife blade (Field No. 4755), and several flakes of arrow stone (Field No. 4756). Below the knees two axes leaned against the masonry. From the shape of these, which is intermediate between the proper form for ax and hammer, it would appear that they were intended for use as weapons rather than as tools. One (Field No. 4752) is crudely made from a grayish stone and had been painted red. The other (Field No. 4752) is beautifully fashioned from a piece of hematite or similar iron ore. Both had wooden handles which lay with extremities just above the right hand. The handles were round sticks, probably of skunk bush, in each case wrapped twice around in the groove of the ax. With wooden handle toward the head, a long knife of red quartzite (Field No. 4754) lay in front of the left hand. Its position suggested that it might have been in a belt or girdle. In the thoracic cavity was a spherical ornament of lignite (Field No. 4758). Beneath and at right angles to the right forearm,  $1\frac{1}{4}$  inches from the wrist, was a strand of beads evidently worn as a bracelet (Field No. 4774). These were: 17 white disks; 8 lignite disks; 2 red disks; and 2 oval pieces of turquoise.

Lengthwise over the body, above the shield, were three wooden objects. One (Field No. 4768) tapers from a handle at one end to a

fairly broad blade at the other. It may have been a digging-stick, but one cannot escape the impression that it would have been serviceable if used as a sword. Another (Field No. 4769) is flat and sharpened, blade-like at each end. The third (Field No. 4770) is a limb about  $\frac{3}{4}$  inch in diameter flattened to a blade at the larger end. It is extremely crooked, but when held in the hand seems well fitted to propel a ball or stick along on the ground. In addition there were six other pieces of timber over the body; one a pine ceiling pole about 6 feet long, another an alder limb, and the rest cottonwood branches.

#### ROOM 175, WEST WING.

*Burial No. 84.* Adolescent, flexed, on left side with head to the south. Synostosis of the long bones was incomplete and none of the third molars had erupted. The skeleton lay on the floor with back against the east wall and skull adjacent to the south. This skeleton and the three others in Room 175 were in thoroughly consolidated refuse which had been wet from bottom to top. The bones were badly decayed and no evidence remained of whatever wrappings there may have been.

*Burial No. 85.* Adolescent, flexed, on right side with head against the south wall, lying parallel to and 15 inches west of Burial No. 84.

*Burial No. 86.* Young adult, apparently female, on right side, flexed, with head to the north. This skeleton was at the approximate center of the room 6 feet above the floor and 5 feet beneath the surface of the mound.

*Burial No. 87.* Child, flexed, on right side with head to the south, lying with back against the west wall and skull in the southwest corner. The skeleton was 8 feet 9 inches above the floor and 1 foot below the surface of the mound.

#### ROOM 182, NORTH WING.

*Burial No. 88.* Adult, apparently female, of unusually small stature, less than 4 feet 6 inches. The tightly flexed skeleton lay on the left side, with head to the north, resting on the gravelly floor facing the east wall, and skull 8 inches from the northeast corner. There were vestiges of an inner wrapping of feather cloth and an outer one of rush matting, as well as the impression of cloth on the right knee. If the latter textile originally covered other parts of the body, it had decayed beyond recognition. Above the bones were 20 inches of refuse, principally ashes, cobs, cedar splinters, and bark, then an open space extending to the ceiling of the room.

The eighth, ninth, tenth, and eleventh ribs on the left side had been broken about  $2\frac{1}{2}$  inches from their articulations with the vertebræ. These fractures had completely healed. The left innominatum had also been broken, the pubis having been driven somewhat forward from its normal position. In this case healing was not so thorough, and marked exostoses were present along the edges of the severed bone.

#### ROOM 180, NORTH WING.

Room 180 is filled nearly to the top of the first story with fallen walls and collapsed ceilings. Overlying this débris was a refuse deposit varying from 5 to 7 feet in thickness, in which Burials 89 to 101, inclusive, were found. Subsequent to the interments, the unconsolidated mass in the first story settled considerably, and more in some places than in others. As a result of the shifting of the refuse in which they lay, the skeletons were disarranged and most of the larger bones shattered.

*Burial No. 89.* Aged adult, apparently female. The bones were thin-shelled and very fragile, indicating a condition of advanced senility. The flexed skeleton lay on the right side, with head in the northeast corner, the longer axis of the body corresponding with the northeast-southwest diagonal of the chamber. There had been wrappings of feather cloth and rush matting. Between the breast and the north wall was a bowl (Field No. 4921). A digging-stick (Field No. 4922) lay lengthwise above the remains. This burial was 6 feet above the level of the second story.

*Burial No. 90.* Child, eight to ten years old, flexed, on left side, head in southeast corner 5 feet above the level of the second floor. There had been an inner wrapping of feather cloth and an outer one of rush matting.

*Burial No. 91.* Child, six to seven years old, flexed, on left side, head to southeast, 4 feet from the south wall, 3 feet from the west, and  $3\frac{1}{2}$  feet above the level of the second story. Enveloping the skull were remnants of feather cloth and rush matting, respectively inner and outer wrappings. By the breast was half of a bowl (Field No. 4923) with complete side toward the body.

*Burial No. 92.* Small child, flexed, on left side, head to south,  $1\frac{1}{2}$  feet east of Burial No. 91, at the same level in the refuse. There had been wrappings of feather cloth and rush matting.

*Burial No. 93.* Infant, flexed, on right side, head to east, 6 feet from the south wall,  $2\frac{1}{2}$  feet from the west, and  $2\frac{1}{2}$  feet above the level of the second floor. The bones were encased in a cake of white mould,

revealing the outlines of what had been a neat rectangular bundle with inner wrapping of feather cloth and shroud of rush matting. The bundle was mashed to  $1\frac{1}{2}$  inches in thickness. A digging-stick (Field No. 4924) lay lengthwise of the body 6 inches above it, with handle toward the head.

*Burial No. 94.* Child three to five years old, flexed, on left side with head to south, 4 feet from the south wall, 3 feet from the east, and  $2\frac{1}{2}$  feet above the level of the second floor. There were vestiges of the usual wrappings: feather cloth and matting. By the breast was a crude dipper bowl (Field No. 4925).

*Burial No. 95.* Infant. The larger bones and parts of the skull were scattered along the central portion of the east wall for a distance of four feet, 2 feet above the level of the second floor.

*Burial No. 96.* Child four to six years old, flexed, on right side, head to the south, against east wall 2 feet from the southeast corner, and 3 feet above the level of the second floor. There had been wrappings of feather cloth and rush matting.

*Burial No. 97.* Adult, aged male, toothless except for the canines in both jaws. Apparently the body had been placed on the right side, flexed with back against the south wall and head in the southeast corner. The crushed skull and some of the bones of the thorax were found in sandy earth at the bottom of the refuse deposit near the corner, 1 foot below the level of the second floor. Other bones were encountered thence westward and downward to the western side of the first story door in the south wall, where there was a leg 5 feet below the level where the skull lay. There were no traces of wrappings, but these may originally have been present as this body was in sand in which medium decay progresses more rapidly than in ashy refuse.

*Burial No. 98.* Infant, crushed and scattered, 5 feet from the south wall,  $3\frac{1}{2}$  feet from the west, at the level of the second floor. Judging from the position of skull and thorax, the body had lain on the right side with head to the northwest. No indications of wrappings remained.

*Burial No. 99.* Small child. This burial was represented by bones broken and scattered over an area of 2 by 3 feet immediately northward of, and slightly beneath Burial No. 98.

*Burial No. 100.* Adult, aged, apparently female. The skeleton was on the left side with head to the north, back to the west wall, the flexed legs being parallel and adjacent to the south wall 1 foot above the level of the second floor. In the settling of the débris the head had been torn away from the trunk, it and the pottery vessels being found  $1\frac{1}{2}$  feet north of and 12 to 15 inches below the trunk. Back of and northward of the

skull was a mug (Field No. 4928) and in it two thin disks of green stone perforated for suspension (Field Nos. 4929, 4930); a small imperforate disk (Field No. 4931); a trapezoidal slab (Field No. 4932) of the same material; and a wooden disk (Field No. 4933) with a small piece of turquoise set in gum at the center of the obverse side. By the face there was a small bowl (Field No. 4934) covered with the vertical half of a large, very crude, corrugated pot.

The cordage of a feather cloth blanket enclosed all parts of the body but the knees, and there was an external wrapping of unusually coarse rush matting. A wad of cotton cloth covered the inner surface of the left knee. It had been fastened by means of a strip of yucca leaf knotted through one edge to some part of the blanket, but the fragmentary condition of the latter made it impossible to determine exactly at what point the attachment had been made. It would appear that the cloth was a pad intentionally placed upon the knee. When freed of an incrustation of filth, the wad proved to be composed of three rags. Two (Field Nos. 4937, 4938) are of plain light weight, loosely woven cloth. The other (Field No. 4939) consists of a piece like the two preceding, to which is sewed a rectangle of heavy very tightly woven fabric ornamented with parallel stripes in the following sequence: natural color (tawny white), pale red, natural color, black-brown, natural color, pale red, etc. The stripes are  $\frac{1}{8}$  inch wide. A feather-wrapped cord and a strip of yucca leaf tied end to end formed a binding cord which encircled the central portion of the burial bundle.

A heavy stake had been driven through the lower abdomen, passing in front of the right innominatum, out through the obturator foramen in the left, and thence into the earth beneath. The stake (Field No. 4940) is a splinter from a large pine ceiling log. It was trimmed and the point bluntly sharpened by an instrument which cut with remarkable smoothness for a stone implement. An unbiased observer undoubtedly would declare that the long true bevels where the rough edges were hewn off are the work of a metal blade, yet the position of the stake beneath 6 to 7 feet of ancient refuse would seem to preclude such a possibility. The head of the stake is frayed and cupped at the center by the blows of the rounded instrument with which it was driven—presumably the poll of a stone ax. There are no blood stains on the wood, hence it is probable that the individual was not impaled. (Fig. 22.)

Cornhusks and bean vines were the immediate covering of the remains.

*Burial No. 101.* Adult, aged. The disturbed and shattered skeleton was 1 foot 4 inches beneath Burial No. 100. Evidently it had lain on the

right side, flexed, with head to the north and face toward the west wall. Being in sandy earth beneath the refuse, decay was much more advanced than in the case of Burial No. 100. Surrounding the skull there remained some cordage from feather cloth, and external to it were the rotten strips of a rush mat.

#### ROOM 181, NORTH WING.

*Burial No. 102.* Child. The skeleton was disarticulated and the bones scattered over the surface of a refuse deposit which, in the northwest corner, reached to 7 feet above the original level of the fallen second floor, and sloped thence downward to a height of 3 feet above the latter in the southeast corner. Details could not be ascertained.

#### SOUTHEAST REFUSE MOUND.

*Burial No. 103.* Adult, on left side with head toward the southwest. Portions of the skull and thorax were the only bones found. These were 8 inches beneath the surface, approximately 5 feet above virgin earth, and 2 feet northwest of Burial No. 59.

Back of the skull were a small black-on-white bowl (Field No. 5046) and one-fourth of a black-on-red one (Field No. 5065). There was an excellent pitcher (Field No. 5066) 8 inches in front of the face.

*Burial No. 104.* Adult, tightly flexed, on right side with head toward the southeast. The grave was a trench barely wide enough to admit the body, cut into the refuse down to a layer composed principally of deer bones, coarse charcoal, and fire-broken cobblestones. The badly disintegrated skeleton was  $4\frac{1}{2}$  feet below the surface, 1 to  $1\frac{1}{2}$  feet above natural soil, and about 10 feet east of Burial No. 103.

A black-on-white bowl (Field No. 5067) in upright position, rested on the left side of the breast and the bones of the left forearm. In it was a small corrugated pot (Field No. 5068).

*Burial No. 105.* Adult, young, to judge by the little-worn teeth, flexed, on the right side with head toward the southeast 8 inches from the feet of Burial No. 104. This skeleton occupied what appeared to be the north end of the trench described in connection with the preceding burial. If the pits had been dug separately, the wall of relatively hard material, which in that case would have formed a partition between them, had been obliterated by the burrowing animals that had operated extensively in the vicinity.

In the angle of trunk and thighs there lay inverted a large bowl (Field No. 5069) and headward of it was a smaller one right side up (Field

No. 5070). The first trace of this grave was found just beneath the surface and 6 feet northwest of the pit, where fragments of the skull and other bones and a fragment of the second bowl were removed from an animal's burrow which extended thence diagonally downward to the skeleton.

#### ROOM 183, WEST WING.

*Burial No. 106.* Adult, apparently male, in the latter thirties. The grave was a pit 18 inches deep beneath a secondary floor in the northwest corner of the room. The body lay on the left side with head to the south. The skull was tilted to the right sufficiently to form an angle of 90° with the cervical vertebræ. The legs were tightly flexed with knees spread apart, the right mashed down against the spine, the left about 6 inches west of the trunk. The feet were beside the left innominatum, the right one crossed over the instep of the left. The right arm was slightly bent, the bones of the forearm passing beneath the right femur with hand in the pelvic cavity. The left arm was extended beneath the body.

A sandstone slab, 8 by 9½ inches, covered the lower ribs of the left side and the corresponding knee. An incomplete worn-out mano lay above the ribs of the right side, a corner extending beneath the mid portion of the humerus, and the one diagonally opposite resting upon the distal third of the shaft of the femur. A red quartzite knife blade 7¾ inches long (Field No. 5082) was on edge against the outer surface of the upper half of the right humerus. Brown powder resulting from the decay of the wooden handle continued to the elbow. Partly upon the left shoulder and beneath the upthrust chin was a mug (Field No. 5081).

Sufficient moisture had reached all of the burials in Room 183 to destroy every vestige of whatever wrappings there may originally have been. The adobe floor was continuous above the pits and as thoroughly blackened by smoke and filth there as elsewhere, proving that the chamber was occupied after the interments were made.

*Burial No. 107.* Child of about three years. The grave was a pit 14 inches deep beneath the secondary floor in the northeast corner. The skeleton lay breast downward with head against the east wall and face turned slightly to the right. When decay freed the articulations, the pelvis settled down between the legs, which were flexed, leaving the proximal extremities of the femora and the distal ends of the lower leg bones extending vertically upward from the plane of the trunk. The arms were somewhat bent, the hands being beneath the abdomen. At the right of the skull was a mug (Field No. 5083) covered with a thin oval cobblestone. (Fig. 21.)



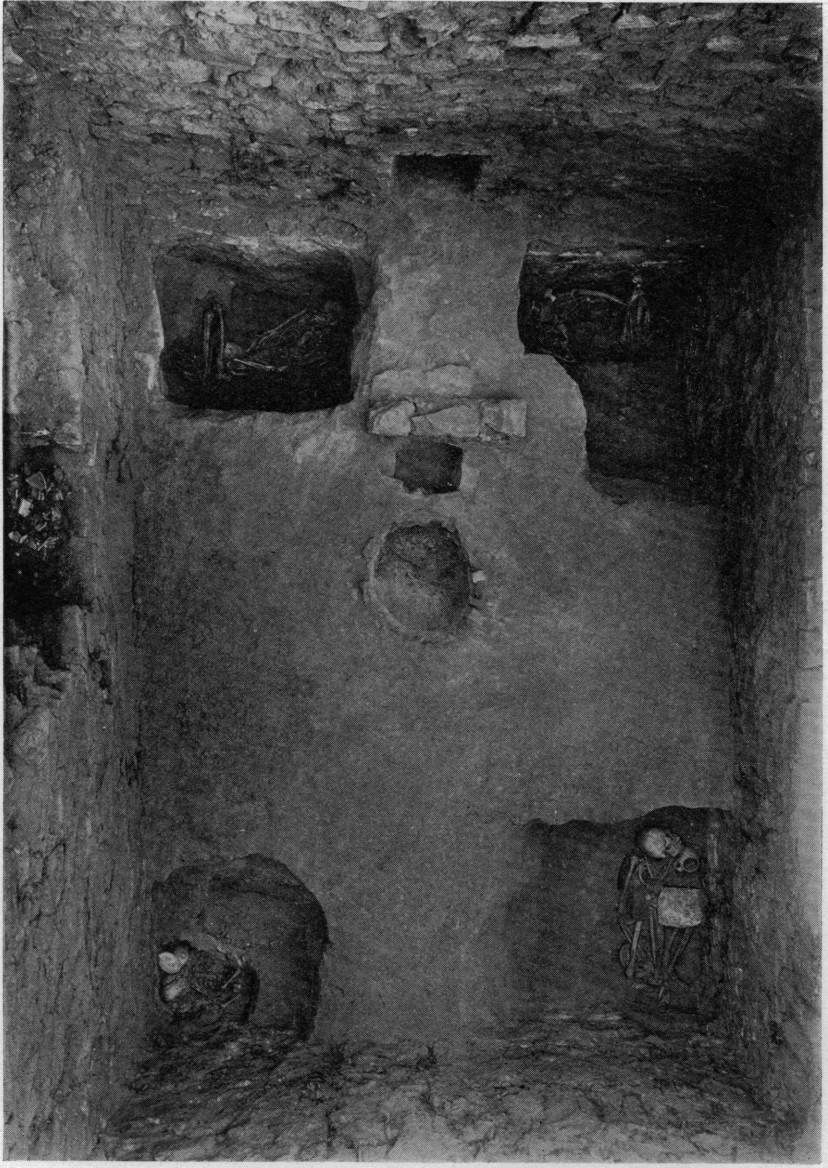


Fig. 19. Room 183 showing Burials 106, 107, 108, 109. The chamber had been remodeled to possess the essential features of a kiva, and was used long after the interments were made, as proved by the blackened hard-tramped floor above the pits.



Fig. 20. Burial 106 in a Pit dug into the Floor of Room 183. This was a common method of interment.



Fig. 21. An Unusual Burial Position, Burial 107. The flexed body of the child was placed in the grave pit face downward.

*Burial No. 108.* Adult; male about twenty-five years old, on right side, head south of west, lying diagonally across a pit extending 3 feet beneath the secondary floor in the southeast corner. The bones of thighs and lower legs were parallel, forming an angle of approximately  $80^{\circ}$  with the trunk. The arms were extended, the right hand being under the

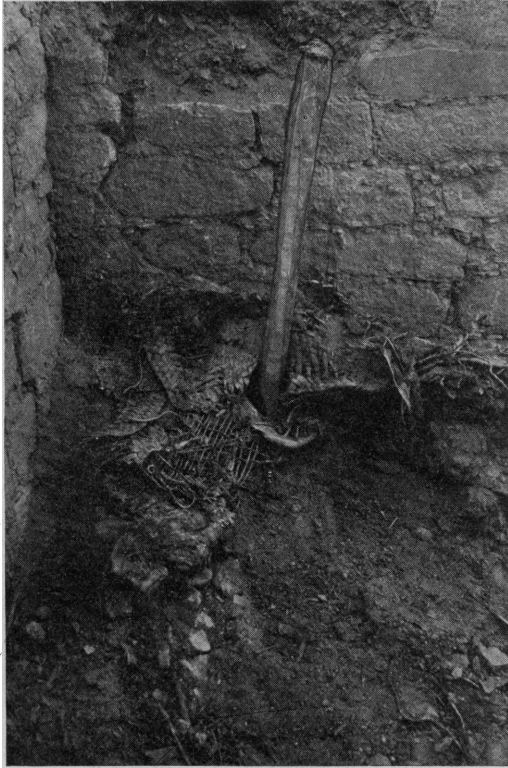


Fig. 22. A Heavy Stake of Pine hewn from a Ceiling Timber had been driven completely through the Pelvis of this Skeleton, Burial 100.

corresponding hip, the left in the hollow of the pelvis. There was a corrugated pot (Field No. 5085) between the knees and the masonry of the east wall. This skeleton impressed one as being that of a comparatively tall individual. Measurements *in situ* indicated a height of between 5 feet 9 and 5 feet 11 inches.

*Burial No. 109.* Adult; female of about thirty years, lying on back with head to the east in a pit beneath the secondary floor in the south-

west corner, 30 inches deep, 31 inches long, and 17 inches wide. The knees were elevated at right angles to the trunk; the feet were rotated inward and crowded between the buttocks and the west wall. The arms slanted outward from the trunk, and were bent at the elbows, with hands, left on top of right, spread over the breast at the base of the throat. The pit was too short for the body, as a result of which the neck was forced abruptly upward, and the skull tilted forward with the occiput against the west wall. There were no accompanying objects.

#### ROOM 184, WEST WING.

*Burial No. 110.* Infant, flexed, on left side, head to the north, lying in earthy débris 2 feet below the surface of the mound with back against the center of the west wall.

*Burial No. 111.* Child of three to five years, the bones disturbed and position undetermined, found 18 inches east of Burial No. 110 at the same level in the débris.

#### COBBLESTONE ANNEX WEST OF MAIN PUEBLO. ROOM A.8.

*Burial No. 112.* Infant, flexed, on left side, head to the east. The decayed bones were in a pit 23 inches beneath the floor in the northeast corner.

*Burial No. 113.* Small child, flexed, on left side, head to south, lying in a pit 16 inches below the floor in the southwest corner. The adobe floor was continuous above the graves, showing that the room continued to be used subsequent to the interments. This burial and all others found in the annex were near enough to the surface to have been long and repeatedly wet; hence, all wrappings had vanished and the bones themselves were little harder than the surrounding earth.

#### ROOM A.11.

*Burial No. 114.* Small child, on back with head to the south. The legs were tightly flexed, the knees being mashed down upon the trunk. The arms were extended along the sides. The body was in a pit 18 inches beneath the floor in the northeast corner. At the left and back of the skull was a pitcher (Field No. 5116) and partly beneath the right parietal lay a dipper bowl (Field No. 5117).

#### REFUSE AT SOUTH SIDE OF ANNEX.

*Burial No. 115.* Child. A fragment of the skull was the only bone that had not decayed beyond recognition. The grave was an irregular

excavation extending 20 inches beneath the surface at a point 30 feet distant at right angles from the middle of the west wall of Room 155, West Wing. In it was found an assortment of beads (Field No. 5118) composed of the following; 5 large cylinders of lignite, 4 large disks of the same material, 6 large disks of yellowish stone, 11 small white disks, 1 small red disk, 2 olivella shells, and 1 pelecypod shell.

#### KIVA A1. ANNEX.

*Burial No. 116.* Small child, bones disturbed, position undetermined, lying 17 inches below the surface in the clean earth above the kiva, approximately 5 feet from the west wall.

*Burial No. 117.* Infant, flexed, on right side, head north of east, found  $4\frac{1}{4}$  feet south of Burial No. 116.

*Burial No. 118.* Adult, aged, tightly flexed, on left side, head to southeast, lying with back against the outer face of the wall at the southwest side of the kiva. The bones were 14 inches below the surface and the knees had been removed during the construction of a modern irrigating ditch.

#### ROOM 185, WEST WING.

*Burial No. 119.* Adult; aged female, on right side, head to the east. The legs were tightly flexed, the knees touching the breast. The right arm was nearly straight, the upturned palm being under the corresponding hip. The left was sharply bent with hand spread over the left side of the face. There had been wrappings of feather cloth and rush matting. A portion of a large corrugated pot, concave side downward, covered the skull. The skeleton lay with back against the south wall and head 4 inches from the east wall 2 feet 9 inches above the bottom of the refuse fill. It was in dusty refuse containing well-preserved corncobs and squash rinds. Nevertheless the bones were so fragile that they fell to pieces when moved.

*Burial No. 120.* Child of three to five years, flexed, on right side with head to the east. The skeleton lay with face to the north wall, and skull  $2\frac{1}{2}$  feet from the northeast corner, 1 foot 9 inches from the bottom of the refuse fill. There had been wrappings of feather cloth and rush matting.

*Burial No. 121.* Child of about two years, flexed, on left side with head to the west. The skeleton lay with face to the north wall 5 feet from its eastern end, and  $3\frac{1}{2}$  feet above the initial fill of clean earth, practically at the surface of the refuse. There were remains of feather cloth and rush matting.

*Burial No. 122.* Child two to three years old, flexed, on left side, head to the east, with back against the north wall immediately west of Burial No. 121, and at the same level. Wrappings of feather cloth and rush matting were distinguishable.

*Burial No. 123.* Child about 18 months old, flexed, on right side with head to the north. The body faced the west wall  $4\frac{1}{2}$  feet from its northern end, and  $2\frac{1}{2}$  feet above the bottom of the refuse deposit. A large feather cloth blanket had been folded in such a manner that there were at least four thicknesses above and below the bones. Against the small of the back rested a bowl (Field No. 5119) and headward of it was a mug (Field No. 5120). A rectangular portion of a coarse rush mat was spread over the bones and the vessels. Lying horizontally against the wall, 6 inches above the mat, was a long wooden implement (Field No. 5121) flattened to a blade at each end. (Fig. 23.)

*Burial No. 124.* Adult about thirty years old, flexed, lying on back with head to the north. The arms and legs were mashed down on top of the trunk. The skeleton was in compact earthy refuse 6 inches above the offset in the north half of the T-shaped door in the east wall. All wrappings, if such there were, had disappeared.

*Burial No. 125.* Small child. Pelvis and flexed legs were the only parts found. From the position of these it appeared that the skeleton had lain on the right side, with head to the east, 10 inches from the bottom of the refuse fill, 1 foot 6 inches from the south wall, 5 feet from its eastern end.

*Burial No. 126.* Aged female without a tooth in either jaw, in clean sandy earth 8 inches above the original floor. A large bowl (Field No. 5122) was partly on edge against the east wall, 1 foot from its northern end. The body lay breast downward, with skull turned somewhat to the right and resting in the bowl, the rim of which passed under the base of the throat. The left arm was slightly bent, the hand extending under the pelvis. The right formed an angle of  $90^\circ$ , the forearm lying beneath the abdomen. The tightly folded legs pointed to the left and footward from the trunk at an angle of about  $135^\circ$ , the knees touching the north wall. Although the bones were badly disintegrated, on the left side of the back there were distinguishable bits of heavy closely-woven cloth, and strands of brown mould from shoulders to hips represented a wrapping of feather cloth. At the left of the large bowl containing the skull was three-fourths of one of medium size (Field No. 5123), and at the right one-fourth of an old blackened bowl (Field No. 5124) in which was one-half of a small one (Field No. 5125). Four inches above the bones, a piece of worked

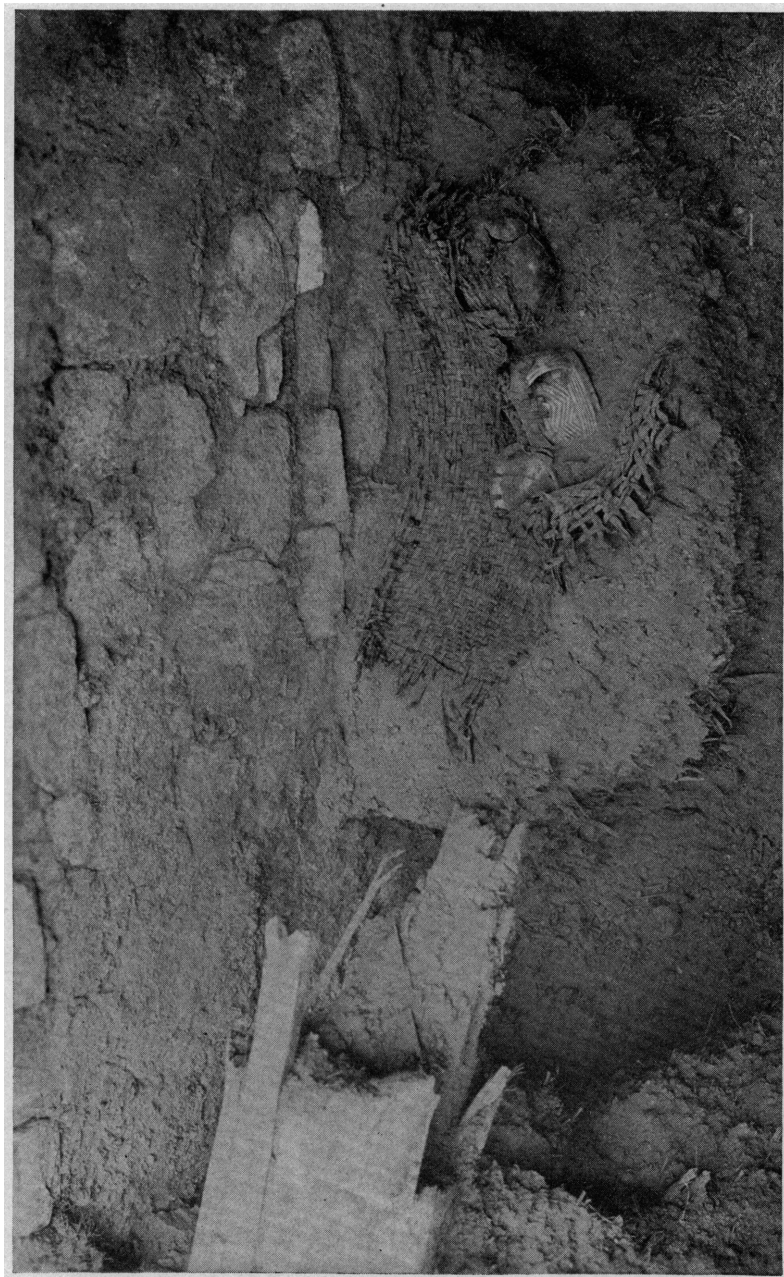


Fig. 23. Burial 123 in a Refuse Deposit against the West Wall of Room 185. The large pine log at the left is a fallen ceiling support.





Fig. 24. Two Adults buried in a Pit dug into a Secondary Floor with Heads in Opposite Directions. The pelvis of No. 127 (at the left) was immediately below that of No. 126. The skull of the latter was the only one found resting in a bowl.



wood roughly 20 by 2 inches by  $\frac{1}{2}$  inch thick lay from the right shoulder diagonally across the trunk.

*Burial No. 127.* Old person, on right side with head to the west. The legs were flexed to the same degree as those of the skeleton in Burial No. 126, these and the pelvis being immediately on top of, but in reverse direction to the corresponding parts of that body. The trunk was inclined forward, the skull resting on the right side of the face, about 5 inches lower than the pelvis. The left arm was almost straight behind the body; the right had been removed by burrowing animals. Eight inches west of the skull a corrugated pot (Field No. 5127) lay on its side with mouth toward the north wall, and just beyond it was a mug (Field No. 5128) in the same position. In front of, parallel to, and slightly above the skeleton was a decayed board with dimensions of 25 by  $4\frac{1}{2}$  by  $\frac{3}{4}$  inches.

Quantities of larvæ cases of blow flies were in the face cavities of the skulls from this and the preceding burial, indicating that the bodies were shallowly and carelessly covered with earth. The material surrounding them was free from refuse and mixed with numerous sandstone building blocks.

*Burial No. 128.* Small child. This skeleton had lain in earthy refuse slightly above the second floor near the center of the room. The bones were widely scattered, and the position of the burial could not be determined.

Above the refuse deposit in the first story rat nests and accumulations were approximately 1 foot deep along the north, south, and west walls. This rubbish was a veritable bone heap, containing portions of the skeletons of numerous children and infants, as well as ribs and vertebræ of adults. How many of the bones pertained to burials in Room 185 is uncertain, but those from larger bodies must have been brought from other chambers since no skeletons were found lacking the portions observed in the rat nests.

#### ANNEX.

*Burial No. 129.* Adult, on right side with head toward the west. The heels were drawn up to the buttocks and the thighs formed an angle of approximately  $80^\circ$  with the trunk. The right arm was extended beneath the body, the left being slightly bent with hand between the femora. The skeleton lay in clean sandy earth 1 foot 4 inches from the surface about 25 feet from the west wall of the pueblo and 12 feet north of Room A.25.

*Burial No. 130.* Child, tightly flexed, on back with head toward the east. The body had been wrapped first in feather cloth, then in rush matting. The grave was a rectangular pit with rounded corners dug 1½ feet into clean earth beneath the floor of Room A.22. The north edge of it was 1 foot 4 inches from the north wall and the east end 7 inches from the east wall.

*Burial No. 131.* Infant, flexed, on left side with head toward the southeast. The bones lay in a refuse layer 2½ feet south of the southeast corner of Room A.22. There had been wrappings of feather cloth and rush matting. One-third of a dipper bowl lay over the face concave side downward.

*Burial No. 132.* Small child, flexed, on right side with head toward the northeast. The grave was an irregular pit 1 foot 3 inches deep beneath the floor of and partly under the north wall of a large refuse-filled pit 10 feet south of the southwest corner of Room A.17.<sup>1</sup> The distance from the surface was 9 feet 3 inches. There had been wrappings of feather cloth and rush matting.

*Burial No. 133.* Adult, on right side with head toward the southeast. The heels were drawn up against the buttocks, the thighs forming an angle of 125° with the trunk. Both arms were somewhat bent with hands covering the symphysis pubis. There had been an inner wrapping of feather cloth and an outer one of rush matting. A crude dipper bowl, (Field No. 5131) was behind and partly beneath the right shoulder. Touching the inner surface of the sternal end of the fourth left rib was a small conical pottery pipe (Field No. 5133) and in the right side of the thoracic cavity was found an olivella shell bead (Field No. 5134). Presumably these objects had been upon the breast. In front of the pelvis, 19 inches above the body there was a large bowl (Field No. 5132) inverted over a flat cobblestone. This bowl is of miserable workmanship, but nevertheless it seems to have been cherished. A crack in the rim was mended with the usual perforations and lashings, and in addition a hole in the bottom was sealed with a fragment of a corrugated pot stuck to the inner surface of the vessel with gum. At the same level as the bowl, back of, and parallel to the body, was a decayed digging stick with blade toward the head. The grave was a pit 1 foot 6 inches deep in natural earth beneath the floor of Kiva A.4, adjacent to the eastern arc of the wall. The floor above it was dark-stained, showing use after the interment was made.

<sup>1</sup>It is probable that this pit is a kiva. Later work has revealed others in the annex which were merely dug into the earth and have no masonry walls whatever. The one in question was only partially excavated.

*Burial No. 134.* Infant, flexed, head toward the west, side undeterminable. The bones were 1 foot from the surface against the outer side of the west end of the north wall of Room A.27.

#### KIVA A.5.

*Burial No. 135.* Adult male, flexed, on left side with head toward the west. The trunk was inclined forward so that the skull lay face downward. The legs were tightly folded, forming an angle of  $45^{\circ}$  with the trunk. The right arm was slightly bent with hand under the right femur. The left humerus was parallel to the side, the forearm crossing at a right angle beneath the body with hand under the right elbow. The skeleton was in coarse ash refuse 2 feet above the floor at the center of the north side of the kiva.

*Burial No. 136.* Infant, flexed, with head toward the southwest. The body was in refuse 3 feet above the floor and tilted sharply downward toward the head. It lay against the north wall behind and partly under a cedar log. Evidently the remains had been carelessly placed upon the sloping surface of the refuse fill. It was not evident upon which side they had lain.

*Burial No. 137.* Adult, flexed, on right side with head toward the north. The badly decayed bones were in refuse at the center of the kiva  $3\frac{1}{2}$  feet above the floor.

*Burial No. 138.* Adolescent with head toward the east. The skeleton lay breast downward, with hands together at the base of the throat. The right leg was doubled under the trunk, the knee being turned to the left. The left leg was extended to the knee, the foot having been jammed down upon the corresponding buttock. The body was in refuse 5 feet above the floor, the left knee touching the western arc of the wall.

#### KIVA A.7.

*Burial No. 139.* Middle-aged adult, on right side with head to the north. The legs were flexed and slightly above the trunk. The hands were between the femora. There had been wrappings of feather cloth and rush matting. Under the right hip was a mug (Field No. 5176) with a drawing of the flute player upon the handle. The remains lay with back against the eastern arc of the kiva wall in refuse 1 foot 8 inches above the floor.

*Burial No. 140.* Infant. The disturbed bones were against the east wall in refuse 4 feet above the floor 1 foot north of the skull of No. 139.

*Burial No. 141.* Young adult, flexed, on left side with head toward the east. The decayed bones were in refuse at the south center of the kiva, 5½ feet above the floor.

*Burial No. 142.* Child of 10 to 12 years, flexed, on right side with head to the west. The disturbed bones were in refuse against the north wall 5 feet above the floor.

*Burial No. 143.* Small child, flexed, on right side with head toward the northeast. The badly decayed bones were in relatively clean earth 1 foot from the surface and 1½ feet west of burial No. 131. Back of the skull was a small corrugated pot, thoroughly shattered, and 6 inches from the breast was a mug (Field No. 5177) covered with a sherd from the bottom of a bowl, turned concave side downward.

#### KIVA D, EAST WING.

A charred adult, apparently a male, lay against the wall at the east side of Kiva D, and in the northwest quadrant were the bodies of four children similarly carbonized. The floor was clean of refuse of human origin, and there was no wind-blown sand or rain-washed plaster beneath the slag-like remains. Pottery vessels and other objects were scattered about on the floor and on the banquettes as if left where convenience dictated by those accustomed to frequent the chamber. These conditions, together with the fact that kivas were seldom used for burial unless abandoned and serving as refuse pits, occasioned the belief that the five persons were trapped and burned alive when fire destroyed the roof. Consequently, they were not listed among the burials.

A glance at the catalogue of objects taken from the chamber, reveals, however, the following entries: 29.0-6786, fragment of charred body of child with cotton cloth adhering; 29.0-6787, fragment of charred body of child fused to cloth overlaid by a plaited mat of rushes; 29.0-6788, fragment of charred body of child retaining three kinds of wrappings, 1 cloth, 2 sewn mat, 3 plaited mat. Cloth would be an expected article of vestiture, but no sort of garment has ever been found fashioned from either sewn or plaited matting, and the coarse unwieldy nature of these fabrics would almost preclude their use for such a purpose. On the contrary, rush mats were the customary ultimate wrappings of the dead. Therefore it seems reasonably certain that the individuals in question were prepared for sepulture according to the prevailing custom.

It is by no means difficult to reconstruct in the imagination circumstances under which those dying in the kiva would not have been removed from it; or, on the other hand, to account for the bringing of the bodies

from another quarter of the pueblo to this chamber as a temporary or final resting place.

When pottery was placed with the dead, it is almost invariably found near the remains. Since the vessels and other objects in Kiva D were scattered all over the room, it is not justifiable to account for their presence by assuming that they were burial offerings.

#### KIVA G, EAST WING.

Storm-deposited sandy earth covered the floor of Kiva G to a depth of from 6 inches at the center to 3 feet against the walls. From the south side to the center this material was separated from the fallen ceiling by a stratum of charcoal and black earth from  $\frac{1}{2}$  to 3 inches in thickness which yielded a great many broken beads and fragmentary ornaments of abalone and other kinds of shell. At the time of excavation no observations were made which suggested that the numerous articles of adornment in any way pertained to a burial, but during a subsequent examination of the charcoal there were found a number of granules of a porous iridescent substance identical with the more bulky pieces of charred flesh from Kiva D. Therefore it may be surmised that there was a burial in Kiva G. If so it must have been that of an infant or small child, as there was no evidence of sufficient heat to have incinerated the bones of an adult beyond recognition.

### AN EXAMPLE OF PREHISTORIC PUEBLO SURGERY.

Various appliances have been exhumed from prehistoric ruins in the Southwest which are supposed to have been splints used by the aborigines in the treatment of different types of fracture. However, while rational probability, strengthened by the presence of these splint-like objects to which hypothetical functions have been assigned, justifies the belief that the ancient Pueblo made attempts at surgery, specific instances which prove indubitably that such was the case are sufficiently rare to merit individual mention.

In consequence we have reserved the presentation of Burial No. 27 for special treatment under this head. On the floor of Room 139 were the remains of a female, 17 to 20 years of age. The body lay facing and adjacent to the east wall, with head about 18 inches distant from the north wall. There was an average of between one and two inches of dust on the floor under the bones. Between the skull and the north wall were three black-on-white bowls (29.0-9634-9636) and back of the body, half way across the room was a mug (29.0-9637). Three layers of wrappings had constituted both shroud and casket. The first wrapping was an excellently woven cotton cloth; the second, a mantle of feather cloth, and the third, a mat of plaited rushes. The flesh and most of the wrappings had disintegrated to a brown mould. A few dried ligaments remained, notably in the region of the feet, which, though skeletonized by decay, were held in perfect position by their tendinous bands of gristly integument.

The skeleton lies upon its back, inclined somewhat toward the left. The knees point to the left and downward from the trunk at an angle of forty-five degrees, the heels having been drawn up close to the buttocks. The left arm is extended along the trunk, with hand palm upward, the phalanges extending beneath the left femur. The right arm is crossed over the abdomen. (Fig. 26.)

In the maxilla the third molars were just piercing the alveolar process; in the mandible they are not visible. Fusion of shaft and epiphyses in the long bones is in no case complete.

There is evidence of injury to the left hip. The superior ramus of the pubis is broken free from the innominatum, the line of separation running through the obturator groove and the extreme edge of the acetabulum. The lower anterior boundary of the obturator foramen, that is, the fused ischial ramus and the inferior ramus of the pubis is broken away as a unit. There was necessarily involved a tearing apart of the symphysis

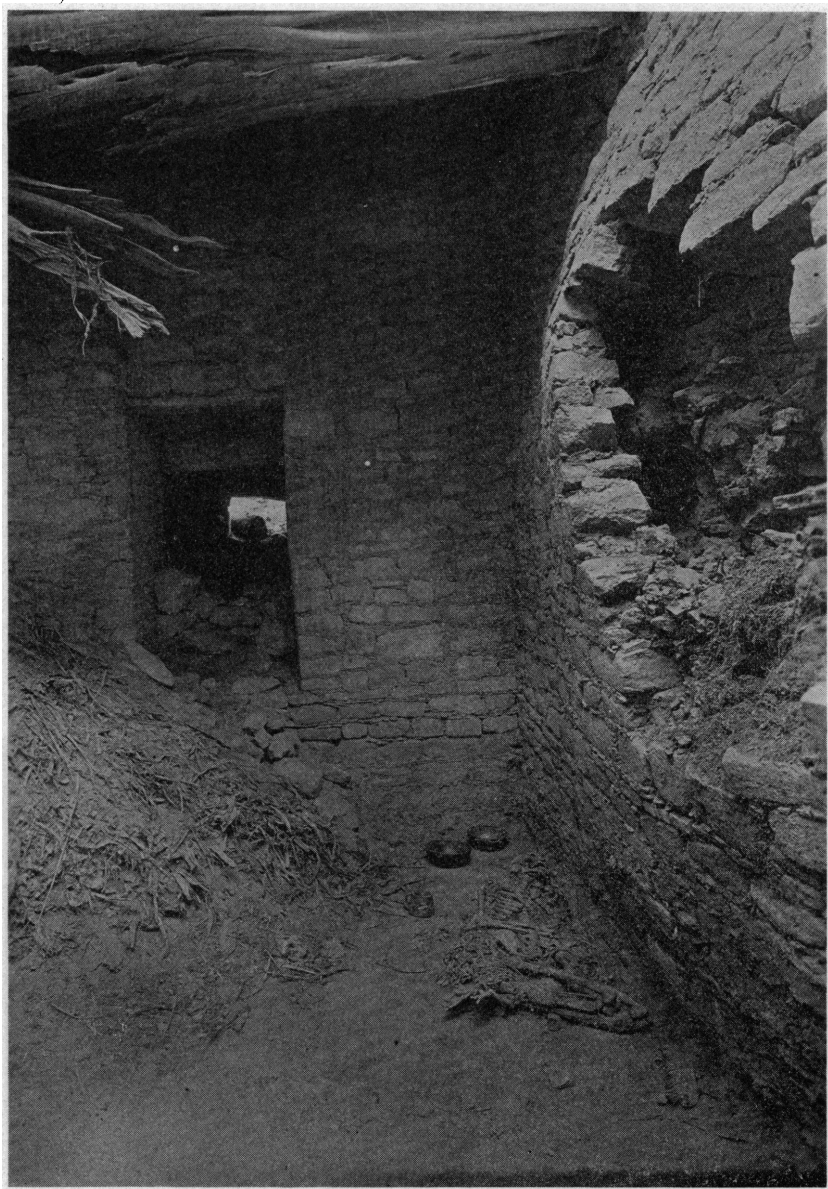


Fig. 25. Burial 27. Because of the splinted arm, Burial 27 was one of the most important found in the Aztec Ruin. The flexed skeleton lay beneath a shallow deposit of vegetable refuse on the floor of a room of which the ceiling, although its supports were broken, had not collapsed.



Fig. 26. The Splinted Arm Skeleton. The hand of the splinted arm may be seen extending beneath the left femur.

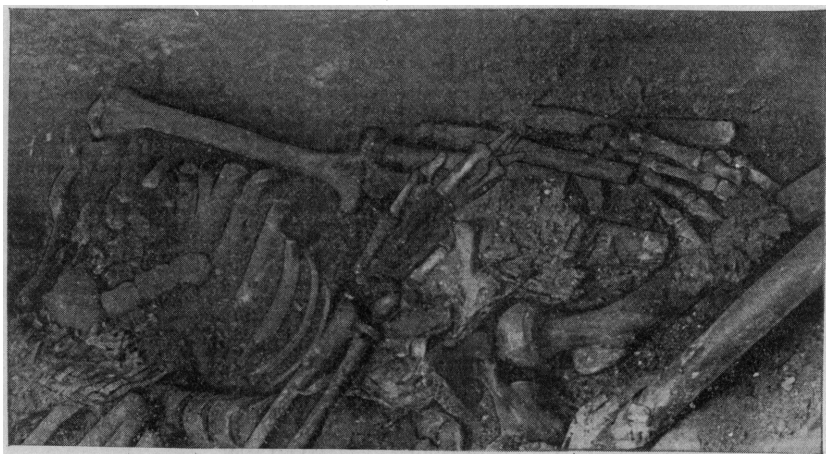


Fig. 27. The Splinted Arm. In this enlargement three of the wooden splints surrounding the fractured forearm are visible.



pubis, but the ligaments having decayed, no direct evidence of this remains. The left side of the sacrum is fractured longitudinally in the line of the anterior sacral foramina. The lateral portion was driven backward from and slightly behind the main body of the bone. A transverse break crossed the body of the fourth sacral vertebra, and the lower portion of this vertebra, together with the fifth is tipped forward and upward. There appears also to have been a slight anterior dislocation of the left femur, but this may have resulted from settling of the body as decay progressed.

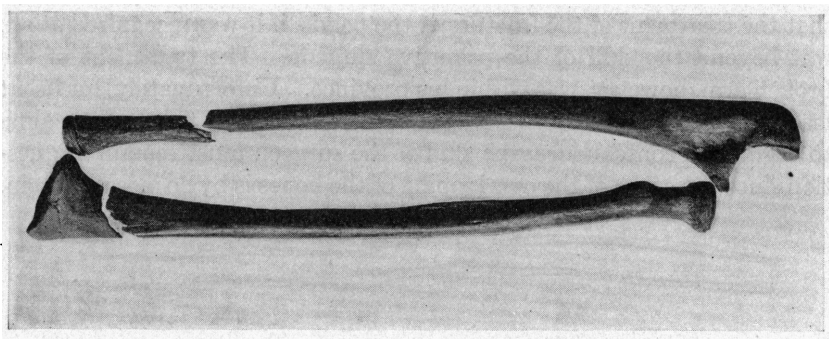


Fig. 28. Fractured Bones.

As part of the injury which crushed the pelvic girdle may be recorded the fracture of the left forearm. The radius is broken almost at right angles to the shaft  $\frac{1}{8}$  inch from the wrist. The shaft of the ulna is broken obliquely from front to back  $2\frac{1}{2}$  inches from the distal extremity. There is marked posterior displacement, the carpals and freed extremities of ulna and radius lying behind the shafts of these bones. The overlapping is approximately 2 inches, which is sufficient to bring the end of the shaft of the radius in contact with the proximal extremities of the metacarpals. The thumb is folded inward, and lies between the first and second fingers.

At least six splints surrounded the broken arm. The top two of these were removed to give a better view of the region beneath before photographing (Fig. 27). After the burial arrived at the museum, the splints were carefully removed and found to be six in number. All were intact save one, Fig. 29. They range in length from 17.6 to 12.3 cm. Their relative lengths are indicated in the figure. One face is rounded, seemingly the natural surface of the small trunk from which they were cut,

but of special interest are the marginal grooves observed in Fig. 30. These occur on two of the splints, while two others are marked, each with a single median groove. The remaining pair are not grooved. It should be noted, however, that one of the splints is not complete and that three of them have been gnawed by rodents, all of which, with their decayed condition, renders all such determinations somewhat uncertain. As the splints lay they extended from the distal extremities of the metacarpals to within 3 inches of the elbow. All bindings which had held them in place were decayed beyond recognition.

From the condition of this skeleton, the conclusion may be drawn that the treatment of the fracture of the pelvis, if it was recognized at all, was beyond the skill of the primitive surgeon. The treatment of the broken arm, however, was within his province. Unfortunately, for us, at least, death resulted before sufficient time had elapsed to permit healing to begin. In consequence, the skill of the surgeon must remain in question since the cause of the overlapping of the bones is by no means certain.

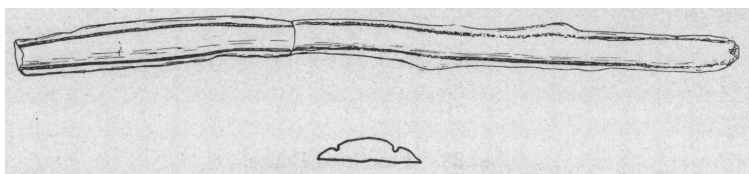


Fig. 29. Cross-Section and Longitudinal Drawing of one of the Splints. This splint was neatly worked, flat on one side, convex on the other, and the margins grooved.

In an ordinary fracture of ulna and radius, the tension of the muscles would not retract the extremities a full two inches. But in a fracture resulting from a fall from a considerable height where the force of impact was received by the palm of the open hand so that the shafts of the bones might be driven out through the flesh, such extreme displacement would not be unexpected. If the accident was of this character, and the bones were left in their present position, they are eloquent of a crude and bungling technique.

There is equal probability that the overlapping took place after death. The body reclined more or less upon the left side when laid away, and in the course of disintegration of the soft parts much of the trunk settled so far to the left that a distance of four to five inches separates the ends of the ribs which articulated with the sternum. As this settling was in progress, there may easily have been a downward thrust upon the bones

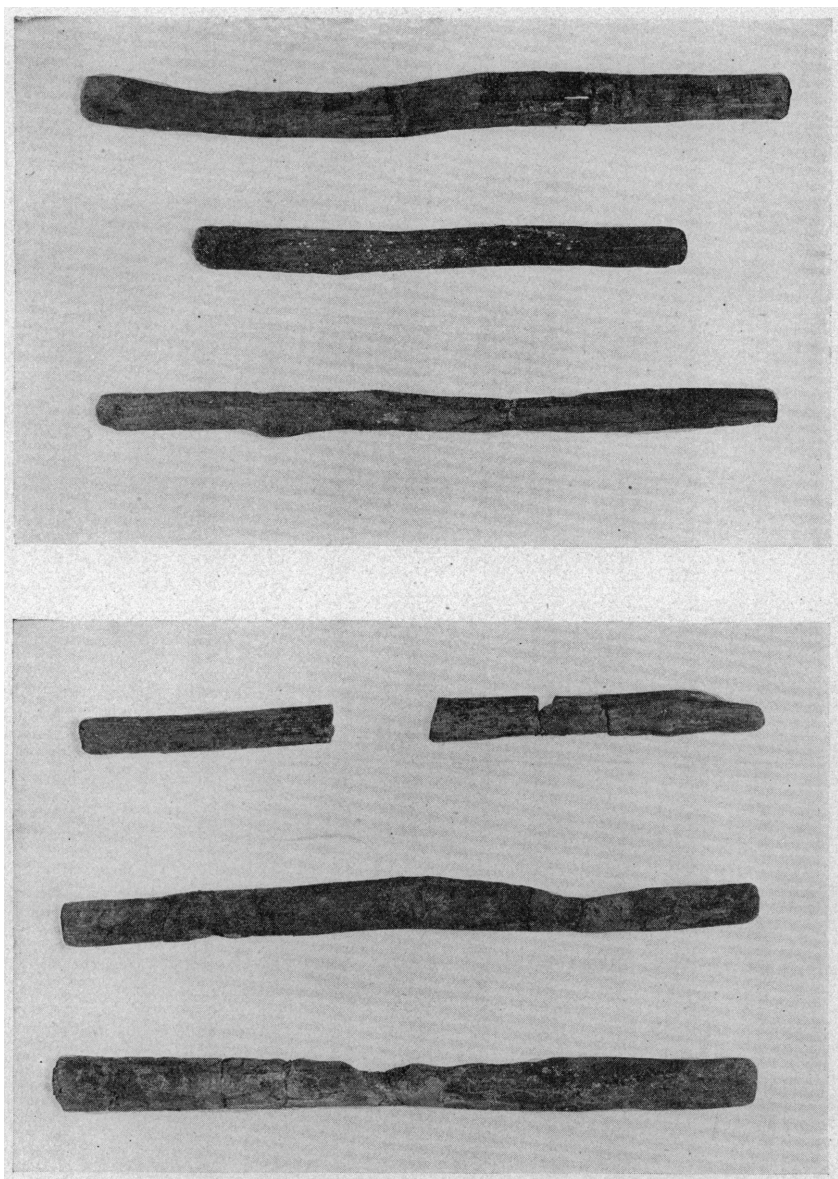


Fig. 30. The Wooden Splints. The top splint is 17.6 cm. long.



of the arm which forced them past their extremities, since the hand was weighted down by the pressure of the thigh.

Desirable as it would be to know definitely whether or not there was an attempt to place the ends of the bones in apposition in order that an estimate might be made of the skill of the surgeon, uncertainty in regard to this point does not detract from the major fact established; namely, that in the mind of the Pueblo practitioner there had arisen the concept of the use of splints in the treatment of fracture, which basic concept is fundamental to so important a part of the technique of the most modern surgeons.

### GENERAL SUMMARY.

A condensed summary of the data presented in the preceding pages is given in the accompanying table. The last column of the table demands a word of explanation. In Part 2 of this volume it was stated that the Aztec Ruin witnessed two periods of occupation without setting forth the evidence from which this conclusion, here reiterated, was drawn. Stratigraphy reveals that the great house was erected and first inhabited by a branch of the Pueblo possessing a culture identical with that which flourished in the Chaco canyon, as typified by Pueblo Bonito. The reoccupation, however, involved the transplantation of another variant of Pueblo culture of which the cliff-dwelling period of the Mesa Verde stands as the type example. Herein, then, we are dealing with two time series of interments, one negligibly, the other plentifully, represented.

Of a total of 186 bodies exhumed to date 149 are positively, and 12 tentatively identified as remains of Mesa Verde inhabitants, and it is probable that most if not all of the seventeen uncertain cases would have fallen in this series had identification been possible. Be that as it may, the 149 burials offer sufficient grounds for generalization concerning burial customs of the Mesa Verde period insofar as the Aztec Ruin is concerned.

Sepulture outside the pueblo was rare, only four instances having come to light, notwithstanding the rigorous search which has been made. Inhumation beneath floors was not uncommon, approximately one skeleton out of eight having been found thus situated. In such cases the floors were resurfaced over the pits, and the chambers continued to be used for residential purposes. The majority of the dead were laid away in abandoned rooms. Some, for instance those in Room 151, were actually interred in pits dug into the initial fill, which in this case was of clean earth. A greater proportion, however, were placed upon whatever surface the room in question presented, whether floor, drift sand, fallen masonry, or village refuse. If the room continued to be, or was sub-

sequently, used as a dumping place, the remains were covered by human agencies; if not, they were entrusted to gradual interment by the elements. A good many rooms contained but one body, yet several, for instance, Rooms 153<sup>2</sup>, 180 and 185, had been used repeatedly for burial, skeletons being distributed from bottom to top of the refuse deposits.

Apparently any unused room, kivas included, irrespective of location, was considered a suitable repository for the dead. The first story has yielded three times as many skeletons as the second. This proportion is not necessarily an expression of intentional selection. The first story is more extensive than the second, and naturally when there was an opportunity for choice of a place of abode, the dark, poorly ventilated lower rooms would have been the first to be vacated and converted into refuse pits. In second story rooms, where the presence of refuse gives positive proof of abandonment while neighboring chambers were occupied, burials are as numerous in proportion to area as in any part of the first story.

Skeletons are far more plentiful in the western side of the ruin than they were elsewhere, four rooms having yielded as many as the entire eastern half of the pueblo. Judging from the small part of the west wing which has been excavated, Mesa Verde inhabitation of this quarter was more concentrated and of longer duration than that of the eastern wing, which fact may account for the greater number of dead.

Only one instance of indubitably intentional cremation has been observed—Burial No. 62—and the writer is yet to be convinced that burning of the dead was a prevalent custom at any time or at any place in the upper San Juan country.

In regard to position of burial, three bodies and a possible fourth were fully extended, all of the rest, where posture was determinable, being more or less flexed. Thus flexing was an all but universal practice. The right side held preference over the left in the approximate ratio of nine to seven. The proportion of those found upon the back is about one to sixteen, and of those lying breast downward, one to forty-five. The head was placed toward the east more commonly than toward the other principal directions which were favored in the following order of diminishing frequency; north, west, and south. It is improbable that the orientation of house burials has any particular significance. A body was usually placed parallel to a wall. The slope of the surface in a given room, and the position of the doorways seem to have been the principal determinants of where the body should lie and to an almost equal degree of its orientation. Even when burials were in pits beneath floors, where

choice was unrestricted, no consistent uniformity is observable. For instance, in Room 183 where there was a grave in each corner, two skeletons lay with head to the east, one to the south, and one slightly south of west. Consequently, in the table no allowance is made for the fact that while the main axis of the pueblo lies northeast by southwest, for convenience the rooms are spoken of as if in definite alignment with the cardinal points.

In only sixty-six cases could the nature of wrappings be satisfactorily determined. However, it is the experience of the writer that wherever conditions are such that there is the slightest possibility for preservation of perishable substances, vestiges or impressions of wrappings will be found. Hence, in a given instance a lack of them may be attributed to decay rather than to their original absence. Three fabrics constituted the most elaborate burial vestiture: cloth, usually if not always of cotton, a feather cloth blanket, and a mat of plaited rushes. These three textiles, in one or more of which practically every body was enclosed, occur in different combinations as indicated by the appropriate column of the table. It may be said that the frequency of their use was in reverse proportion to their preciousness and scarcity, cloth being most commonly omitted, and matting most invariably present. In a single instance the rush mat was supplanted by an outer covering like those found in many graves in the Mesa Verde cliff-houses—a mat of willow stems, one side of which had been flattened.

Pottery vessels were the standard mortuary offerings, having been found with at least seventy-seven bodies of the Mesa Verde series, which number would have been swelled by a minimum of ten had Burial No. 29 been spared for systematic observation. Bone and stone objects occurred each in twenty-five cases. Beads and ornaments were with thirty-two bodies. The frequency of basketry and other classes of perishable objects is given elsewhere. In regard to these, the figures do not express originally existing proportions. Hide and other animal substances were eaten, and cloth cut to pieces and dragged away by the rats which infested the ruin. To this destructive agency may be added fire and decay which have obliterated the bulk of all objects less resistant than stone, pottery, and bone.

There is but one positive example of ceremonial breaking of pottery vessels, one of the six dishes from Burial No. 83 having been shattered and the fragments scattered. The group burials in the east wing were accompanied by a variety and number of offerings sufficient to have comprised the wealth of a good-sized community. In marked contrast are

the burials in the west wing, where body after body is exhumed with no accompaniments whatever. Together with the relative barrenness of the refuse deposits in which they lie, this condition inclines one to the belief that toward the close of the occupation of the pueblo, its inhabitants were in greatly reduced circumstances.

Turning to the burial customs of the Chaco period, the existing information concerning them is so disappointingly meager that it affords a satisfactory basis for none but negative generalizations. Of the five Chaco burials from the Aztec Ruin concerning which there can be no doubt or question, one was in a pit beneath a floor, one was in refuse within the building, and the other three were taken from the southeast refuse mound.

In his extensive explorations in Pueblo Bonito, Mr. Pepper found perhaps a score of skeletons, and to the best of the writer's knowledge the recent house excavations by Mr. Judd in the same ruin and by Dr. Hewett in Pueblo Chetrokettle have been even less productive of human remains.

There is seldom any difficulty attached to the discovery of the cemeteries pertaining to the small ruins dating from generalized black-on-white, or what I regard as early Chaco time, no matter in what part of the upper San Juan region these are investigated. A few minutes' work in an undisturbed refuse mound is usually sufficient to reveal human bones, and if the adjacent buildings were long occupied, the skeletons are often very numerous. Knowledge of this fact provided the first avenue of approach to the search for the graves from the great houses.

In 1893 the writer's father cut trenches through the refuse heaps in front of Pueblo Bonito. During the following years Mr. Pepper and the Wetherills did more extensive work in these enormous accumulations, and pot hunters ran drifts into every large refuse mound between Pueblo Pintada and the mouth of the Escarvada Wash. Then, Mr. Nelson in 1916, and Mr. Judd in 1921 sectioned unmolested areas of the Bonito heaps in the interests of stratigraphy, and in the latter year Dr. Hewett demolished a considerable portion of the voluminous refuse deposit at the eastern end of Pueblo Chetrokettle. Both refuse mounds at the Aztec Ruin have been thoroughly tested for burials, and failing there the search has been carried to the fields surrounding the pueblo. As far as the finding of the dead is concerned, the results of all these activities have been negative with the following two exceptions. John Wetherill observed the opening of a few graves in one of the mounds near Pueblo Alto on the mesa north of Pueblo Bonito, from one of which was taken a hunch-backed human effigy, and, as previously stated, three positive and



## BURIALS AND THEIR CONTENTS

[illegible]



two probable Chaco burials have been found in the southeast refuse mound at the Aztec Ruin.

In this connection, Mr. Pepper's statement<sup>1</sup> that "An extensive cemetery has been found west of and near Pueblo Pintada, the easternmost pueblo of this group," is confusing. There can be no objection to the actual letter of the statement, but for its significance I am confident Mr. Pepper relied upon informants who did not correctly interpret what they had seen. Lying in a line roughly from north to south westward of Pueblo Pintada there are many small ruins. Unless it be since 1916, there have been no excavations worth mentioning in actual proximity to the large pueblo, but the cemeteries adjoining the small houses had been thoroughly rifled long previous to that time. These cemeteries have no more definite connection with Pueblo Pintada than have those on the opposite side of the canyon with Pueblo Bonito, the proper relationship of which Mr. Pepper clearly recognized.

As a concluding statement it may be said that the builders of the great houses of the Chaco period buried practically never in refuse heaps, rarely within their buildings, and that the discovery of their customary method of disposing of the dead remains a problem for future solution.

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<sup>1</sup>This series, vol. 27, 367.



**THE AZTEC RUIN ANNEX.**

**By EARL H. MORRIS**



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## THE ANNEX.

After the ruin had been cleared of brush there was visible beyond the western end of the main pueblo a considerable area much lower than the mound covering the sandstone building, but from 1½ to 6 feet higher than the cultivated land south and west of it. The surface was an orderless succession of hummocks and depressions, the former thickly strewn with cobblestones, the whole presenting an appearance characteristic of most of the ruins in the Animas Valley. On the assumption that the use of cobblestones for wall material indicated a phase of Pueblo masonry earlier than that characterized by massive walls of faced sandstone, it was supposed that this cobblestone house was in existence previous to the erection of the great pueblo. Excavations proved the reverse to be true. The rooms with flimsy cobblestone walls were without exception shallow, some practically weathered away. They all rested upon artificial deposits of considerable depth and varied composition. In order to differentiate this portion from the great house, it will be called The Annex. The rooms in the superficial series occurred in detached groups constituting unconnected buildings and will be described as such.

### BUILDING 1.

Building 1 was composed of Rooms A.16 and A.17, situated end to end, with longer axis east and west. The east wall of Room A.16 was parallel to and 4 feet 7 inches distant from the west wall of the sandstone ruin. The dimensions were: Room A.16, north side 8 feet, south 8 feet 1½ inches, east 7 feet 2½ inches, west 7 feet 4 inches; Room A.17, north side 7 feet, south 7 feet 7 inches, east 7 feet 6 inches, west 6 feet 11 inches. The walls were entirely of cobblestones, varying somewhat from an average thickness of 9 inches. The west wall of Room A.17 was 10 inches high, the east wall of Room A.16, 3 feet. The latter had been protected by the débris from the massive wall to the eastward and retained its exterior finish. The cobbles were entirely hidden by adobe plaster, very smoothly applied, with true, slightly rounded corners. The interior of Room A.16 had been refinished at least twice. The first coat of plaster was adobe, the second white, the third a pale red. Room A.17 was plastered with adobe only. The floors were smooth and stained nearly black by use. They were 1 foot above the last-used yard level at the southwest corner of the main pueblo. Beneath them was a layer of from 6 to 19 inches of fine gravel. In Room A.17 was a re-worked yellow blade or *tcamahia* (Field No. 5142) and a half dozen potsherds.

## BUILDING 2.

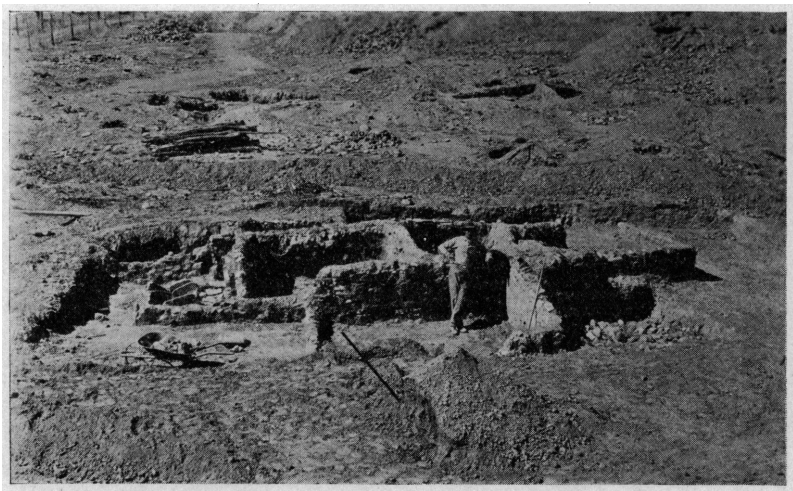
Building 2 was situated westward of Building 1, its eastern wall being 63½ feet from the sandstone building. This structure was composed of six ordinary rooms, a pit room, and an outside bin (Fig. 1). As indicated by the map,<sup>1</sup> although the two eastern members did not exactly conform to the alignment of the others, the rooms were in two tiers with the longer axis in a general east and west direction. The walls were mostly of cobblestones, with here and there a re-used sandstone; including an occasional block of the black-green variety which originally had been utilized to produce ornamental bands in the west wall of the great pueblo. In thickness the walls varied from 7 inches to 1 foot, the outer ones being heavier than the partitions.

The dimensions of Room A.3 were: north and south, 5 feet 11 inches; north side, 7 feet 11 inches; south side, 8 feet 6 inches. The average depth was 1 foot 4 inches, the floor being at the same elevation as the last yard level at the southwest corner of the main ruin. Both floor and walls had been finished in natural earth color and showed little stain from use. In the center of the room was a jug-shaped pit 1 foot 8 inches deep, 2 feet in diameter at the bottom, and 1 foot 6 inches at the top.

The dimensions of Room A.4 were: north and south, approximately 6 feet; east and west, 11 feet. The floor level was the same as that of Room A.3. Owing to the downward slope of the mound the floor came to the surface at the south side, and the line of the wall was difficult to trace. The floor and adobe plaster were black with smoke and filth. There was an oval fireplace 10 inches from the east wall and 1 foot from the north, with longer axis northwest by southeast. It was 1 foot 10 inches long, 1 foot 2 inches wide, and 8 inches deep. Thin pieces of sandstone had been set into the earth to form its boundaries, the tops rising three inches above the floor. Scattered about the fireplace were a bone awl (Field No. 5143), two bird bone tubes (Field Nos. 5144, 5145), six axes (Field Nos. 5146-5151) one of them of hematite, a portion of a *teamahia* (Field No. 5152), a mano with notched edges (Field No. 5153), a polished sandstone slab (Field No. 5154), a few potsherds, and in the southeast corner, a mano, parts of three others, and a broken ax.

Beneath the western two-thirds of Room A.4 was a pit room 7 by 6 feet and 4½ feet deep. It was merely an excavation with smooth, practically vertical walls and rounded corners. The bottom was covered with a homogeneous layer of vegetable decay 3 to 5 inches thick, light brown in color and as light as flour. It was not apparent what the material had been previous to disintegration. The remainder of the pit

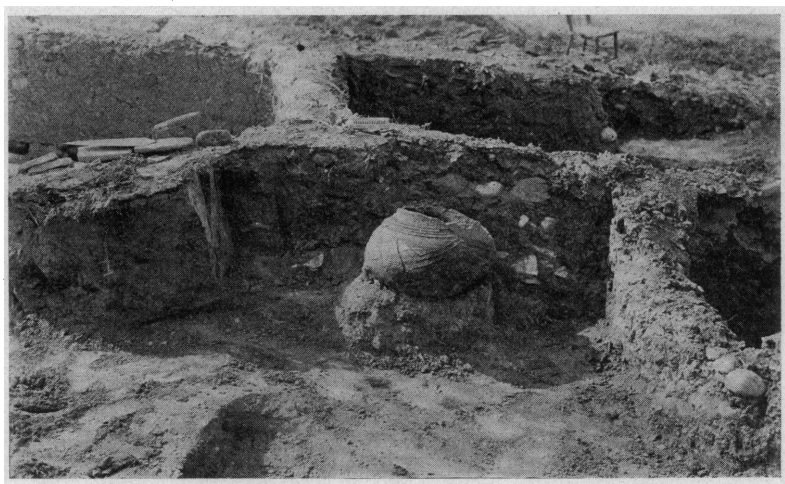
<sup>1</sup> See this volume, part 3.



**Fig. 1.** Building 2, Annex, viewed from the South.



**Fig. 2.** Building 2, Annex, showing Metate Bins in Room A.15, seen from the West.



**Fig. 3.** Corrugated Pot against North Wall of Room A.14.



**Fig. 4.** Room A.1, Annex, seen from the Southeast.

was filled with ashy refuse containing a few black-on-white and many corrugated potsherds. Presumably the floor of Room A.4 had been laid over the pit, but this point could not be determined with certainty.

The dimensions of Room A.5 were: east and west 5 feet 9 inches; east end, 7 feet 5 inches; west end, 6 feet 5 inches. The floor was 1 foot 6 inches lower than that of Room A.3 making the depth of the room 2 feet 10 inches. Upon the smooth, relatively clean floor were a thin well-worked sandstone slab (Field No. 5156), a block of soft, coarse sandstone (Field No. 5157) which would have been serviceable as a scouring tool, two manos, and three fairly good axes (Field Nos. 5158, 5159, 5160).

Room A.13 was 6 feet 7 inches in width, 8 feet 8 inches long on the north side, and 10 feet 5 inches on the south. The depth on the north side was 3 feet 8 inches, and on the south, 1 foot 8 inches, the floor being 10 inches below that of Room A.5. Both floor and walls had been tinted pale red over the primary coat of adobe. There was a circular fire hole 1 foot 7 inches in diameter and 9 inches deep at the center of the room.

Room A.15 was 6 feet 7 inches wide at the east end; 5 feet of the south wall and 8 feet of the north remained, but the balance of these and the entire west wall were destroyed beyond recognition. The floors of this room and A.14 were at the same level. The walls had been tinted red. Against the center of the eastern wall was a masonry pilaster 2 feet long and 8 inches wide.

Three grinding bins were set into the floor in a row extending from the south wall to within 1 foot 3 inches of the north (Fig. 2). They faced west and there was a space in which the millers had knelt 2 feet 3 inches wide between them and the east wall. The northern bin was 2 feet 7 inches long, 1 foot 8 inches wide, and 1 foot 2 inches deep, 8 inches of it being beneath the floor. The metate was set sloping downward and away from the miller. The bin wall north of it was a metate on edge with grinding surface inward, the corresponding stone on the south side being a single slab. The grist basin extended 4 inches below the lip of the metate. Its northern boundary was also a metate on edge, the south was a slab, and the western side two flat pieces of sandstone. Small irregular slabs formed the bottom. The cracks between them were filled with adobe, smoothed down flush with the stones, and the corners were rounded with the same material, imparting to the receptacle the shape of a bowl. In fact, the curves between the corners of the metate and the north and south walls respectively, were lined each with a segment from the rim of a large bowl.

The second bin was like the first in every way except that there were no re-used metates in the walls. The southern boundary of the third bin was the wall of the room. In this case the metate had been removed. The two metates that were in place were of the flat type.<sup>1</sup> Flat side to the east, against the west end of the third bin and 6 inches from the south wall, a broken metate, whole end upward, was embedded in the floor, 9 inches being visible. Against its north end and beneath the floor was a crude ax, point downward. There was a second "stone post" at right angles to the first, adjacent to the south wall, and 2 feet west of the bins. In the northeast corner of the room lay a metate, evidently the one torn out of the third bin, and thence southward were scattered eight manos.

In the refuse westward of Room A.15 was a mug (Field No. 5161).

The bin north of Room A.14 was 4 feet 11 inches long, 3 feet 1 inch wide, and 3 feet 3 inches in depth. It had been dug into a fill of clean earth and lined with small cobbles, the wall being from 3 to 4 inches thick. Evidently the walls had not risen much above the court or yard level as there were few fallen stones in the fill. In the northwest corner lay three well-made axes (Field Nos. 5162, 5163, 5164).

Against the north wall of Room A.14, 1½ feet east of the bin was a large handsomely ornamented corrugated pot (Field No. 5165, Fig. 3), its mouth less than 6 inches below the surface. Beneath the yard level under the pot was a fill of approximately 3 feet of clean earth containing a few sandstone spalls. This deposit rested upon a smooth, hard, floor-like layer of adobe beneath which was a thin stratum of sandstone spalls; then what appeared to be country earth.

Seven feet east of the south end of the east wall of Room A.3 was the butt of a cedar post 6 inches in diameter, and 5½ feet south of Room A.4, in line with the east wall, was another. A search was made for others indicating a possible enclosure or porch outline, but no more were found.

### BUILDING 3.

Building 3 was situated 28 feet north of and parallel to Building 1. It consisted of six rooms and a pit. Four of the rooms and the pit were in a line from east to west, the other two jutting southward a room's length westward of the principal tier, forming what may be considered the base of an L. The floor levels of this series were nearly the same, that of Room A.20 being 2 feet 8 inches above the last yard level at the south-

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<sup>1</sup>I have never seen a trough metate enclosed in a bin. It may be that only the flat ones were walled in, the slabs on either side corresponding to the vallations of the trough type.

west corner of the great ruin. The walls varied in height from 3 inches to 1 foot 3 inches, the eastern boundary of Room A.19 being the highest. This was parallel to and 5 feet 7 inches distant from the wall of the main ruin. The entire series was so badly eroded that the fact of its existence and the fairly accurate dimensions of the rooms were about all that could be determined. There was no evidence of red plaster and the only artifacts found were two corrugated pots (Field Nos. 5166, 5167) buried under the floor against the south half of the west wall of Room A.24.

The pit room, A.22, was 5 feet 4 inches east and west by 5 feet 6 inches in the opposite direction. The floor level was 4 feet below that of the adjoining chamber, A.21. The walls were the smoothed sides of the excavation, and the fill was of ashy refuse. Burial No. 130<sup>1</sup> was beneath the floor.

The dimensions of the rooms in Building 3 were:—

Room	Length	Breadth
A.19	8 feet 8 inches	6 feet
A.20	7 " 6 "	E. end 6 feet 11 inches W. " 6 " 2 "
A.21	7 " 6 "	6 " 3 "
A.23	9 "	6 " 6 "
A.24	9 "	6 "

#### BUILDING 4.

Building 4 was the largest unit of the annex. Of its nine rooms seven were in a row from east to west, the others forming the beginning of a second tier on the northward side of the east end of the first. The southeast corner was 25 feet from the west wall of the pueblo and 10 feet north of Building 3. The floor of Room A.6 was 3 feet above the last yard level at the southwest corner of the main ruin. Thence westward the floors were progressively lower, that of Room A.27 being 1 foot below that of Room A.6.

Room A.6 was 7 feet east and west by 6 feet north and south. The depth was 5 inches at the southeast corner and 1 foot 6 inches at the northwest. The east and west walls were of cobbles, the others of re-used sandstones. The north wall was 7 inches thick, the west 1 foot, which represents the range of thickness for the entire building. Both floor and plaster had been tinted red. Parallel to the outer face of the west end of

<sup>1</sup>This volume, p. 210.

the south wall was an oval fireplace 1 foot 2 inches by 1 foot 8 inches, 8 inches deep, and lined with flat sandstones. In it was a small incomplete mug (Field No. 5168).

Room A.25 was 7 feet north and south with dimensions of 7 feet across the north end and  $7\frac{1}{2}$  feet at the south. The greatest depth was 2 feet. Floor and walls were stained red. There was a poorly defined fireplace at the center. Against the middle of the east wall were a crude metate, a well-worked sandstone slab (Field No. 5174), two irregular ones, and a large chunk of red jasper from which many flakes had been struck.

Room A.7 was 11 feet long and 5 feet 9 inches wide. The depth at the south side was 2 inches; on the north, an average of 1 foot. All the walls were of cobbles, as were those of the balance of the rooms, unless otherwise mentioned. The walls and floor had been tinted red. The ceiling had been burned, apparently while the room was in use, or at least before the contents had been removed. Three large corrugated pots were crushed down along the east wall. Five feet from the east wall and 6 inches from the north was a flat metate with longer axis north and south, its mano in place upon it. Just west of the metate were a yellow blade or *tcamahia* (Field No. 5169) and an unusually well made ax (Field No. 5170). A large corrugated jar (Field No. 5171) was buried in the north-west corner, its mouth flush with the floor and covered with a rough slab. In the southwest corner was a potsherd scoop or scraper (Field No. 5172), and strewn over the floor were fragments composing the bottom of a bowl decorated with the drawing of a bird in full flight bearing a worm or twig-like object in its mouth (Field No. 5173).

Room A.8 was 6 feet 9 inches east and west by 7 feet north and south, and an average of  $1\frac{1}{2}$  feet deep. The walls were red. A new mano, blocked out, but unused, was built into the base of the north wall  $1\frac{1}{2}$  feet from the east end. A broken mano and two crude axes were on the floor. Burials No. 112 and 113 were beneath it.<sup>1</sup>

In the corner formed by the west wall of Room A.8 and the north wall of Room A.7 was a metate.

Room A.9 was 10 feet long and 6 feet 1 inch wide. The greatest depth was 9 inches. In the northeast corner was a fireplace, a mere hollow in the earth, 1 foot 4 inches across and 2 inches deep. Three crude axes were against the east wall.

Room A.10 was 9 feet 6 inches long and 5 feet 9 inches wide. The greatest depth was 5 inches. A mano lay in the southwest corner and

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<sup>1</sup>This volume, p. 204.



fragments of at least two large sandstone slabs were scattered along the north wall.

Room A.11 was 7 feet 10 inches long, 5 feet 9 inches wide at the east end, and 5 feet at the west. The maximum depth was 1 foot 7 inches. The walls had been tinted red. In the northwest corner was a sector-shaped fireplace, lined with flat stones. Its sides were 1 foot 7 inches long and its depth 10 inches. East of it was a large rough slab. Burial No. 114 was beneath the floor in the northeast corner.<sup>1</sup>

The dimensions of Room A.26 were: east and west, 7½ feet; east side, 9 feet; west side, 8 feet. The greatest depth was 1 foot 3 inches. There were four manos and a broken slab on the floor.

The dimensions of Room A.27 were: east side, 8 feet; west, 7½ feet; north, 8 feet 3 inches; south, 7 feet 3 inches. The maximum depth was 1½ feet. Because of the unconformity of the walls, this room and A.26 must have been built at a different time than the tier thence eastward. Beneath both there are pits filled with refuse, presumably similar to the one under Room A.4.

A small pit room, A.28, 1½ feet from the northwest corner of Room A.27, was 5 feet 8 inches north and south by 4 feet 9 inches wide. The corners were rounded and the sides and floor well smoothed. It was half full of clean earth which had been dumped in, the balance of the contents consisting of ashy refuse which had once contained much vegetable matter. The floor was 5 feet below that of Room A.27.

#### BUILDING 5.

Building 5 was situated 18 feet north of Building 4 and approximately 27 feet from the west wall of the great pueblo. It is probable that erosion had destroyed all traces of some portions. Three definable rooms and the corner of a fourth remained. Their floors were at practically the same level as that of Room A.6, Building 4, that is, 3 feet above the ultimate yard level at the southwest corner of the large ruin.

Room A.29 was 6 feet long and 4 feet 4 inches wide with a maximum depth of 1 foot 2 inches. The floor was smooth and hard but only slightly stained from use.

Room A.30 was 10 feet long and 6 feet 2 inches wide. The greatest depth was 1 foot 4 inches. The walls and floor had been tinted red. At the west center there was a metate upside down and in the northeast corner a mano.

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<sup>1</sup>This volume p. 204.

There had been a room north of Room A.30. 'All but the southeast corner was weathered away. A red coating covered the remnants of wall and floor. Three feet from the east wall and  $1\frac{1}{2}$  feet from the south was a slab bin with longer axis north and south, 2 feet long, 1 foot 2 inches wide, and 10 inches deep, 8 inches of it being above the floor. Between the bin and the south wall were three thin manos, one on top of the other, and a rubbing stone. North of the bin lay a metate and east of it the bottom of a corrugated pot, the top of which had disappeared above the surface.

Room A.31 was 11 feet 2 inches long and  $5\frac{1}{2}$  feet wide. The east wall was gone except at the ends, and the west averaged 1 foot 3 inches in height. An oval fireplace occupied the northwest corner. It was 2 feet 4 inches long, 1 foot 2 inches wide and 8 inches deep. Bottom and sides were flat cobblestones, the latter on end reaching 2 inches above the floor. Immediately south of the fireplace was a slab bin 1 foot 4 inches north and south, 1 foot 2 inches wide and 8 inches deep. Just east of it a heap of fallen slabs indicated the former presence of a somewhat larger bin which had also stood mostly above the floor level. Between the fallen slabs and the north wall, that is, east of the fireplace, lay a broken metate and two manos. Scattered southward from the intact bin were fragments of an undetermined number of sandstone slabs and a metate broken across the center.

In the southwest corner a second fireplace extended 2 inches into the floor and was 1 foot 4 inches east and west by 1 foot 2 inches wide. The ends were blocks of sandstone set on edge. Resting upon these and touching the south wall of the room was a baking slab 1 foot 10 inches long, 1 foot 2 inches wide and  $1\frac{1}{4}$  inches thick. The material was a coarse-grained sandstone. The top was as smooth as if polished and the entire stone was black from use.

There was a layer of flat cobblestones and fragmentary slabs 1 foot beneath the floor along the central half of the west side of the room. Evidently these marked an earlier floor level, but the bounding walls were not found.

#### BUILDING 6.

Building 6 was 26 feet west of Building 5. As in the case of the latter, it is probable that some of its chambers were no longer traceable. Only four could be positively defined. The floors were at the same level as those of Building 5.

Room A.1 was 8 feet 8 inches from north to south, 6 feet 2 inches wide at the north end, and 6 feet 4 inches at the south. The depth at the

east side was 9 inches and, at the west  $1\frac{1}{2}$  feet. Under all of the walls there was a foundation course of cobblestones. The east and west walls were of cobblestone, the north of cobbles and sandstones mixed together, and the west altogether of sandstone. The average thickness was 9 inches. A crude ax had been used as a building stone in the north end of the east wall. Both floor and walls had been tinted red over the adobe plaster. A pit was sunk into the made earth to a depth of 4 feet below the floor, but natural soil was not reached (Fig. 4).

Room A.32 was 8 feet 8 inches long and 6 feet wide. The floor was clean as if the chamber had seen little use, at least as a living room.

Room A.33 was 9 feet east and west and 6 feet 4 inches wide. The depth at the south side was 0, and at the north side 8 inches.

The width of Room A.34 was 7 feet 8 inches. The north wall was in place for a distance of 12 feet, but the west wall was gone, leaving the total length undeterminable. The maximum depth was 1 foot 4 inches. A corrugated pot was crushed down  $5\frac{1}{2}$  feet from the east wall and  $2\frac{1}{2}$  from the south. Eastward of it lay five manos, an incomplete sandstone sandal form (Field No. 5178), four axes (Field Nos. 5179-82, inclusive), and portions of several well-worked sandstone slabs. The south wall was built of re-used sandstones, many of the blocks being excellently dressed cornerstones, probably from a fallen doorway in the great pueblo. Beneath Room A.34 was a refuse-filled pit which was not excavated.

#### GROUP 7.

The cluster of building remains at the western edge of the annex southwest of Building 6 is designated Group 7 because the units composing it represent parts of at least two structures of different age.

Room A.12 was a pit room like those previously described, irregularly oval in form, 7 feet 9 inches long, 5 feet wide and 3 feet deep. It was filled with refuse in which was Burial No. 47.<sup>1</sup>

Room A.35 was also a pit room. Its dimensions were: 9 feet east and west, 8 feet north and south; depth, 4 feet. In the southwest corner was a metate and elsewhere on the floor were two manos and fragments of sandstone slabs. The fill was of refuse.

Room A.36 was a third irregularly oval pit room. Its dimensions were: east and west 9 feet, width 7 feet, depth,  $4\frac{1}{2}$  feet. Against the center of the south wall was a trough metate and east of it two circular

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<sup>1</sup>This volume, p. 180.

fire holes a little over a foot in diameter and 8 inches deep. This pit room was filled with clean earth which had been intentionally dumped in.

Room A.2 was a chamber presumably of rectangular shape, the walls of approximately the western half of which were not recognizable. The north and south dimensions was 9 feet. The remaining walls were of adobe with which were mixed occasional rough sandstone blocks. The eastern wall was  $1\frac{1}{2}$  feet thick, the north and south 1 foot 1 inch. The greatest height of the east wall was 1 foot 5 inches. A stub of a partition 10 inches thick jutted out from the center of the east wall. Near the probable location of the northwest corner was an oval fireplace 1 foot 8 inches north and south, 1 foot 3 inches wide and 9 inches deep, lined with sandstones. A continuation of the east wall extended northward for 8 feet to a junction with a cross wall as indicated by the map. Doubtless there had been a room north of Room A.2 above Room A.12, and one east of the latter.

Room A.37 was an enclosure shaped like a truncated wedge. The north wall was 9 feet long, the south,  $9\frac{1}{2}$  feet. The distance between them at the west end was  $2\frac{1}{2}$  feet; at the east,  $6\frac{1}{2}$  feet. The west wall was missing. The eastern one was the arc of a cobblestone kiva of later construction during the excavation for which the original boundary was destroyed. At the extreme end of the north wall there were stubs of a cross wall, marking its former position. Hollowed out of the east end of the south wall was a semicircular recess, jug-shaped, and  $2\frac{1}{2}$  feet in diameter, its bottom on a level with the floor. The north and south walls, 1 foot 4 inches thick, were composed of rough sandstones so deeply coated with mud that they appeared to be of adobe. The floor was at the same level as that of Room A.2.

Room A.18 was practically 5 feet square and bounded by flimsy 6 inch walls of small irregular sandstones. The depth was 1 foot 5 inches. In the southwest corner was an oval fireplace 1 foot 7 inches north and south, 1 foot wide, and 11 inches deep. It was lined with flat sandstones.

Room A.38 was an isolated pit room with rounded corners, approximately 6 feet square and  $4\frac{1}{2}$  feet deep. It was filled with refuse which yielded most of a bowl (Field No. 5183).

Room A.39 was a pit room bearing no determinable relation to any of the buildings in its vicinity. It was  $6\frac{1}{2}$  feet long and 4 feet 10 inches wide with slightly rounded corners. The walls, of cobblestones carelessly laid against the banks of the excavation, were 4 to 8 inches thick, and were traceable to a height of  $3\frac{1}{2}$  feet. In the south wall 1 foot 2 inches from the east end and 2 feet above the floor was a rectangular pocket,

4 inches wide, 3 inches high, and 6 inches deep. Both top and bottom were formed by thin sandstone slabs. Crushed down against the center of the east wall was a large corrugated pot and northward of it lay a large well-worked sandstone slab. To a depth of 1 foot the fill was of stratified sandy earth. In this storm-deposited material were fragments of a number of slabs, a crude ax, and part of a sub-spherical vase with a rim-like extension at the girdle (Field No. 5202). The roof had been of small cedar poles laid across the shorter dimension of the room. These had broken at the center and settled down upon the stratified fill, the ends sloping upward toward the north and south walls. Above them were cobblestones and wall mud.

#### KIVAS.

The kivas in the Annex were so poorly constructed and are so badly ruined that an attempt to preserve them would be fruitless. Excavations in those which were touched at all were in most cases limited. All features uncovered were measured and recorded, but in the majority of instances the data gathered are incomplete. However, it is usually sufficient to determine the type of each kiva, which is the point of first importance. Wherever the plus or minus sign ( $\pm$ ) follows a diameter, the latter was calculated from an arc, and because of the possibilities of asymmetry, is only a fairly close approximation of the actual dimension.

*Kiva A.1.* The walls of Kiva A.1 were of small sandstone blocks, smoothly faced and carefully laid. The diameter at floor level was 23 feet  $\pm$ . The height of the bench was 2 feet 9 inches, and its width 1 foot 4 inches. There had been ten pilasters. The offset in front of them was 1½ inches wide. The one measured—third west from the ventilator, counting clockwise—was 1 foot 5 inches wide, and had been at least 9 inches high. Its core was a cedar log, 8 to 9 inches in diameter and 3 feet long, which lay in line with a radius of the circle, its inner extremity coming almost flush with the face of the masonry, the other end extending about 1 foot 9 inches into the wall behind the pilaster. The logs in pilasters 3 and 5 were examined for ceremonial deposits, but none were found. The wood cores in pilasters 1, 2, 4, 6, and 10 had been removed. The wood in all cases was so rotten that the cavities for offerings would not have been recognizable. Offerings originally present may have been appropriated by those who dismantled the walls down to the average height of the bench, evidently for the purpose of using the stone elsewhere.

The basal recess was 9 inches deep and 5 feet wide. The ventilator tunnel was beneath the floor, 1 foot 4 inches wide and 1 foot 11 inches

deep. It connected with the shaft 2 feet 8 inches from the back of the basal recess. The shaft was 1 foot 4 inches square.

There were ten recognizable coats of plaster, occurring in the following order from the masonry outward: 1, adobe; 2, white; 3, red; 4, adobe; 5, white; 6, dark brown; 7, adobe; 8, white; 9, red; 10, white.

Up to the bench level, the fill was of clean earth containing a few wall stones. The remaining three feet to the surface was an intentional deposit of sandy earth derived probably from the excavation for some later chamber. In it were occasional lenses and small pockets of refuse. Burials No. 116 and No. 117<sup>1</sup> were near the surface, and No. 118<sup>2</sup> against the outer face of the wall at the southwest side.

*Kiva A.2.* The walls of Kiva A.2 were composed of a one-course veneer of sandstone, well faced and neatly laid. The diameter of the room was 14 feet  $\pm$ . The bench was 2 feet 8 inches high and 10 inches wide. There were no pilasters. The basal recess was unusually small, being only 1 foot 8 inches wide and 2½ inches deep. The ventilator was anomalous. There was a tunnel 1 foot 2 inches wide and 2 feet deep beneath the floor, and also a slot of the same width continuing upward from it to the height of the bench, above which point no masonry remained. The walls of the entire chamber had been torn down, practically to the bench. The eastern arc was cut across 8½ feet from the basal recess by the cobblestone wall of Kiva A.6, of later construction. The fill was of clean earth containing some wall stones.

*Kiva A.3.* The diameter of Kiva A.3 was 13 feet  $\pm$ , and the distance from floor to surface of the mound 8½ feet. Slightly less than the south half was excavated. Evidently this kiva was of the six pilaster type. The height of the bench was 3 feet 4 inches. The depth of the first banquettes east of the ventilator was 1 foot 6 inches. The intervening pilaster, the only one uncovered, was set back 2 inches from the edge of the bench. It was 2 feet ¾ inch wide, 1 foot 4 inches thick and stood to a height of 2½ feet, which was less than the original maximum. The basal recess was 5 inches deep and 4 feet 9 inches wide. The south banquettes was 4 feet 3 inches deep, 5 feet 7 inches wide at the back, and 4 feet 9 inches at the front.

The deflector measured 3 feet 2 inches in length and 1 foot in thickness. It was built of sandstones, the southward side being 2 feet from the back of the basal recess. The height was undeterminable. From the extremities of the deflector, wings of masonry, evidently always low,

<sup>1</sup>See p. 205, this volume

<sup>2</sup>See this volume, p. 205.

extended back to the corners of the recess. The ventilator tunnel was above the floor, 1 foot 4 inches wide, and of unknown height, as the tops of the sides had fallen. The floor was smooth and black from use. The portion back of the deflector was 4 inches higher than the rest.

The walls of the chamber and the one pilaster examined were carelessly built of sandstones. Among the re-used blocks were a number of the black-green cubes which form bands in the west wall of the great pueblo. To the limit of excavation the wall west of the south banquette was completely destroyed. The boundaries of the south banquette were only 4 to 6 inches thick, being composed of small cobblestones. From the southeast corner of this banquette, a pocket 2 feet long and 1 foot 8 inches high extended eastward, half of it being beneath the floor. It was filled with ashy refuse. On the kiva floor there were a few potsherds and in the ventilator tunnel a crude ax. Three coats of plaster were in evidence: 1, adobe; 2, white; 3, red. The fill was of sandy earth deposited by the elements, containing many cobblestones from the upper walls of Building 2.

*Kiva A.4.* The diameter of Kiva A.4 was 9½ feet and the distance from floor to surface of the mound 7 feet. The walls were a one-course veneer of cobblestones. There was a 2½ inch offset at bench level, that is, 2 feet 7 inches above the floor. The plaster was of adobe, smoked black. There were no pilasters and only one banquette. The basal recess was 3 feet 8 inches wide and 6 inches deep. The bottom of the south banquette was on a level with the offset in the wall. This enclosure was 4 feet 7 inches deep on the west side, 3 feet 8 inches on the east, 4 feet 11 inches wide at the back, and 3 feet 8 inches at the front. The ventilator tunnel was 1 foot 4 inches wide, and somewhat more than that in height. No deflector could be found, and satisfactory evidence of a fireplace was lacking. However, just south of the center there was a pit 1 foot 8 inches in diameter and 1½ feet deep. The sides were of clean earth uncolored by heat. A deposit of refuse covered the floor to a depth of 1 foot 5 inches against the south wall, sloping thence downward and dwindling out at the center of the room. Ashes, sweepings, animal bones, and potsherds were the principal components. This deposit yielded a double-bottomed mug (Field No. 5135), two awls (Field Nos. 5136, 5138), two bone tubes (Field Nos. 5139, 5140), a deer jaw scraper (Field No. 5141), and a red crinoid stem (Field No. 5137). Burial No. 133 was beneath the floor.<sup>1</sup> Above the refuse, the fill was of sandy earth and

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<sup>1</sup>This volume, p. 210.

cobblestones interrupted by a 6 inch lens of refuse at the center, 2½ feet above the floor.

*Kiva A.5.* This kiva was a cylindrical pit lined with a one-course wall of cobblestones and re-used sandstones indiscriminately mixed. There had been adobe plaster, smoked black, but most of it had peeled off. The diameter was 9 feet 9 inches and the distance from floor to surface 7 feet 7 inches. Even the south banquette was absent, the walls being pierced only by the ventilator tunnel. The latter was 1 foot wide and 1 foot 8 inches high. The deflector was 2 feet 3 inches from the south wall. It was 1 foot 8 inches long and 4 inches thick. Only the bottom course was in place. The fireplace was 8 inches from the deflector, 1 foot 8 inches in diameter and 1 foot 1 inch deep. Cobblestones set on end formed the sides.

A six-foot arc of the north wall had collapsed *en masse*, and the resulting débris formed an initial fill, triangular in cross-section, and ending at the north edge of the fireplace. With its eastern end resting upon the fallen wall material and the other touching the northwest arc of the wall 2½ feet higher up, lay a well-preserved cedar log, 3 to 5 inches in diameter and 4½ feet long. Covering the portion of the floor not occupied by the mass already mentioned, there were wall stones probably allowed to fall in as the roof was being dismantled. On top of a heap of these against the west wall 1 foot above the floor was an unbroken mug (Field No. 5199) and the top of a corrugated pot of unusual form (Field No. 5200).

Above the wall wreckage refuse continued to the surface of the mound. It was unusually coarse and contained many fire-broken stones and potsherds. Organic material was plentifully represented by brown mould. At the south center, 2½ feet from the floor, lay a large bowl inverted (Field No. 5198). The bottom had been worn completely through, then patched with a disk-shaped sherd from a corrugated pot stuck to the inner surface with pitch. In addition to the objects already mentioned, the refuse yielded burials Nos. 135-138,<sup>1</sup> inclusive, and the following specimens: five bone awls (Field Nos. 5184-5188, inclusive) three bone tubes (Field Nos. 5189-5191, inclusive), a bird bone with end cut and perforated (Field No. 5192), an antler implement (Field No. 5196), two concretions (Field Nos. 5193-94), a pestle (?) (Field No. 5195), and a stone pendant (Field No. 5197). A burned and broken femur of an adult was also found.

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<sup>1</sup>This volume, p. 211.



*Kiva A.6.* The walls of Kiva A.6 had been of cobblestones. They were so badly fallen that excavations were stopped before the floor was reached. The approximate diameter of the chamber was 12½ feet. The south banquette was 4 feet 1 inch deep and 4 feet 7 inches wide at the back. The construction of this chamber involved the removal of part of the sandstone wall of Kiva A.2.

*Kiva A.7.* This kiva was merely a cylindrical pit unlined with masonry. Adobe plaster had been applied directly to the well-smoothed banks of the excavation. The diameter was 11 feet and it was 10 feet 3 inches from the floor to the surface of the mound at the north or highest side. The kiva had not been of such great depth, but the upper part of the banks had crumbled to the extent that it was not apparent how much of the mound had accumulated after the chamber had been abandoned and filled.

The basal recess seemed to be represented by an undermining of the bank at the southeast side, 2 feet across and 10 inches deep. From this an oval tunnel 1 foot 2 inches in greatest width led off a short distance southwestward, then opened into a trench pointing toward the southeast, 5 feet long and 1 foot 8 inches wide. This device had served in place of the normal ventilator, but the banks had caved so badly that further details could not be secured.

There was a pocket hollowed out of the north wall, its bottom 6 inches above the floor. It was 1 foot 4 inches high in front, 8 inches at the back, 1 foot 8 inches across, and 1½ feet deep. Just east of this pocket there was a circular hole 1 foot 8 inches in diameter, entirely back of the wall line and extending 9 inches below the floor. It rose vertically for 6 inches at the back, then sloped inward, cutting the wall line 1½ feet above the floor. Long grooves made by a sharp-pointed digging implement were plainly visible in the sides of these excavations. In the second one was the core of the left horn of a large mountain sheep. A third wall pocket was present in the eastern side 1½ feet from the basal recess. The dimensions were: height, 1 foot; width, 10 inches; depth, 7 inches; sill, 7 inches above the floor.

No deflector or fireplace could be found. Under the floor was 1 foot of mixed earth containing some refuse, but there was no evidence of a used floor underneath it. The banks of the pit were of natural soil, hence it is evident that this earth was carried in for the express purpose of raising the floor level. Refuse completely filled the chamber and extended to the surface of the mound. It was coarse, containing many fire-broken stones, numerous deer and turkey bones, and many potsherds.

From 6 inches above the floor at the north side to 3 feet above it against the south wall, there was a layer 2 to 6 inches thick of charred corn refuse. From the quantity of residue, the pit must have been nearly filled with this rubbish and then burned out. There was a second layer of the same material  $1\frac{1}{2}$  feet above the first, and 2 feet higher up a third. Thus it would appear that at least three harvests passed while the filling of the pit was in progress. In the lowest fire layer there were a charred parietal and frontal bone of an adult. In the refuse were found burials Nos. 139-143,<sup>1</sup> inclusive, and the following specimens: a crude miniature vessel of unburned clay (Field No. 5203), a small pottery object shaped like a knife handle with guards above and below the hand (Field No. 5204), four bird bone awls (Field Nos. 5206-5209, inclusive), seven bird bone tubes (Field Nos. 5210-5216, inclusive), three grooved axes (Field Nos. 5217-5219), a double-bitted ax (Field No. 5220), a grooved hammer (Field No. 5221), and a rubbing stone (Field No. 5222).

*Kiva A.8.* Only the south banquette of Kiva A.8 was excavated. It was 4 feet deep,  $5\frac{1}{2}$  feet wide at the back and 4 feet 9 inches at the front. The walls were of cobblestones plastered with adobe which was smoked black. In the southeast corner a pit 1 foot 7 inches in diameter and 2 feet deep extended beneath the east wall. It contained a thin neatly fashioned metate (Field No. 5223), inverted upon the mano which had been used with it (Field No. 5223). Above the first metate was a second, also inverted, thick, nearly round, and but slightly used. Cedar splints from the roof were among the sandy fill. These lay across the banquette, that is, from east to west.

*Kiva A.9.* The diameter of Kiva A.9 was 13 feet  $\pm$ ; the distance from floor to surface,  $8\frac{1}{2}$  feet. Excepting the corners of the basal recess, which were of good-sized sandstone blocks well squared, the wall up to the bench level was 5 to 8 inches thick and built of small cobblestones and chunks of sandstone waste. The height of the bench was 3 feet 9 inches and its width 1 foot 1 inch. No pilasters were in place in the part excavated, but they may have been originally present as the edge of the bench had crumbled sufficiently to have undermined them and permitted them to fall. The basal recess was 4 feet 2 inches wide and 10 inches deep.

The wall above the bench was a cobblestone veneer with squared blocks for the corners of the south banquette. The latter was  $4\frac{1}{2}$  feet deep,  $4\frac{1}{2}$  feet wide at the back, and 4 feet 2 inches at the front. The ventilator tunnel was above the floor, 1 foot 4 inches wide and 2 feet high.

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<sup>1</sup>This volume, pp. 211-212.

It was placed 4 inches nearer to the east than to the west side of the basal recess. The roof was supported by two layers of cedar sticks, the first laid crosswise, the other lengthwise. The deflector was 3 feet 4 inches long and 7 inches wide. It was 2 feet distant from the wall of the basal recess and built of small stones and mud in about equal proportions. It was broken down to within 6 inches of the floor. Wings of the same construction and thickness extended from the ends of the deflector to the kiva wall, their inner faces being in line with the corner of the basal recess. The western one stood to a height of 1 foot 3 inches at its junction with the wall. The circular fireplace was 6 inches from the deflector, 2 feet in diameter, 1 foot 2 inches deep, floored with stones, and filled to a depth of 8 inches with ashes.

Beneath the southwest corner of the south banquette was a pot hole or cyst. The opening into it was rectangular, adjacent to the south wall, and separated from the ventilator tunnel by a 6-inch wall of sandstone. The cavity itself was 3 feet in diameter and 2 feet 8 inches high, extending beneath and beyond the south and west walls of the banquette. The sides were of earth which sloped inward to merge with the dome-shaped top. On the floor were a handsomely polished sandal form (Field No. 5225) and a pendant made from a canine tooth of some carnivore (Field No. 5226).

Most of a mug (Field No. 5227) lay in the southwest corner of the basal recess and in the opposite corner was a bone scraper (Field No. 5228). The ventilator tunnel contained a bowl-shaped coiled basket about 1 foot in diameter and 4 inches deep, a digging-stick, a long object shaped like the longitudinal half of a hollow cylinder about 10 inches in diameter; also the remainder of the mug previously mentioned. In a row along the wall east of the basal recess were a stick 10 inches long, 2 inches wide and  $\frac{3}{4}$  inch thick with curving ends, charred as if by use as a poker; a bowl-shaped coiled basket 8 inches in diameter and 3 inches deep; and a coiled plaque 1 foot in diameter. None of the perishable objects could be saved. The kiva was filled with drifted sand and fallen wall stones among which were cedar roof timbers, both round logs and splints. Beneath this kiva there were older walls which will be mentioned in another connection.

*Kiva A.10.* A small pit was sunk to floor level at the western edge of Kiva A.10. This revealed a hard smooth floor; a neatly plastered cobblestone wall; a bench height of 3 feet; a 4-inch offset; one pilaster and a banquette 1 foot  $1\frac{1}{2}$  inches deep. In a distance of 4 feet along the base of the wall there lay three manos and two flat cobblestones each with

a daub of red paint at the center of one side. This chamber had been intentionally filled with sandy earth and fine gravel. Other kivas of known location in which no digging was done are indicated on the map.

#### STRATIGRAPHY.

Up to the present the extensive and systematic sectioning which conditions in the Annex would justify has not been done. However, the few sections obtained afford the basis for certain conclusions which will vindicate their presentation.

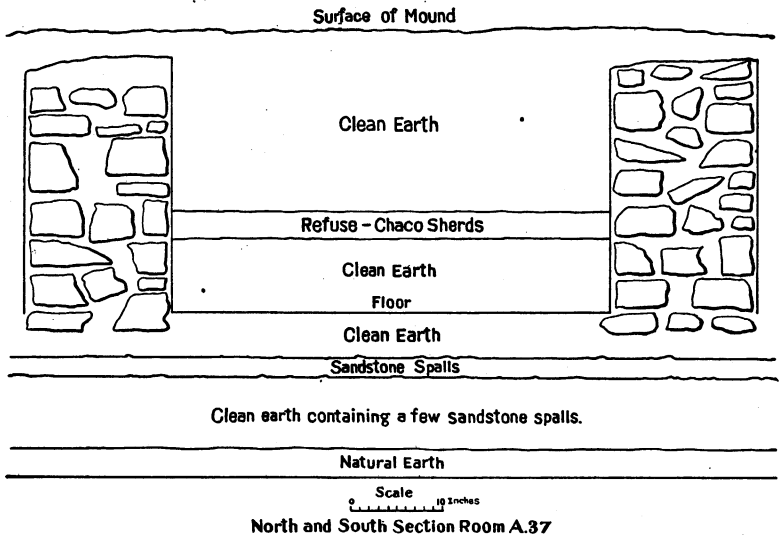
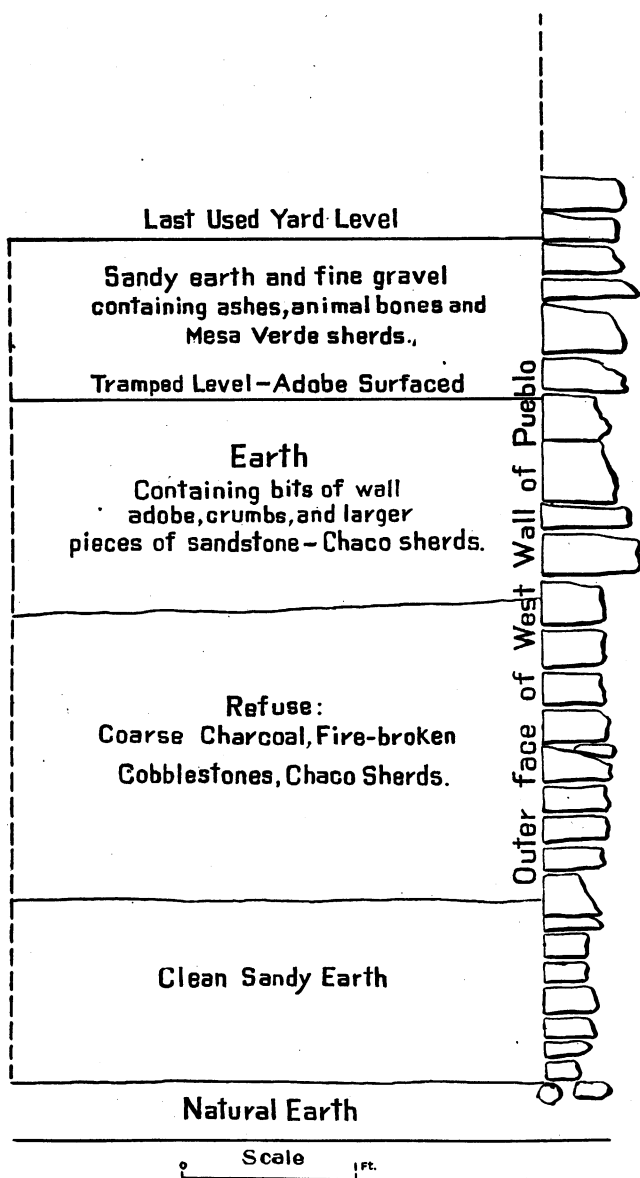


Fig. 5.

Fig. 5 represents a north and south cross-section of Room A.37. Overlying natural clayey soil was a layer 8 inches in thickness of clean earth containing a few sandstone spalls which were proof of its artificial deposition. The second stratum, 2 inches in thickness, was composed entirely of sandstone spalls and the greenish sand which results from abrasion or disintegration of the sandstone found in the walls of the pueblo. Above this were 5 inches of clean sandy earth in which were bedded the walls of the room and upon it the thin adobe floor had been laid. The fourth stratum, or first above the floor, was of clean earth 8 inches in thickness. Upon this lay a 3-inch band of ashy refuse containing a few Chaco potsherds. Thence upward to the surface, a distance of 1

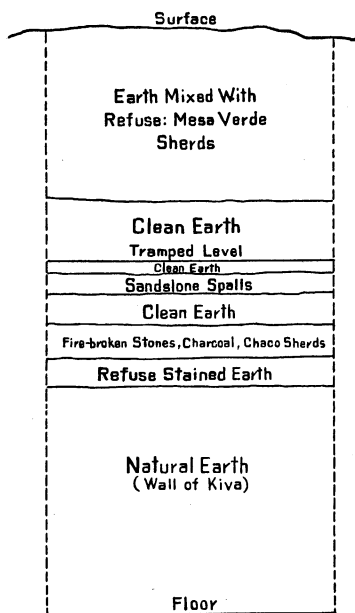


**East and West Section against West Wall of  
Pueblo opposite Room 149**

Fig. 6.

foot 8 inches, there was an intentional fill of relatively clean earth, extending over the butts of the dismantled walls.

Fig. 6 is an east and west cross-section taken at the foot of the west wall of the pueblo opposite Room 149. The pit was not sunk below the one course cobblestone foundation which presumably was bedded in natural earth. Clean sandy soil 1 foot in thickness composed the first stratum. The second was a layer of refuse 1 foot 8 inches thick. The

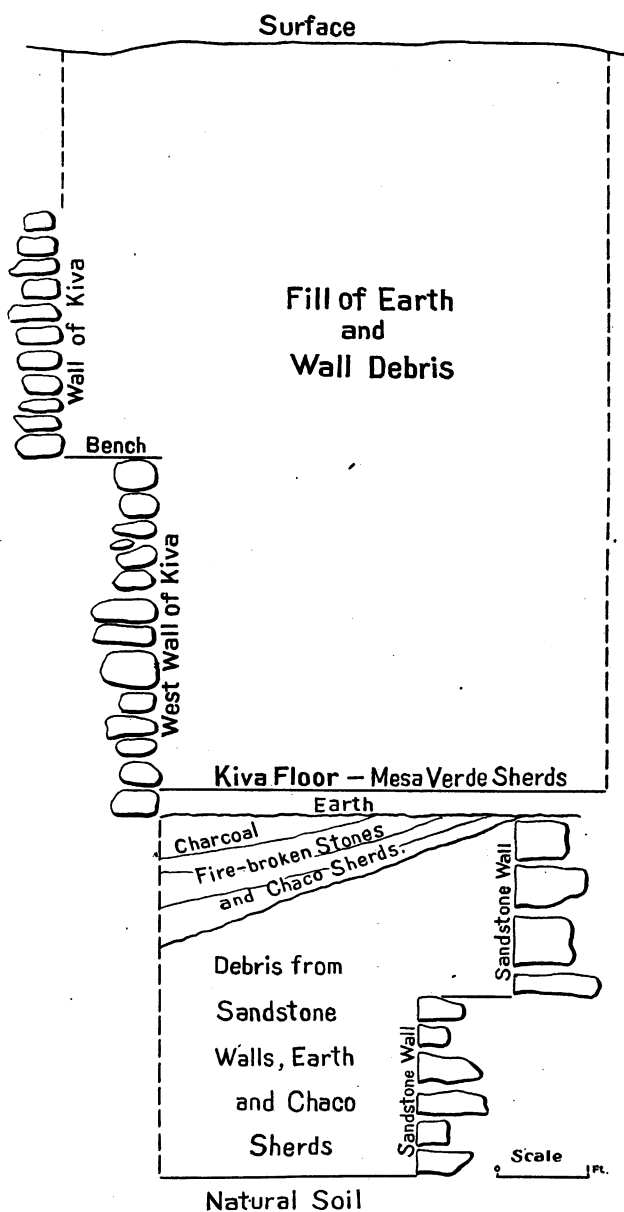


Scale in.  
East and West Section  
North Side of Kiva A.7.

Fig. 7.

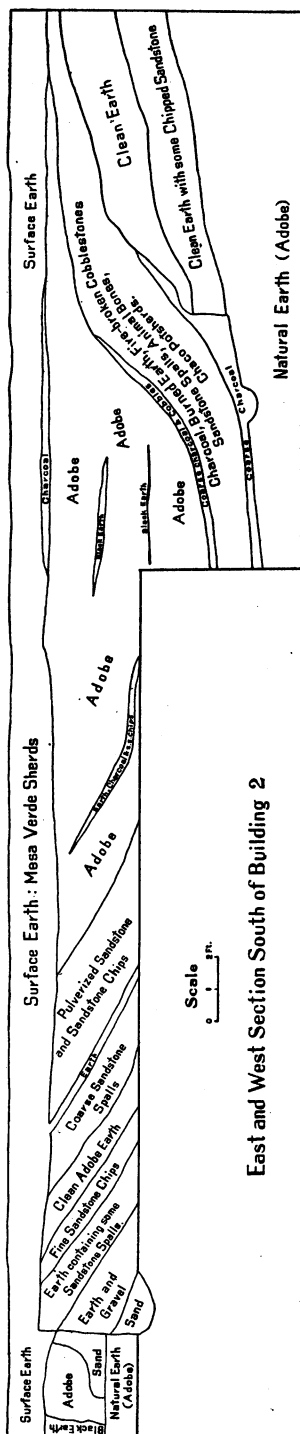
conspicuous components were coarse charcoal, fire-broken cobblestones, a meager admixture of burned earth, occasional animal bones, and a very few Chaco sherds. The major constituent of the third stratum was sandy earth, containing, however, bits of wall adobe, crumbs, and larger pieces of sandstone, with rarely a Chaco sherd. This layer was 1 foot 2 inches thick. On top of it was an adobe floor as smooth and hard as those ordinarily found in much-used rooms. Above the floor 1 foot of sandy earth and fine gravel was plentifully diluted at the bottom with refuse which dwindled out toward the top. Among the refuse were animal bones and Mesa Verde potsherds. At the upper limit of the sand there was a tramped level marking the last plane of occupation. Thence to the surface there had been 6½ feet of wall detritus which was removed previous to the taking of the section.

Fig. 7 gives an east and west section at the north side of Kiva A.7. The kiva pit had been dug through whatever artificial deposits were in existence at the time of its construction and 5 feet into the natural soil beneath. Only the 4 feet lying above the floor appear in the drawing. The first artificial deposit was 6 inches of soil slightly stained with refuse. The second layer, 7 inches thick, was made up of coarse charcoal, fire-broken cobblestones, and a small proportion of earth, animal bones, and Chacos herds. The third stratum was clean earth 6½ inches thick. Then followed 4 inches of fine sandstone waste, that is, spalls and green sand.



East and West Section, West Side of Kiva A.9.

Fig. 8.



**Fig. 9.**



On top of this was  $2\frac{1}{2}$  inches of clean earth, its surface being a smooth tramped level. The sixth stratum was clean earth 1 foot 1 inch in thickness. It was very fine-grained, homogeneous and compact, and appeared as if naturally deposited. Extending thence to the surface of the mound there was 3 feet of dark-colored earth mixed with refuse which contained animal bones and Mesa Verde potsherds.

Conditions shown by Fig. 8 were found at the west side of the south half of Kiva A.9. At a depth of 13 feet 4 inches what was taken to be natural earth was encountered. On the east side of the pit a sandstone wall rose to a height of  $2\frac{1}{2}$  feet. Then there was an offset of 1 foot 1 inch ending at the base of a second sandstone wall which was 2 feet 1 inch high. A three-inch stratum of relatively clean earth intervened between the top of the second wall and the floor of the kiva. From natural soil to the top of the second wall the fill was of fallen masonry. The surface of this deposit pitched downward toward the west, falling  $1\frac{1}{2}$  feet in a distance of 4 feet. The triangular space thus left beneath the band of earth underlying the kiva floor was filled with coarse charcoal, fire-broken cobblestones, and some burnt earth. Both in this layer and in the wall débris there were occasional Chaco sherds. The sherds from the kiva floor and above it were of Mesa Verde type. As stated in the description of the kiva, it was filled with sand and wall stones.

It was not determined of what sort of structure the two sandstone walls were a part. Occurring at such a depth the natural assumption would be that they belonged to a kiva, the height of the lower one and the width of the offset being appropriate dimensions for the basal ring and the bench. However, if they were kiva elements, the structure was either very large, or asymmetrical, since in the 5 feet laid bare the walls appeared to be straight rather than arc-shaped.

The section shown in Fig. 9 was taken south of Building 2, beginning 70 feet  $26^{\circ} 30'$  south of west from the outer southwest corner of Room 151, and running thence due west  $43\frac{1}{2}$  feet. Excavations along this line were not primarily for archaeological purposes, and the use to which the trench was to be put permitted it to be carried down to natural soil only at the eastern end. Inasmuch as the various strata are shown in the drawing it seems unnecessary to mention them individually here. The section as a whole reveals that a large depression which once existed west of the main pueblo was completely obliterated by being periodically used as a repository for refuse and building waste. The question suggests itself whether the bands of clean earth lying between the strata of sandstone spalls were deposited by nature or by man. Had the material

composing them been transported by the elements, one would have expected it to have lain in the trough of the depression, and to have been stratified horizontally. Occurring with a distinct dip, it is most probable that it was brought from excavations elsewhere and dumped down the existing slopes. The depression itself may have been of artificial origin, the soil in which it is situated being an excellent quality of adobe which may have been made use of as mortar for the walls of the pueblo; or part of the voluminous mass of earth forming the terrace south of the ruin may have been dug from it. But more than likely it was an ancient channel of the wash which comes out of the mesa back of the ruin, and has meandered back and forth over the relatively level land, deflected hither and thither by dikes of drift heaped up by its own flood waters. Of chronological significance is the fact that Chaco sherds were found in the basal stratum of refuse and Mesa Verde sherds in the surface earth formed after the depression was filled to what was at the time ground level. The principal source of this surface soil was the refuse which lay along the south skirt of the annex, which was gradually washed down upon the somewhat lower ground.

Because of its relation to the annex the following point will be mentioned here. In fencing the ruin property the line of post holes following the western boundary, which passes over the west edge of Kiva A.1 cut through a stratum of sandstone spalls for a distance of 60 feet south from that chamber, at a depth of from 2 to 2½ feet. Apparently this material lay upon virgin earth.

## SUMMARY.

Although the excavation of the Annex is by no means completed, the data in hand enable a partial reconstruction of events for that locality. The first indubitable proof of human activities is, in some places, the débris left by masons who were shaping blocks for the walls of a sandstone building: in others deposits of a characteristic type of refuse; and in others still, the bases of sandstone walls. That the Chaco people were the first builders is undubitably proved by the potsherds from the lowest refuse stratum. It is practically certain that a sandstone Chaco pueblo once occupied at least a part of the area of the Annex. The walls at the bottom of section 4, Kivas A.1 and A.2 and Room A.37 are the only remnants which have been identified. The large size sub-floor ventilator, low bench, and ten pilasters built to enclose radial logs, plainly identify Kiva A.1. Kiva A.2 is of a different type, but from its similarity to Kiva Q in the main ruin, which is of known Chaco age, it must be considered contemporaneous with Kiva A.1. Where Chaco kivas occur detached from the building to which they pertain, they are sunk deep into the earth, but when incorporated within the building mass most of their altitude is above ground. The floors of the two in question are not more than 2½ feet below contemporary ground level. This is another indication that they were once enclosed by a building. From the dearth of wall débris it is evident that the structure was torn down and the stone carried away. Despite this fact and the degree to which the neighborhood was riddled with later kiva pits, it is probable that careful excavation would reveal most of the groundplan of the original building. Overlying the earliest remains there are deposits of clean earth, some of it presumably laid down by the elements, but the bulk of it is excavated earth intentionally dumped where it lies.

Eventually the bearers of Mesa Verde culture chose to build at the western end of the great pueblo upon the area raised slightly above the level of the surrounding country by the activities of their predecessors. During the course of their residence they constructed the various cobblestone houses, pit rooms, and small kivas which have been described in the preceding pages, and doubtless others which lie concealed by the irregularities of the unexcavated portion of the Annex.

