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[Madison, Wisconsin]: Society for American Archaeology and the  
University of Wisconsin Press, 1959

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AN ARCHAEOLOGICAL REPORT ON A CAVE DEPOSIT (D1-30)

IN

NORTHEASTERN OKLAHOMA

by

Joan E. Freeman

With an Appendix on the Skeletal Material by Aaron Elkins

1959

## PREFACE

This report on site D1-30 is another in a series on archaeological sites in Delaware County, Oklahoma. The analysis of material from these sites, excavated under the WPA program in the late 1930's, is being carried on as an interdepartmental study of biological and cultural change at the University of Wisconsin. Financial aid for this program has been granted by the National Science Foundation and the Research Committee of the University of Wisconsin.

Part of the analysis of site D1-30 was completed while the author was the recipient of the Alice L. Beeman Fellowship, granted by the American Association of University Women. Acknowledgement and thanks are hereby given to the above mentioned groups and the following individuals: Mr. Aaron Elkins for identification and description of skeletal remains from the site; Mr. Frank Iwen and Mrs. Patricia B. Habeck for species identification of bone and shell artifacts; and Dr. Robert Bell of the University of Oklahoma for shipping materials to the University of Wisconsin.

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## INTRODUCTION

During the month of May, 1938, archaeological excavations were begun and completed in a cave (D1-30) which was located in the bluffs on the west side of Woodward Hollow in Delaware County, Oklahoma. The excavation of this site as well as the excavation of other sites, was conducted in the area of Delaware County bordering the Grand or Neosho River, an area which was flooded by water which backed up in the river valley after the construction of a dam near Langley. The entire salvage program, carried on between 1937 and 1940, was one of the projects of the Works Project Administration and was under the sponsorship of the University of Oklahoma. This particular site was excavated by WPA workmen under the supervision of David A. Baerreis.

The specimens from D1-30, housed in the Stovall Museum of the University of Oklahoma since the time the site was excavated, were sent to the University of Wisconsin to be included in a study of cultural and biological change as seen in an archaeological context in sites in the Neosho River area in Delaware County. This project was financed by the National Science Foundation and the Research Committee of the University of Wisconsin.

From the field catalog of all specimens recovered from D1-30 it can be noted that not all of the artifacts are now available for study. However, the missing artifacts, potsherds, are not of sufficiently high numbers to significantly change the interpretation of the culture(s) present. Where artifacts are missing, they are so listed in the descriptions of various types.

The site was extensively disturbed prior to the WPA excavations. While the extent of the disturbance was not observable in the field, the provenience of sherds from the same vessel and the scattered remains of the one burial at the site give clues to the actual amount of disturbance present due to the excavation of a pit in the floor of the cave.

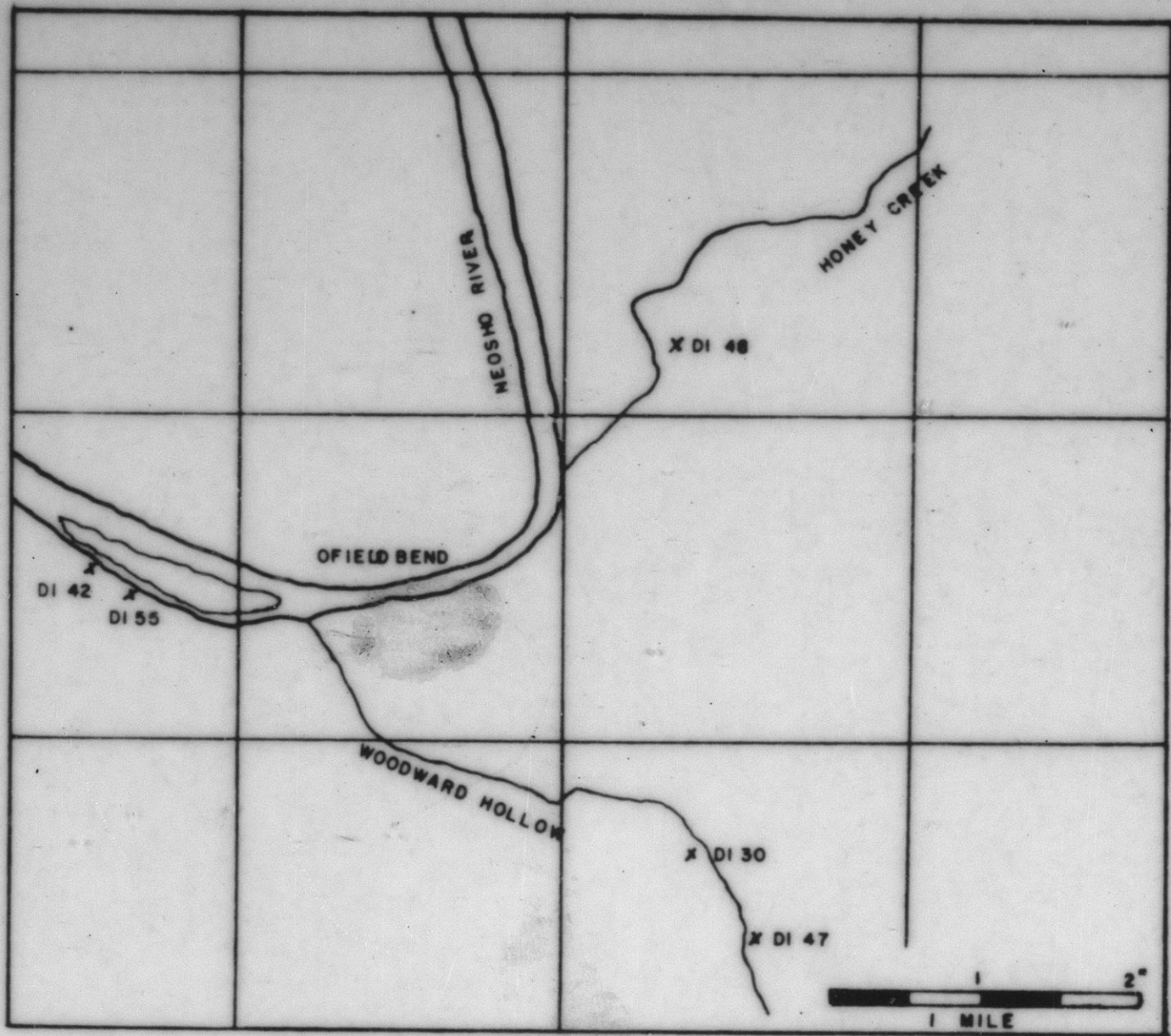
- 4 -

While all artifacts are described, the analysis of their significance is based primarily on those artifacts which are present at this time and on those that can be definitely assigned to undisturbed areas within the cultural deposit within the cave.

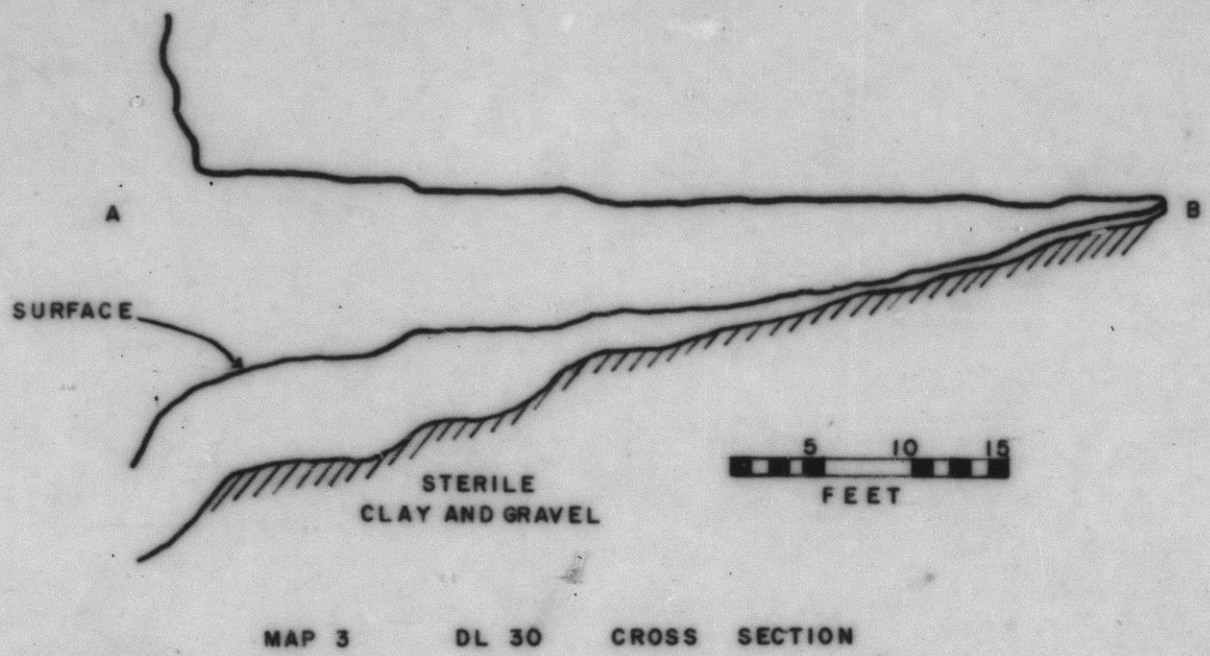
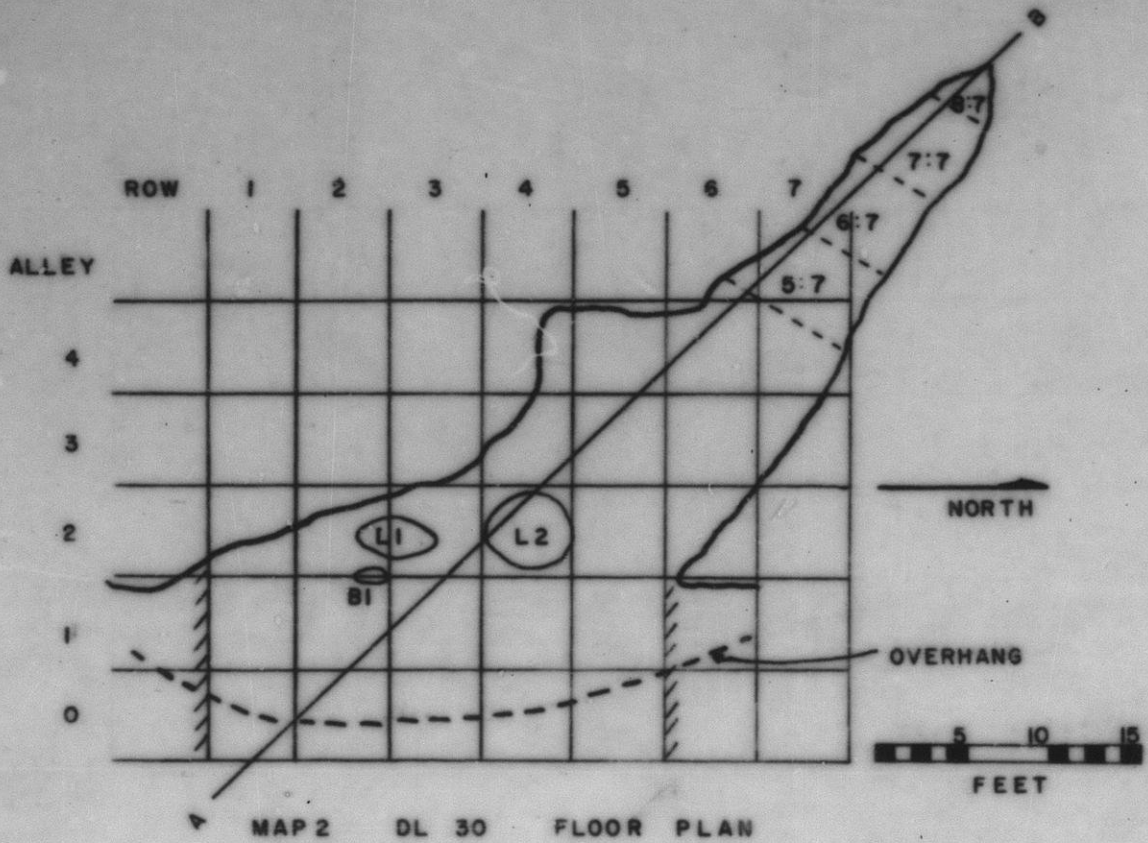
#### Site Description and Excavation Procedure

The cave, site D1-30, was found about half way up the low limestone bluffs on the west side of Woodward Hollow. It faced a steep rolling hillside on the opposite side of the hollow across a small intermittent stream that joined the Neosho River about one mile from the cave. The site was located on land belonging to Mr. Copeland in the SW 1/4 of the NE 1/4 of Sec. 26, T24N, R23E, Delaware County, Oklahoma. (Map 1)

The cave was about twenty-seven feet wide at its mouth and penetrated forty feet back into the bluff where two holes passed up through a fault in the limestone and furnished some ventilation for the cave. The cave was so formed that it provided an area in front which was twenty to fifteen feet north and south and twenty feet east and west, and a long, narrow corridor, twenty feet long and twelve to five feet wide at the rear. The rock overhang extended beyond the walls of the cave (Map 2). The ceiling was level, but the floor level at the time of excavation and previous to aboriginal occupancy slanted upward to the rear. The cultural deposit at the front of the cave was over five feet deep with its surface five to eleven feet from the ceiling. In the rear corridor the deposit was one foot to four inches deep and only one to three feet from the ceiling (Map 3). Apparently the original floor also slanted upwards to the north and south, across the mouth of the cave, as well as slanting upwards to the rear. From this configuration, one would assume that most of the actual living within the cave took place at the front.



Map 1 Location of D1 30



The rear corridor is narrow and sufficiently low to prohibit much activity. Artifacts were found in this corridor, probably because it provided an out of the way area in which to dump debris.

The deposit within the cave was staked off in five foot squares formed by five foot wide north-south Alleys and five foot wide east-west Rows. Each Row and Alley was given a number and the squares are designated by the combined Alley and Row number, in that order (1:1, 1:2, etc.). The narrow back corridor of the cave was not placed on the grid but divided into five foot sections for the length of the corridor. These sections were called Squares 5:7, 6:7, 7:7 and 8:7, but are not related to the original grid.

The 1 Alley is located at the front of the cave and the 1 Row at the south-east edge of the cave. The 0 Alley is outside the cave proper, but partially under the overhang, at the edge of the talus slope which runs down to the stream bed.

It was noted before excavation that a large pit, partially refilled, had been dug in the center of the deposit at the mouth of the cave. Loose dirt around the depression was thought to be waste dirt from the pit, although it did contain artifacts. The apparent extent of disturbance caused by this pit will be discussed later.

#### Features

The only discernable features in the deposit in the site were two ash lenses. Lens Number 1 had an oval outline and was 2.6' wide, 4.4' long, and .4' thick. This lens was located at the border of Squares 2:2 and 2:3 in Level 7.

The other lens had an irregular outline and measured 4.6' by 4.3' by .25'. It was in Square 2:4 in Level 8.

These lenses, the remains of cooking fires, were situated at the mouth of the cave and must have also served to warm the cave interior.

Skeletal Remains

A single burial was found at the site, but since it was located in the area which had been disturbed by prior excavation and had been disturbed itself, the amount of information available concerning burial position is limited. The burial was clearly a single, primary inhumation with the head oriented to the south. The skull rested on the left side with the face to the west, the back wall of the cave. The individual, a young adult male, is fully described in the Appendix by Aaron Elkins. The articulated skeletal material in the burial consisted only of the skull, left clavicle, and fragments of the left scapula, left humerus, ribs, thoracic, and lumbar vertebrae, and right innominate. The center of the burial (2' by .8' in dimensions) was located 3.75' north and .2' east of stake 1:2 at a depth of 2.8' below the surface of the deposit. If any grave goods had been placed with the burial, none remained at the time of re-excitation.

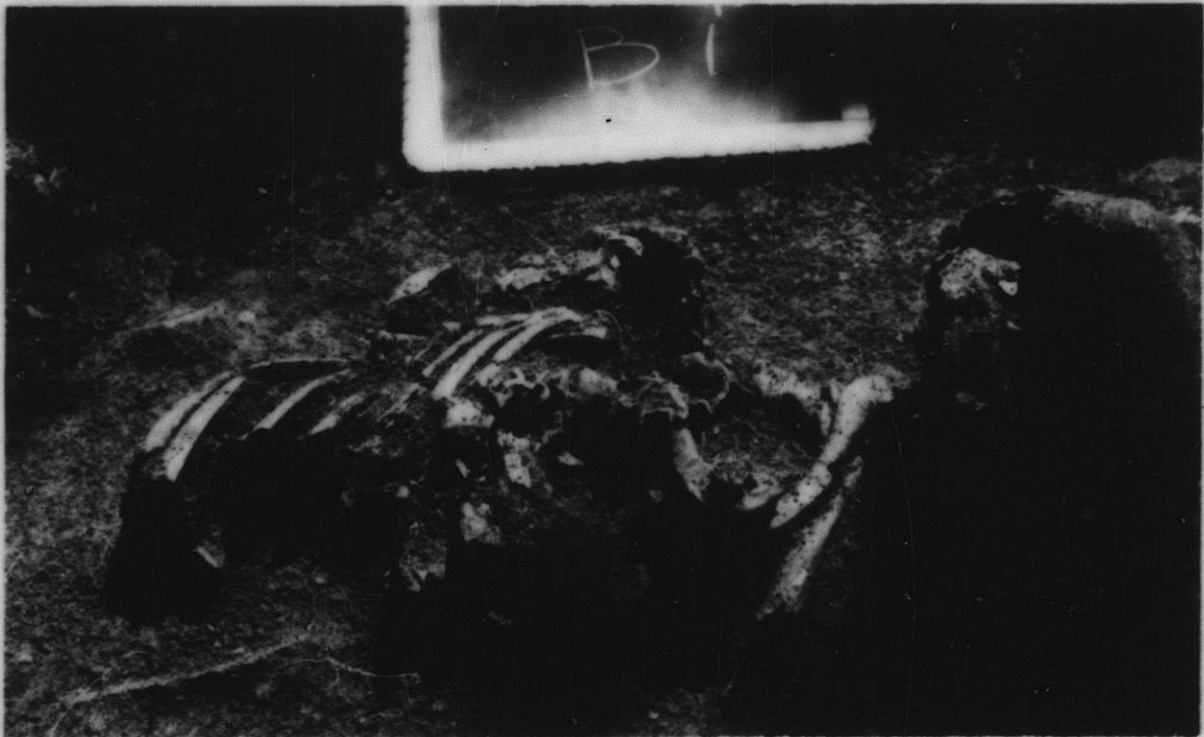


Figure 1. Burial Number 1 at D1 30

- 1 -

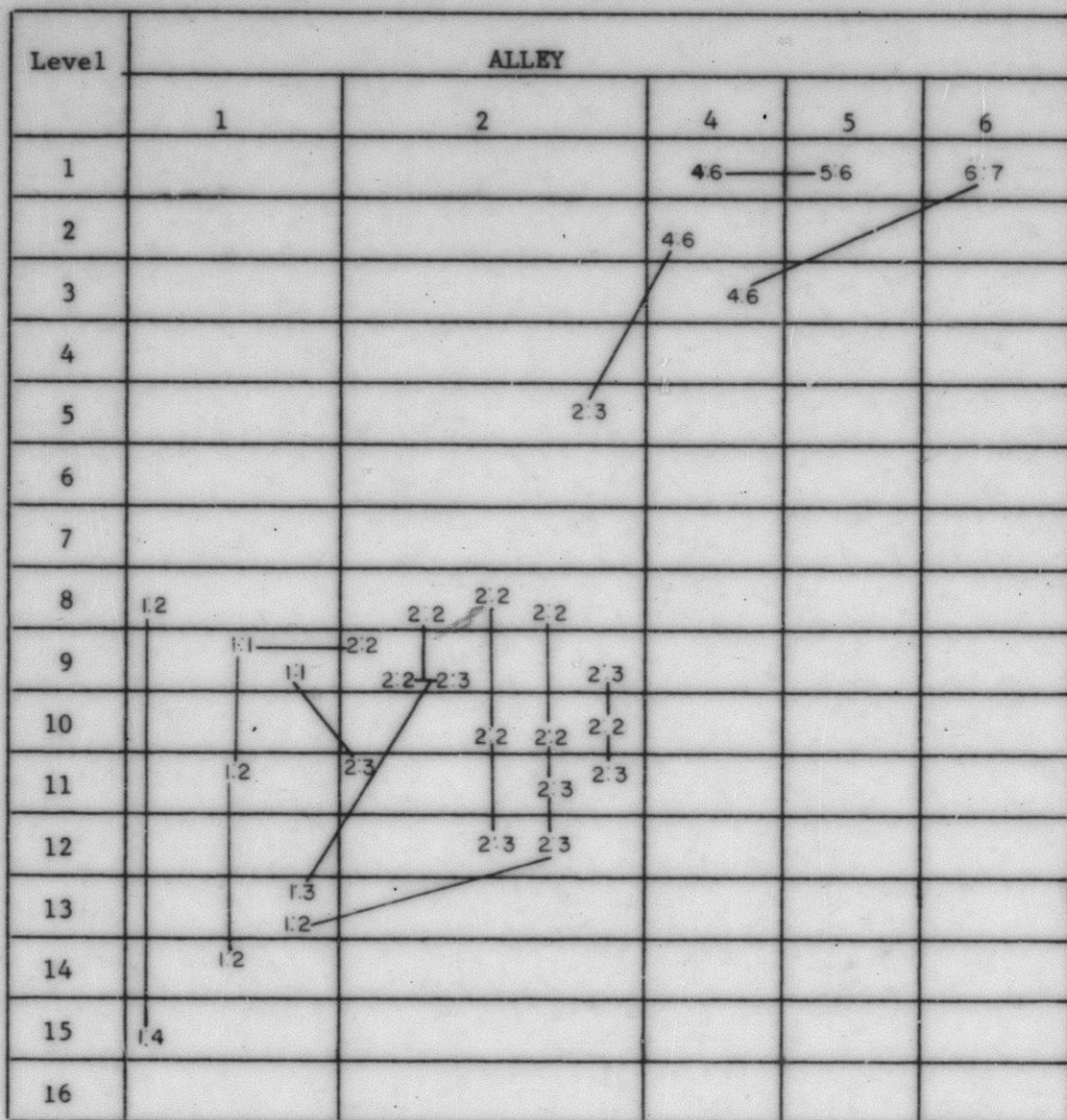
A measure of the extent of disturbance at the site can be obtained through an examination of the location of additional fragments of skeletal material found at the site. Table 4 in Mr. Elkins' report indicates that fragments of the burial were present in Squares 0:1, 1:2, 1:3 and 2:2 at depths ranging between Level 1 (0-4") and Level 16 (60-64"). These are contiguous squares which all could have been disturbed by the pit previously mentioned. Undoubtedly Square 2:3 was also disturbed since part of the burial must have been in this square. It would appear that the pit was dug through part of the burial and the bones broken and scattered. When the pit was refilled, the bones were distributed to the positions indicated by Table 4 of the Appendix.

Another indication of disturbance can be seen by the location of sherds from the same vessel and knife fragments glued together after excavation. Normally matching fragments are not more than 4 to 8" apart vertically. Chart 1, a representation of the location of matching fragments, reinforces the conclusion that Squares 1:2 and 2:3 are disturbed. The fact that a sherd from Square 1:4, Level 15 matches one from Square 1:2, Level 8 may be due to the disturbance in Square 1:2 or may indicate that Square 1:4 was also disturbed.

Since the limits of the disturbance could not be determined in the field and can only be guessed at at this time, most of the stratigraphy at the site can not be relied on to give much information about the sequence of the occupation of the cave.

CHART 1

Provenience of Matching Artifact Fragments at D1-30





## ARTIFACT DESCRIPTION

### Projectile Points

There are seventy-two projectile points among the artifacts from the site. Of this number twenty-nine are fragments of tips or blades and five are unclassified. The provenience measurements in millimeters, and color of chert of all points are recorded along with the description of the shape of the points.

### Gary Points

The points are classified according to the description of Krieger, Suhm and Jelks in the Introductory Handbook of Texas Archeology (1954: 430) and the later division of Gary into three varieties on the basis of a sample from sites in Delaware County, Oklahoma (Baerreis, Freeman and Wright, 1958: 65-69).

### Gary A, Figure 2

Points of this variety have a stem that contracts gradually from the shoulder to a rounded (# 78, Figure 2, a) or a pointed (# 14, Figure 2, b) base. The first point varies from the usual Gary A point in that the shoulders are asymmetrical. While one shoulder is distinct, the other is formed only by a slight change in curvature as the stem contracts from the blade. The blade on this point is recurved.

Both the points are made of chert and were formed by percussion flaking. The percussion flake scars are obliterated by pressure flake scars on the remaining blade edges of # 14 and only along portions of the blade and stem edges of # 72.

# 72 was found in Square 8:7, Level 1, and # 14 in Square 0:1, Level 9.

Individual Point Traits



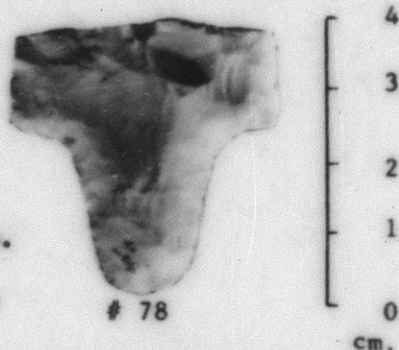
	<u># 72</u>	<u># 14</u>
<u>Maximum Length</u>	98	-
<u>Maximum Width</u>	33	25
<u>Stem Length</u>	23	16
<u>Stem Width</u>	22	-
<u>Thickness</u>	10	6
<u>Chert Color</u>	pink	mottled grey
<u>Weight</u>	27.1 grams	

Figure 2. Gary A projectile points

Gary B

The remaining portion of the blade and stem of the single Gary B point from the site is more carefully finished than either of the two Gary A points. While some of the percussion flake scars remain on the faces of the point, the edges exhibit symmetrically placed pressure flake scars.

The shoulders of the point are nearly horizontal and the stem contracts to a rounded base. The point, found in Square 0:4, Level 13, is 35 mm. wide; the stem is 20 mm. long and 19 mm. wide. The chert from which the point was made is white.



Gary B projectile point

Langtry Points

As is true of the Gary points, a description of Langtry points can be found in Krieger, Suhm, and Jelks (1954: 438). The modification of their type used here coincides with that presented by Baerreis, Freeman, and Wright (1958: 69-71).

Langtry A, Figure 3

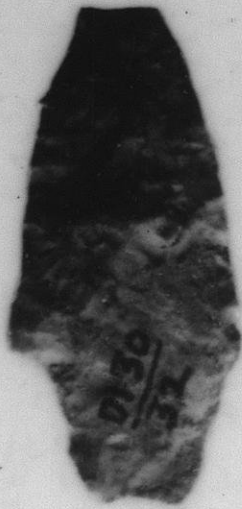
The Langtry A variety is characterized by a stem that contracts gradually from the blade to a straight or concave base. Of the four points from the site, # 14 (Figure 3, c) has a shoulder which looks somewhat like Langtry B. The change in direction between blade and stem is not as abrupt as on Langtry B, so this point must be classified as a borderline case.

The base is concave on three points and straight on two. The blade edges are either concave (one example), straight (one example), or asymmetrical with one edge straight and the other recurved (three examples).

#'s 42 and 14 (Figure 3, b and c) are more carefully made than the other two. The percussion flake scars are more numerous and more symmetrically placed on the former than on the latter. # 152 has a reworked tip and basal and lateral stem grinding.

Dimensions

	<u>f</u>	<u>range</u>	<u>mean</u>
<u>Maximum Length</u>	4	50-94	65.8
<u>Maximum Width</u>	5	23-35	31.2
<u>Stem Length</u>	5	14-21	18.6
<u>Base Width</u>	5	8-15	12.6
<u>Thickness</u>	5	6-11	8.0



a # 32



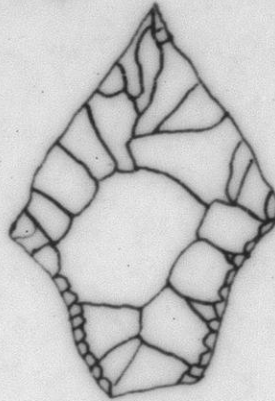
b # 42



c # 14



d # 19



e # 152

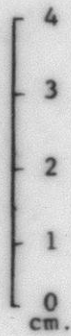


Figure 3. Langtry A projectile points

Individual Point Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Chert Color</u>	<u>Weight</u>
32	4:6	1	-	30	pink	-
42	0:3	10	66	23	tan	7.9 grams
14	0:1	9	94	33	mottled grey	21.6 grams
19	0:1	13	63	35	mottled grey	-
152	0:3	8	50	35	mottled grey	-

Langtry B, Figure 4

Langtry B points possess a distinct shoulder which is either horizontal or obtuse in relation to the stem edge. Both of the Langtry B points from this site have horizontal shoulders. The blade edges are convex on one and straight on the other.

The stem contracts to a straight base on one and a convex base on the other. The convex base makes this point, # 94 (Figure 4, b) look somewhat like a Gary point, but the base is clearly demarcated from the stem. This point is also unusual in that it is smaller than the majority of this variety.

The points are formed by the same methods as Langtry A and correspond to the finer made specimens of that variety. Part of the cortex of the original flake remains on the stem of # 55.

# 94 was found in Square 0:2, Level 14; # 55 in Square 0:3, Level 16.

Individual Point Traits

	<u># 55</u>	<u># 94</u>
<u>Maximum Width</u>	32	24
<u>Stem Length</u>	16	11
<u>Stem Width</u>	25	14
<u>Base Width</u>	17	9
<u>Thickness</u>	7	6
<u>Chert Color</u>	tan	grey

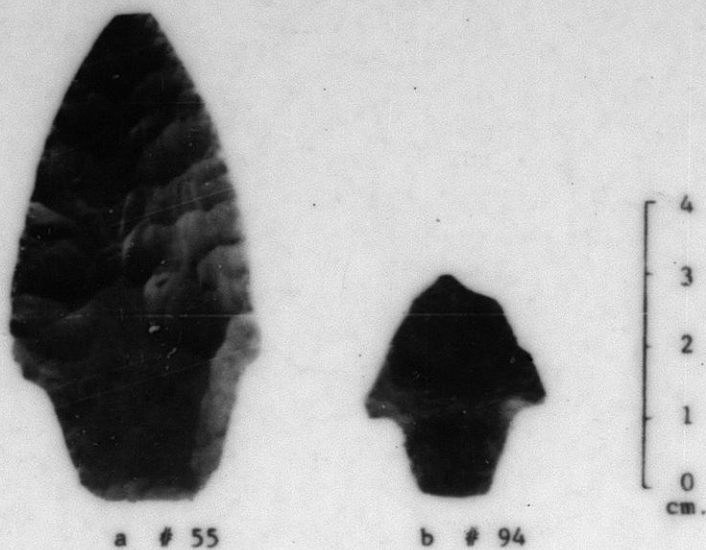
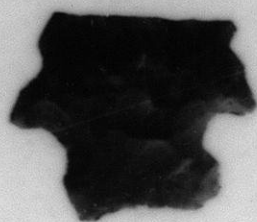


Figure 4. Langtry B projectile points

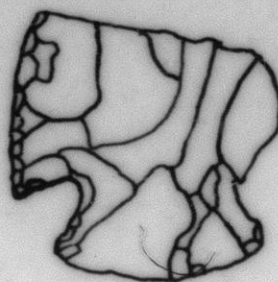
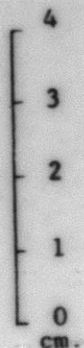
#### Cooper A

Cooper points as defined by Baerreis and Freeman (1959: 31-41) are characterized by notches made diagonally from the base in such a manner as to produce an expanding stem and notches with asymmetrical sides. The A variety of Cooper has a shoulder which is either horizontal or barbed.

One Cooper A point, # 20, from Square 5:7, Level 1, made of tan chert, is broken. The maximum width of the point is 32 mm.; the thickness is 7 mm. The other point, # 132 from Square 4:7, Level 1, is made of grey chert. The measurements are, stem width 20 mm.; stem length 14 mm.; and base width 27 mm. Both points are pressure flaked along the edges.



a # 20



b # 136

Cooper A Projectile Points

Barbed, Figure 5

Four points have pronounced barbed shoulders, produced by notching into the original blank diagonally from the corner of the base. None of the barbs extends to the base. The blades are triangular with straight sides except for # 1 which has convex blade edges, a result of resharpening the point. The stems on all four points expand, and #'s 1 and 55 have rounded base edges. All the points have a minimum amount of pressure retouching along the edges. #'s 1 and 55 are the crudest of the four.

The points have greatest similarity to Baerreis' provisional type B 2 (1951: 17), but the difference in form for the D1-30 points indicates that they belong to several types or else one type with great variation.

Dimensions

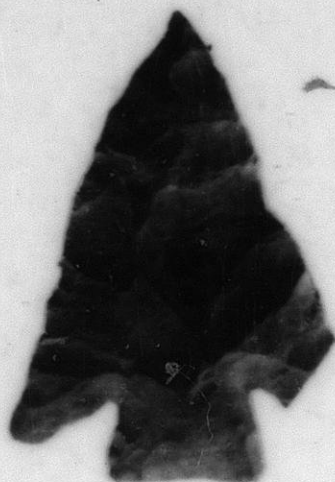
	<u>f</u>	<u>range</u>	<u>mean</u>
<u>Maximum Length</u>	3	42-60	53.0
<u>Maximum Width</u>	2	38-48	43.0
<u>Stem Length</u>	4	10-14	11.0
<u>Stem Width</u>	4	15-19	17.2
<u>Base Width</u>	4	15-21	18.2
<u>Thickness</u>	4	6-8	7.0

Individual Point Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Chert Color</u>
17	0:3	17	-	-	mottled grey
58	0:4	16	60	-	mottled grey
1	0:4	16	42	48	mottled grey
55	0:3	16	57	38	mottled grey



a # 17



b # 58



c # 1



d # 55

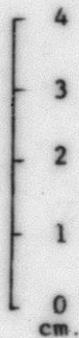


Figure 5. Barbed projectile points



### Afton

Afton points receive their name from the town of Afton, Oklahoma, near where the first finds of this type were recovered from a sulphur spring. Of these points Holmes says, "They are wide and thin, and are characterized by an almost rectangular body, an abrupt triangular point, a wide, square base, and concave lateral margins." (1903: 246). Bell reports that "The stem is relatively short but broad and expanding toward the base. The notches have been cut in from the corner or base to produce large and prominent barbs." (1958: 6).

The Afton point from D1-30 has the typical blade form, barbs, and expanding stem. The blade edges are not as pronouncedly concave as on the specimens illustrated by Holmes and by Bell.

The point is 59 mm. long; the stem length is 9 mm.; stem width 18 mm.; and base width 20 mm. It is made of grey chert and is rather crudely formed by percussion flaking with only a few pressure flakes removed along the edges. The point was found in Square 0:4, Level 18.



Afton projectile point

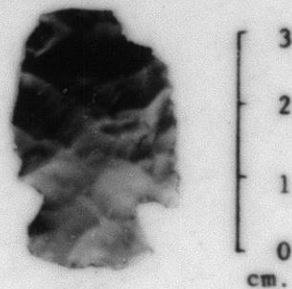
### Ellis

Ellis points are described by Krieger, Suhm and Jelks (1954: 420) as points with a "Short triangular blade with edges straight to convex, occasionally concave. Shoulders prominent to well barbed. Stem expands toward the base but never as broad as shoulders; stem edges tend to be straighter than in most types with cut-out corners. Bases straight to convex". The length of Ellis points is about 3 to 5 cms.; maximum width about 2 to 3 cms.; and stem 1.5 to 2 cms. wide.

The single Ellis point from D1-30, made of white chert, is broken, but enough of the blade remains to classify it as triangular with convex edges. One edge is serrated. The notch, made diagonally from the corner of the blank, produces an expanding stem and a slightly barbed shoulder. The base is convex.

The only measurements that could be taken on the point are: stem length, 8 mm.; stem width, 13 mm.; and base width, 16 mm. The length and maximum width of the point probably do not exceed the range of Ellis points as recorded in the Texas Handbook.

The point was found in the original test pit dug at the site.



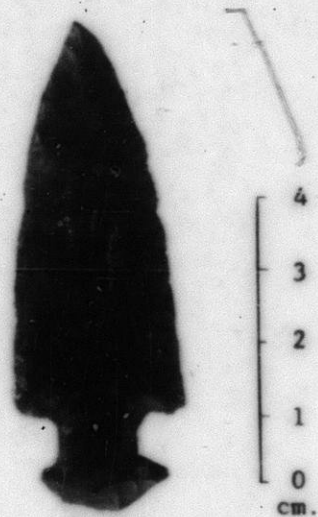
# 54

Ellis projectile point

#### Cupp

Cupp points as described by Baerreis and Freeman (1959: 52-53) have long, narrow blades, sometimes serrated, and a short bulbous stem. The Cupp point from D1-30 has a somewhat convex base rather than the typical bulb stem but still falls within the range of the type. The blade edges are convex.

The point, of mottled grey chert, is 64 mm. long, 23 mm. wide, and has a stem length of 13 mm. It was found in Square 0:2, Level 8.



# 39

Cupp projectile point

#### Table Rock Stemmed

Table Rock Stemmed is a type defined by Bray (1956: 127-128). These points are characterized by a straight sided to slightly expanding stem, pronounced gently rounded shoulders, and straight to convex blade edges. The base, stem sides, and sometimes the shoulder area are ground.

The point of this type from D1-30 has the characteristic form as far as can be determined. Unfortunately the edges of the base are broken. Lateral stem grinding is weak and continues to the shoulder on one side. The point is made of grey chert.

The point was found in Square 0:3, Level 16. It is 28 mm. wide at the shoulder. The stem is 10 mm. long and 12 mm. wide.

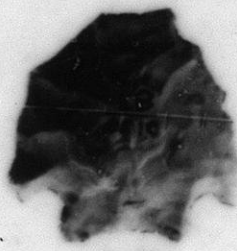


# 55

Table Rock Stemmed  
projectile point

#### Unclassified

One point remains unclassified. # 83, from Square 0:3, Level 16, has a concave base, expanding stem, is corner notched and barbed. It is made of white chert.



# 83

Unclassified projectile point

#### Point Fragments, Figures 6 and 7

Fourteen of the point fragments, Figure 6, a - n, are tips of points. # 21, f, is large enough to suggest that it may have been a knife rather than a point.

#'s 1 and 8, Figure 7, e and f, retain long barbs on the blade. # 20, i, is one of the Langtry varieties, but the broken shoulder prohibits exact identification. #'s 47 and 20, j and k, are contracting stem points.



a # 1  
Square 0:4, Level 16



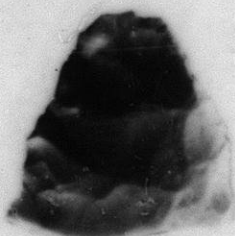
b # 31  
Square 1:3, Level 16



c # 1  
Square 0:4, Level 16



d # 60  
Square 1:4, Level 9



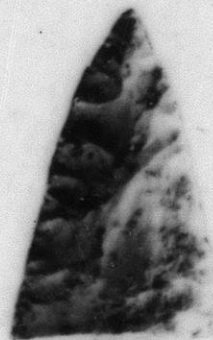
e # 8  
Square 0:1, Level 5



f # 21  
Square 0:2, Level 7



g # 19  
Square 0:1, Level 13



h # 76  
Square 1:4, Level 13



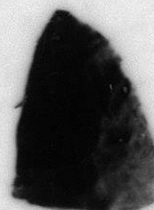
i # 66  
Square 0:3, Level 7



j # 61  
Square 0:3, Level 14



k # 58  
Square 0:4, Level 16



l # 9  
Square 1:5, Level 5



m # 22  
Square 2:3, Level 8



n # 94  
Square 0:2, Level 14

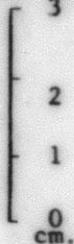


Figure 6. Projectile Point Fragments

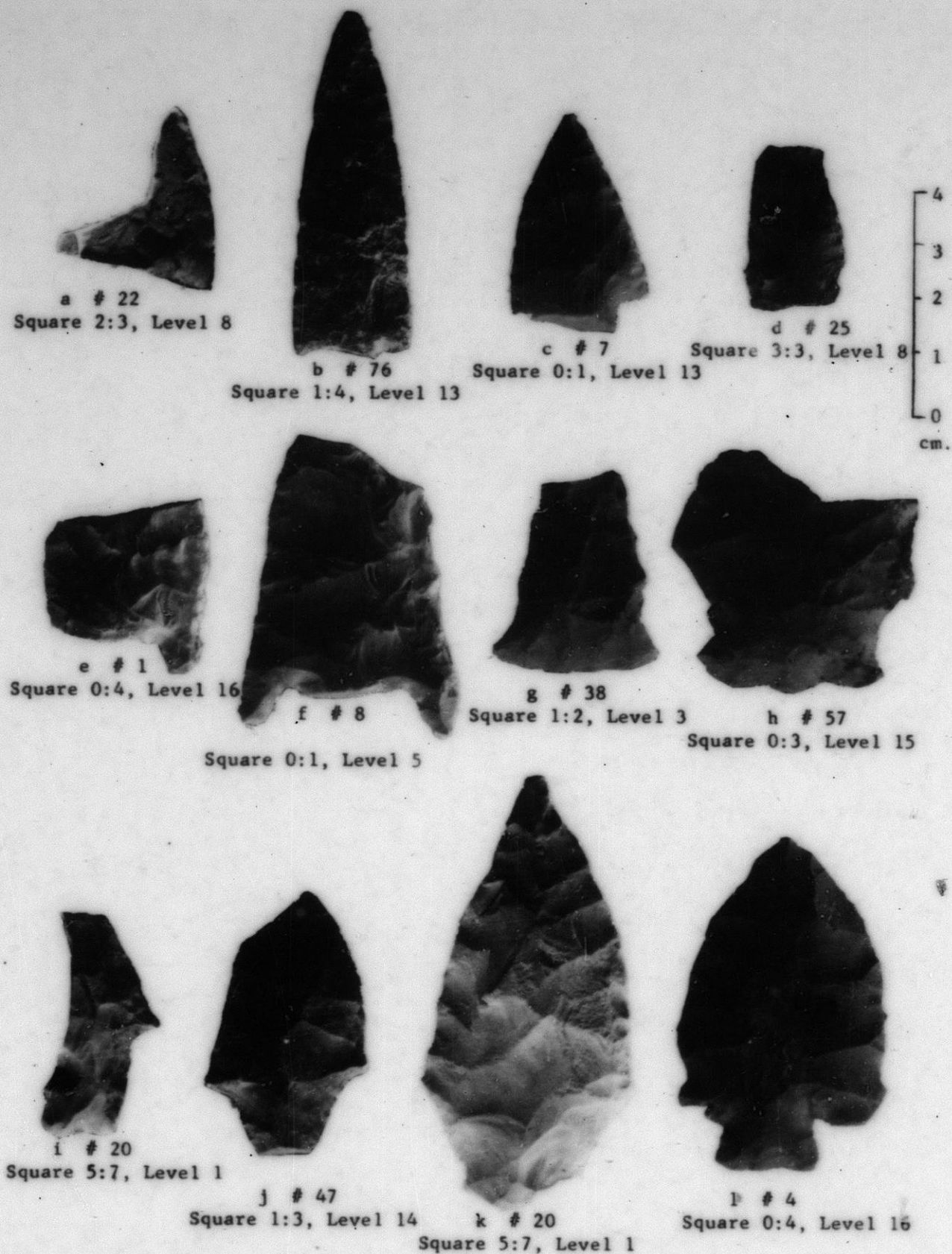


Figure 7. Projectile Point Fragments

Small Projectile Points

In keeping with the terminology and classification set up by Baerreis (1954), the small projectile points are classified as simple triangular, lanceolate triangular, and side notched triangular. These small points are all made from flakes of chert and have been entirely flaked by pressure methods.

Simple Triangular, Figure 8

These seven points, all with the tips missing, have either straight or concave bases and straight sides. The maximum width of these triangular points is at the base.

The thickness of the seven specimens ranges from 2 to 4 mm., averaging 3.3 mm. The maximum width of the six unbroken specimens ranges from 13 to 19 mm., averaging 15 mm.

Individual Point Provenience

#	Square	Level	Chert Color
20	5:7	1	white
25	3:3	8	pink
33	1:1	10	grey
46	0:2	5	grey
145	2:2	10	grey
148	1:3	13	grey
138	2:2	7	pink

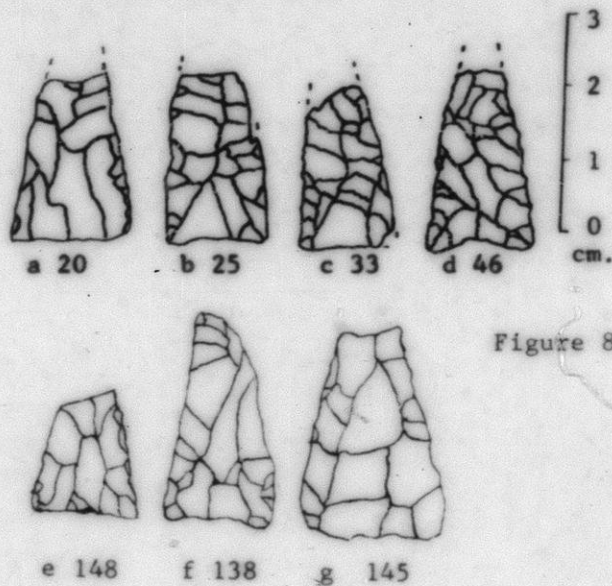
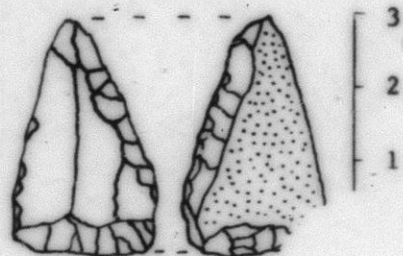


Figure 8

# 66 is apparently an unfinished triangular point. One face and only one edge and the base on the other face have been flaked. The point, made of grey chert, is 19 mm. wide. It was found in Square 0:3 at Level 7.



66

Unfinished triangular point

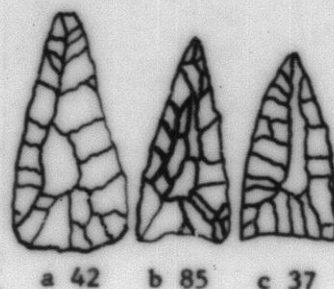
Lanceolate Triangular, Figure 9

These points have a triangular outline, but in contrast to the simple triangular points, the edges are sufficiently convex to place the maximum width of the blade above the base. One point, (# 42, Figure 9, a) has a straight base while the others have a concave base.

Two points retain the original flake curvature and part of the original flake scar on one face (#'s 42 and 67).

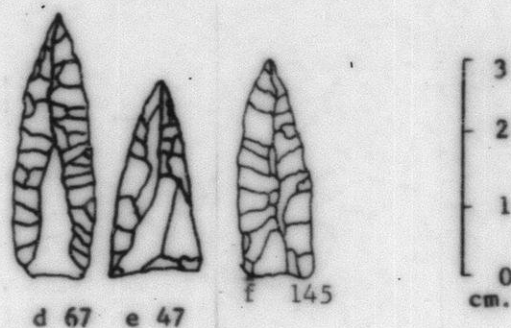
Dimensions

	<u>f</u>	<u>range</u>	<u>mean</u>
<u>Maximum Length</u>	5	25-36	29.4
<u>Maximum Width</u>	6	10-15	12.0
<u>Thickness</u>	6	3-4	3.3



Individual Point Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>
42	0:3	10	white
85	0:2	4	white
37	4:6	2	grey
67	0:1	4	grey
47	1:3	14	pink
145	2:2	10	tan

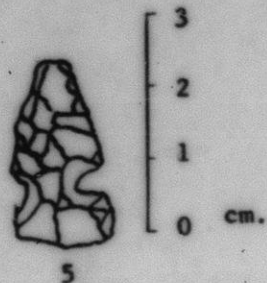


**Figure 9**  
Lanceolate Triangular Projectile Points

Side Notched Triangular

The triangular point which is notched at the side would be classified as variety 2 of this form. Here "the side of the point below the notch shows a change in direction, either being straight (parallel sided) or contracting." (Baerreis, 1954: 44). The point from D1-30 has sides which contract slightly below the notch, making this section of the blade somewhat curved.

The sides above the notch are straight. The base is broken as is one shoulder. The point, of grey chert, was found in Square 1:4, Level 12.



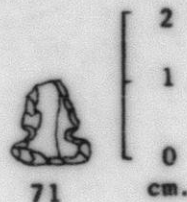
Side Notched projectile point

Reed Notched

These points are defined by Baerreis (1954: 44) as side notched points which in contrast to the above form of side notched point, have notches set into the blade at a point near the base so that the section below the notch does not exceed 3 mm. in length. The side below the notch is more often rounded than square.

On the point of this type from the site, the blade above the notch is narrower than on the type specimens from the Reed site. This may be due to resharpening the tip of this specimen.

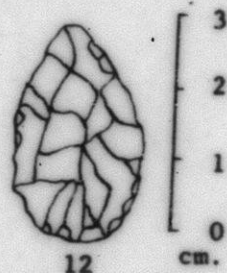
The area below the notch is 3 mm. long; the width of the base, 10 mm. The blade above the notch is 8 mm. wide. The chert from which the point was made is grey. This point was found in Square 1:3 at Level 4.



Reed Notched

Small Lanceolate

The small lanceolate shaped point has convex sides that merge gradually with a convex base. The point, made of pink chert exhibits secondary flaking over all surfaces except part of one face where the original flake scar remains unretouched. The point is 30 mm. long, 17 mm. wide, and 5 mm. thick and was found in Square 0:4, Level 6.



Small Lanceolate

Small Serrated Point

One point from D1-30 has a triangular blade with straight serrated edges. It is notched from the side and has a rounded almost bulbous stem. A similar point is described by Baerreis and Freeman (1959: 80).



Dimensions

<u>Maximum Length</u>	31
<u>Maximum Width</u>	11
<u>Stem Length</u>	6
<u>Thickness</u>	4
<u>Chert Color</u>	white

Location: Square 1:2, Level 13



59  
Small Serrated point

Unclassified and Fragmentary Small Points, Figure 10

Two unclassified points are both side notched near the base and have convex blade edges above and below the notch. # 70, Figure 10, a, is 13 mm. wide at the shoulder and 9 mm. wide at the base. It is 5 mm. thick. The point, made of white chert, was found in Square 0:1, Level 14.

# 45 is 15 mm. wide and 4 mm. thick. This point is from Square 6:7, Level 1, and is of grey chert.

# 149 from Square 0:3, Level 3, is also side notched near the base. The point, made of grey chert, is 19 mm. long and 4 mm. thick.

Another unclassified point, # 39 (Figure 10, d) has serrated blade edges and a short expanding stem with a convex base. It is made of grey chert and was found in Square 0:2, Level 8.

Three point fragments consist of a blade tip, # 77 (Figure 10, e), and two complete blades, #'s 6 and 67. These latter fragments have portions of stems remaining, and # 67 has serrated blade edges.

Point Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>
77	2:2	1	pink
6	0:3	16	grey
67	0:1	4	grey

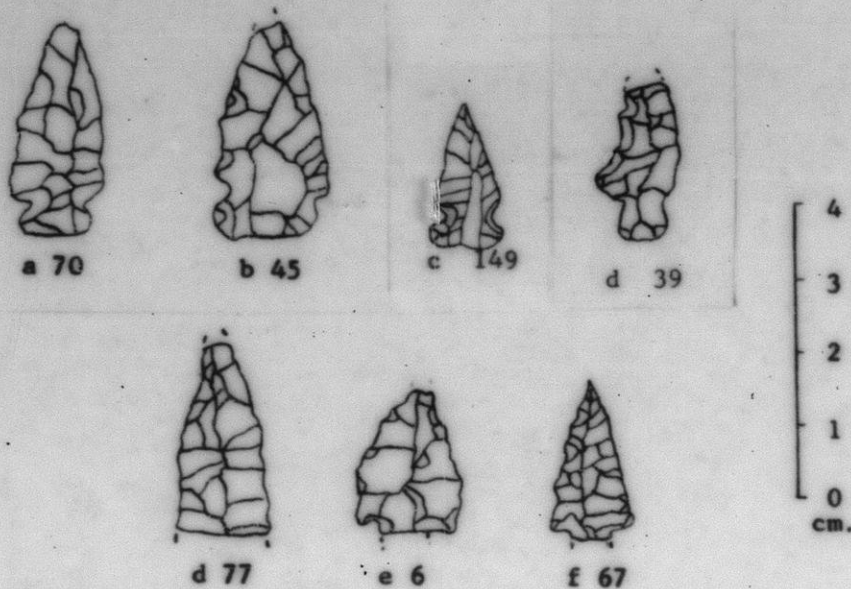


Figure 10. Unclassified and Fragmentary Small Projectile Points

#### KNIVES

The knives are classified according to shape, size, and flaking techniques as originally described by Baerreis (1951) and in keeping with other reports on Delaware County sites. This has been done in order to facilitate inter-site comparisons. The shape characteristics are described under each knife category. The size distinction is an arbitrary one with those knives measuring 50 mm. and under in length classified as small; those 50 to 80 mm. as medium; and those above 80 mm. as large. All the knives are made of chert and were formed by percussion flaking techniques. All edges or a portion of them are finished by pressure flaking.

##### Large Ovate Acuminate

Ovate acuminate knives have an ovate outline with a sharp pointed tip. The one large specimen from the site is made of mottled grey chert and was found in Square 0:4, Level 5 (Figure 11, a). The knife which is 104 mm. long, 8 mm. thick, and 27 mm. wide, is narrower than most knives of this shape.

Small Ovate Acuminate, Figure 11, b

The small ovate acuminate knife was found in Square 0:4, Level 18 and is made of mottled grey chert. It measures 50 mm. in length, 20 mm. in width and 7 mm. in thickness.

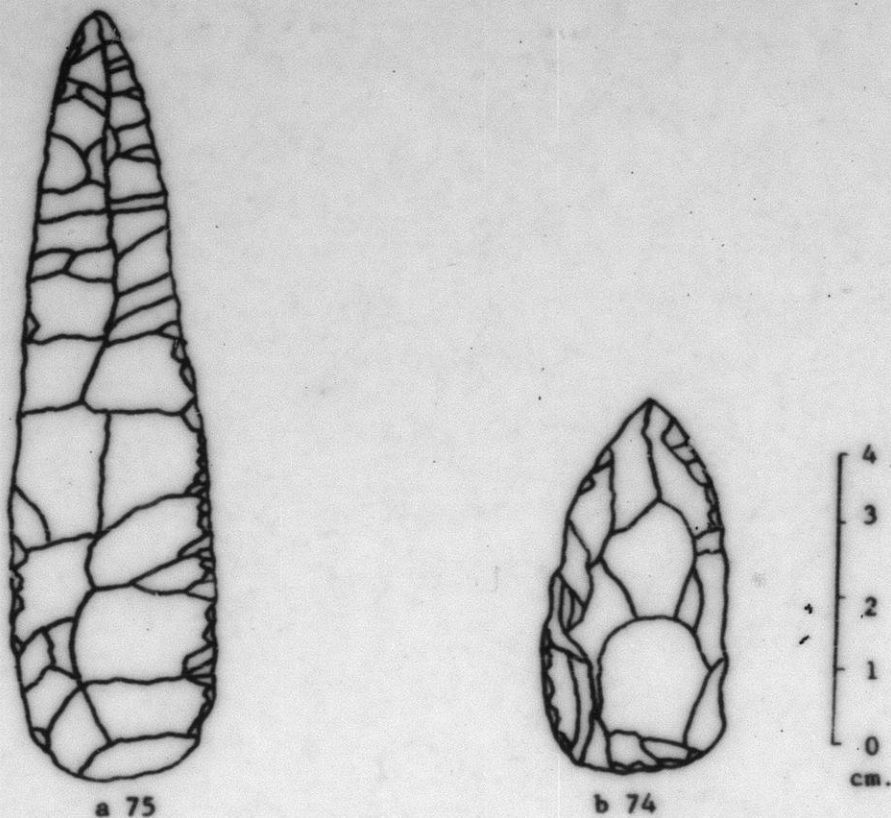


Figure 11

Ovate Acuminate Knives

Large Ovate Knives, Figure 12, a - b

These knives have an ovate outline which at times can approach an ellipse.

Only along portions of the edges of the two large knives do pressure flake scars obliterate the primary percussion flaking. One knife, # 83 (Figure 12, a) has close to an elliptical outline while the other conforms more exactly to an ovate outline.

Knife Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert Color</u>
83	0:3	16	93	48	10	white
51	0:2	17	96	47	11	mottled grey

Medium Ovate Knives, Figure 12, c - d

One of these knives, # 36 (Figure 12, d) has been retouched only along one edge while the other exhibits complete retouching.

Knife Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert Color</u>
68	0:2	6	63	35	9	grey-pink
36	1:3	7	55	41	10	mottled grey

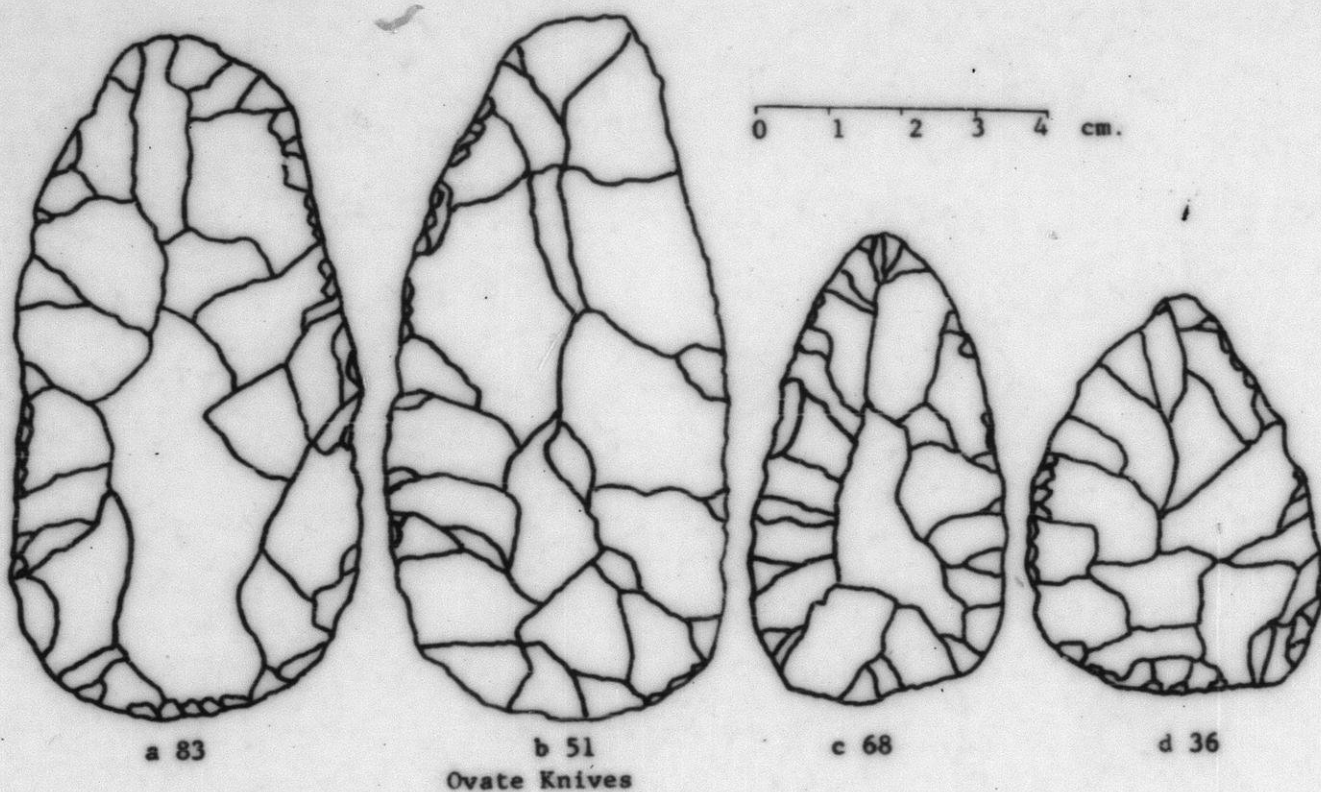


Figure 12

Medium, Distinct Base Knives, Figure 13, a - b

One knife of this category, # 44, Figure 13, a, has a triangular outline with a convex base and convex sides. Since the base of the knife is clearly demarcated from the blade proper, this knife, and the others in this category, cannot be placed in the ovate acuminate category. # 44, made of grey chert, is 76 mm. long, 31 mm. wide, and 9 mm. thick. It was found in Square 0:4, Level 7.

The other knife, of mottled grey chert, has convex sides and a straight base. # 26 was found in Square 4:6, Level 4. It measures 64 mm. in length, 21 mm. in width, and 6 mm. in thickness.

Small, Distinct Base Knives, Figure 13, c - d

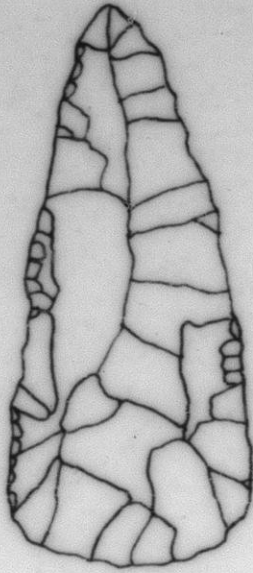
These two knives have convex sides and straight bases. As is true of all knives classified as small, these two may have functioned as projectile points. However, their length falls outside the range of the length of simple triangular and lanceolate triangular points. # 34, Figure 13, d, retains the original flake curvature and is flaked only along the edges.

Knife Provenience and Associated Traits

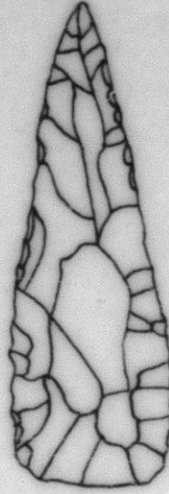
<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert Color</u>
35	1:3	9	42	21	7	white
34	1:3	11	40	20	6	white

Knife Fragments, Figure 14

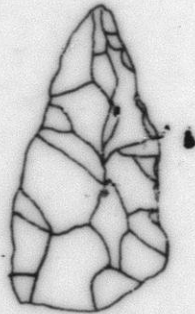
Of the eleven knife fragments, two, (#'s 29 and 42) have only small portions of the base broken off, but this prevents classification. One blade fragment, #'s 37 and 82 (the dual numbers represent fragments glued together) is unusual in that the blade is asymmetrical. One edge is markedly convex at the tip while the other is straight. The other knives are tip or rounded base fragments. # 122, a rounded base fragment is not illustrated.



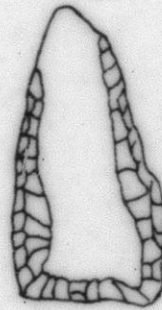
a 44



b 26



c 35



d 34

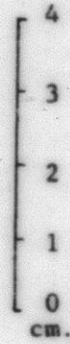


Figure 13

Knives with a Distinct Base

Knife Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>
29	1:2	14	mottled grey
42	0:3	10	white
37	4:6	2	white
82	2:3	5	
61	0:3	14	mottled grey
69	0:2	11	grey-white
83	0:3	16	black
62	1:1	14	pink
50	2:6	5	black
12	0:4	6	pink
15	0:2	15	mottled grey
122	1:4	11	pink

Core Knives, Figure 15

Three complete and two fragmentary knives are classified as core knives because they were shaped entirely by percussion flaking with no retouching along the edges. This is the one characteristic which distinguished core knives from those implements classified as knives. The three complete specimens have an ovate outline.

Knife Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>	<u>Chert Color</u>
81	1:3	17	73	49	11	white
24	4:6	2	55	32	10 -	pink-grey
28	1:1	12	67	30	15	mottled grey
70	0:1	14	-	-	-	pink
43	1:4	15	-	-	-	grey

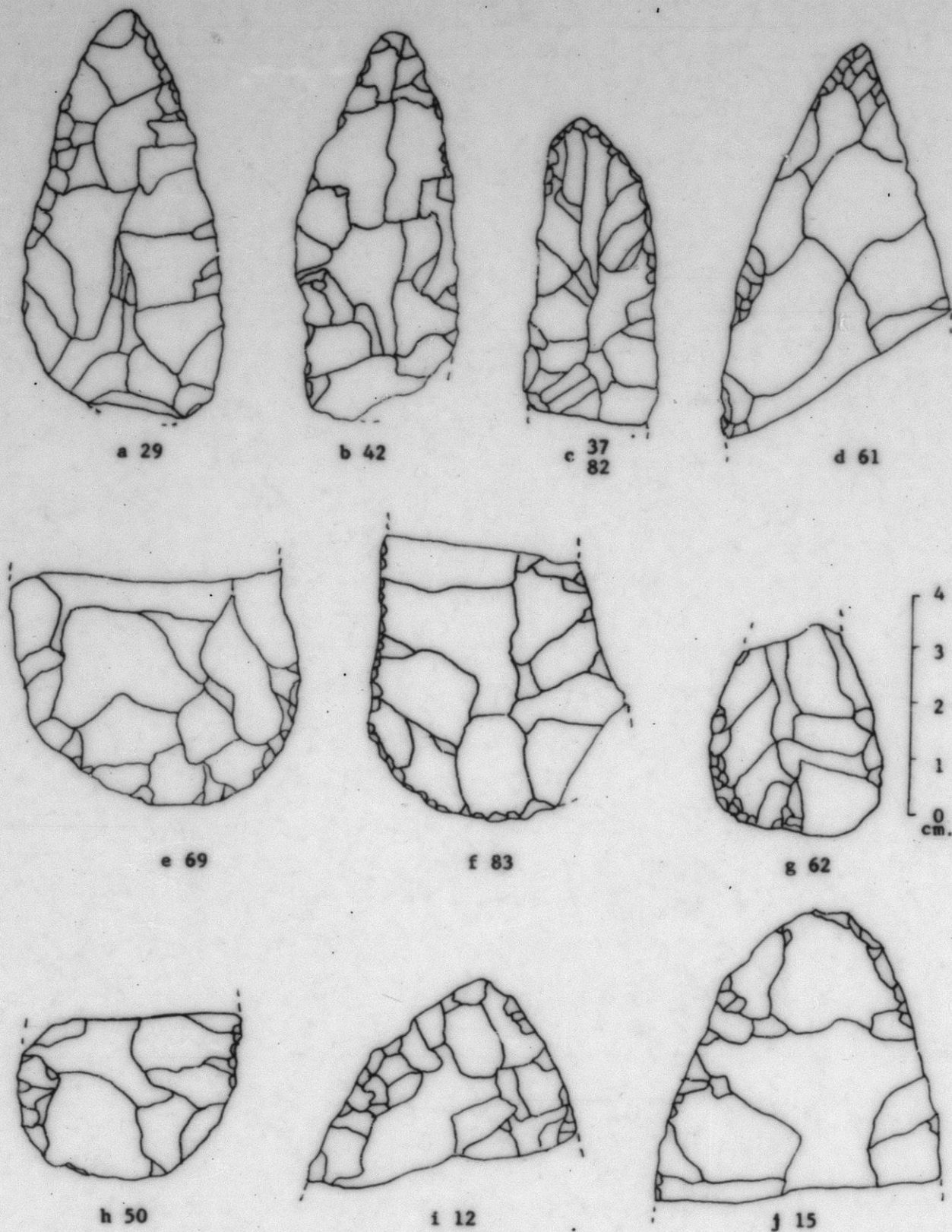
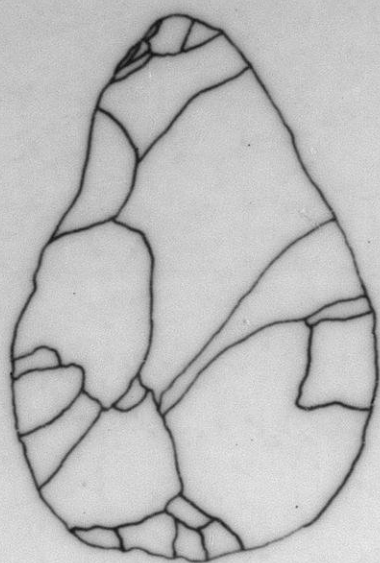
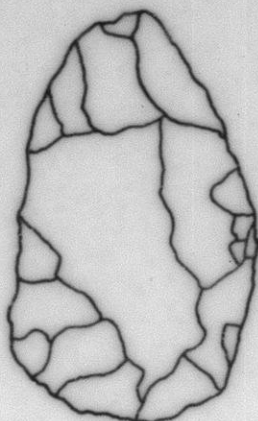


Figure 14  
Knife Fragments

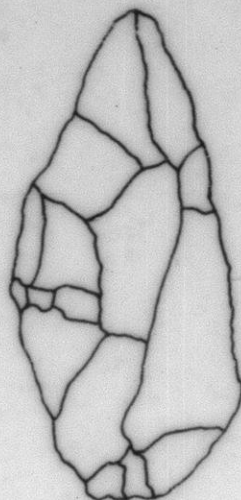




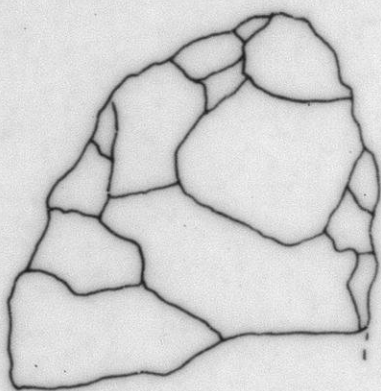
a 81



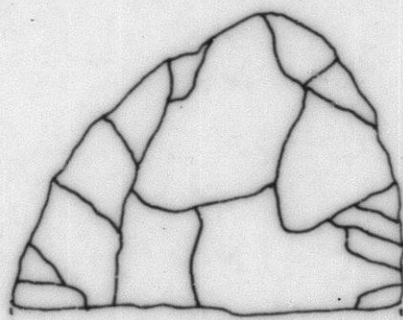
b 24



c 28



d 70



e 43

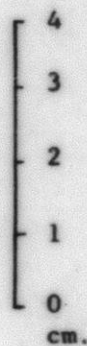
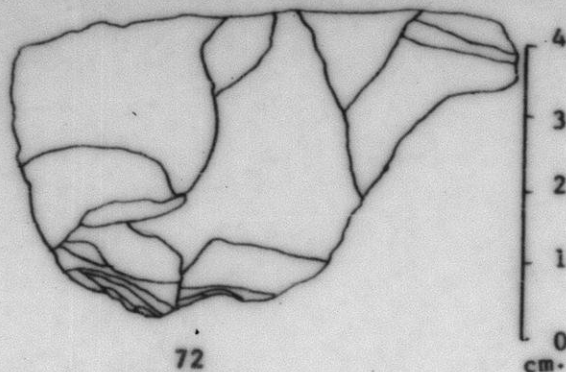


Figure 15  
Core Knives

Core Tool

One roughly shaped implement may have been used as a chopper as evidenced by the presence of numerous small flakes removed at a 90° angle to the edge of the tool. # 27, of white chert, comes from Square 3:4, Level 2. It is bi-facially flaked.



Utilized Flakes, Figure 16

Chert flakes, apparently waste flakes rather than prepared ones, have pressure flake scars along one edge of one face (Figure 16, a - d), along both edges of one face (e - m), or on alternate edges (n - o). These fifteen flakes may have been used in various ways, but the fine pressure flaking produces a sharp edge for cutting. In greatest dimensions these flakes range from 16 to 62 mm., averaging 37.5 mm.

Individual Flake Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>	<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>
43	1:4	15	white	23	3:6	1	white-grey
78	0:4	13	white	13	4:6	3	pink
18	1:1	13	white	47	1:3	14	grey
78	0:4	13	white	80	2:3	7	white
70	0:1	14	grey-pink	84	3:3	5	white
47	1:3	14	grey-pink	11	0:4	8	grey-red
45	6:7	1	white	66	0:3	7	white-grey
81	1:3	17	mottled grey				

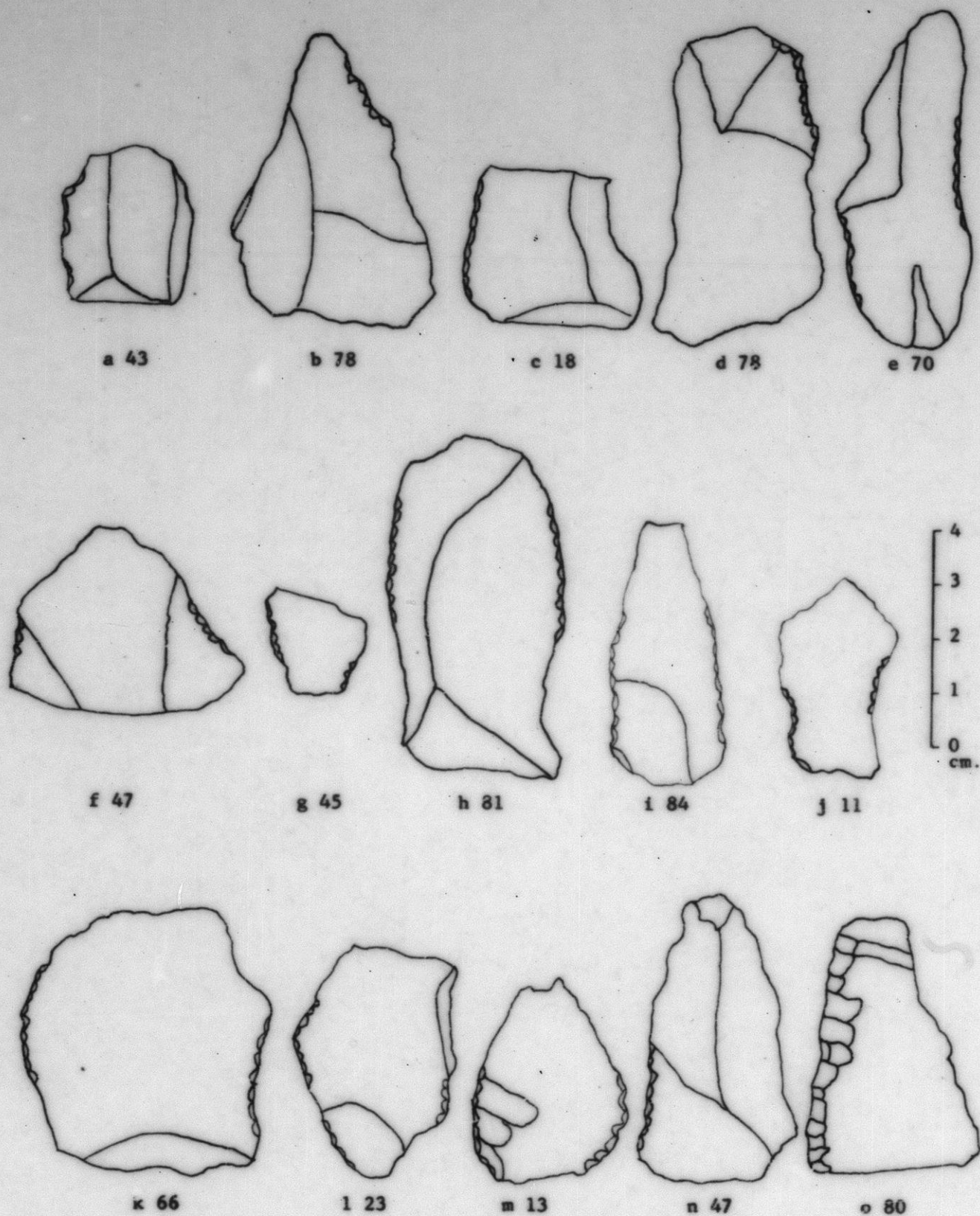


Figure 16  
Utilized Flakes

Implement Fragments, Figure 17

Seven pieces of chert, crudely flaked on both faces with only sporadic retouching along the edges, may have been projectile points in the process of manufacture, rejects, or implements of unknown function.

Specimen Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Chert Color</u>
3	4:6	1	pink-grey
67	0:1	4	tan-red
82	2:3	5	white
53	1:2	15	pink
8	0:1	5	pink
13	4:6	3	white
68	0:2	6	pink

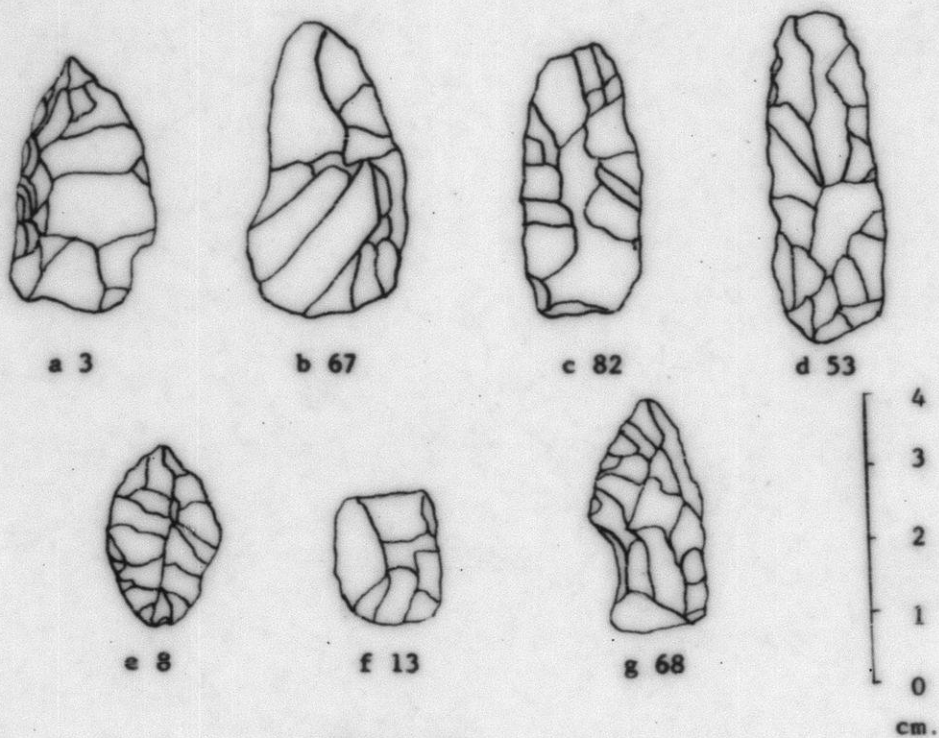


Figure 17

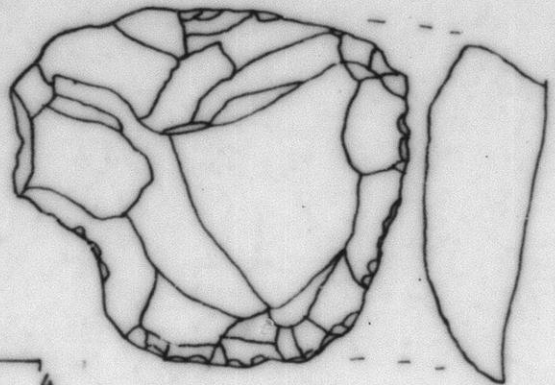
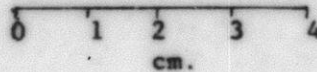
Implement Fragments

### SCRAPERS

Three scrapers, two of which are complete end scrapers were found at the site.

#### Type A - 1

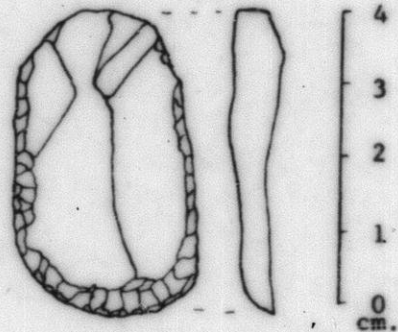
This scraper, # 54, is made from a flake. The ventral surface consists of a single flake scar with the bulb of percussion and the striking platform at the butt end. The dorsal surface is irregular and is flaked only at the steep scraping edge. The scraper, of white chert, is 47 mm. long, 52 mm. wide, and 15 mm. thick. It was found in a test pit dug at the site.



54  
Type A - 1 Scraper

#### Type A - 2

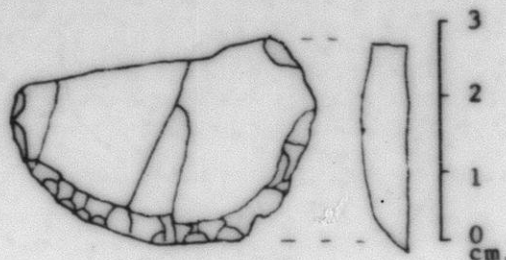
Scraper # 21 was formed from a flake in the same manner as scraper type A - 1. However, the dorsal surface is retouched along all edges and retains two longitudinal flake scars down the center. Apparently this scraper was made from a flake struck from a prepared core. The ventral surface is unretouched. This specimen, of white chert, was found in Square 0:2, Level 7. It is 42 mm. long, 24 mm. wide, and 7 mm. thick.



21  
Type A - 2 Scraper

Scraper Fragment

The butt end of scraper # 33 is broken off. The ventral surface is unretouched and the dorsal surface is retouched at the scraping edge and along the remaining edges. This scraper, found in Square 1:1, Level 10, is of white chert.

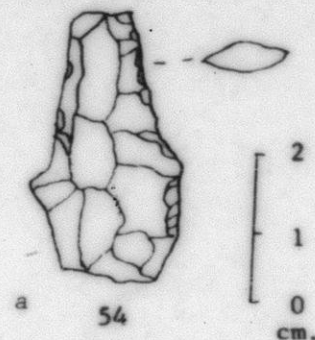


33  
Scraper Fragment

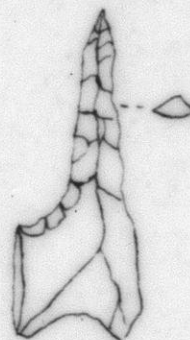
Drills

One drill, # 54, was found in the initial test pit dug at the site. This drill, made of mottled grey chert, was made from a contracting stem projectile point. The entire blade of the point was reworked to form the bi-convex drill shaft, the tip of which is missing. The fragment is 36 mm. long, 21 mm. wide, and 7 mm. thick.

The other drill, # 137 from Square 0:4, Level 12 is also made of mottled grey chert. The shaft of the drill is almost diamond shaped in cross section and expands abruptly to the base which is an unworked flake. The drill is 43 mm. long, the shaft is 26 mm. long.



a 54



b # 137

Harahey Knife

A fragment of a Harahey knife (Brower, 1899: 109), made of grey chert, was found in Square 3:3 at Level 5. The fragment is pressure flaked and exhibits the characteristic alternate beveled blade. It was probably diamond shaped, but little of the original implement remains. It has a left bevel.



84

Harahey Knife Fragment

GROUND STONE IMPLEMENTS

Manos

The manos have been divided into groups on the basis of wear patterns, that is whether one or more faces have been used, and shape. All of the manos were probably used in one hand, their short length outlawing the possibility that they were held with both hands.

Two Faced Manos, Figure 18

Both faces of these four manos have been used and in such a manner that the two faces are parallel.

Two of the manos, #'s 63 and 22, have oval outlines with rounded ends and edges. # 63 is wedge shaped in cross section indicating that grinding with one face involved lifting one edge, causing greater weight and wear on the other edge.

The other two manos, #'s 41 and 64, have sub-rectangular outlines with ends and edges slightly straighter than on the two oval manos. # 64 is a fragment.

All the manos were deliberately shaped before use and have pits in the center of one or both faces.

Dimensions

	<u>f</u>	<u>range</u>	<u>mean</u>
<u>Maximum Length</u>	3	97-132	110.3
<u>Maximum Width</u>	3	82-89	85.3
<u>Thickness</u>	4	35-43	39.5

Specimen Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Material</u>
63	1:4	8	97	85	limestone
22	2:3	8	102	82	sandstone
41	2:2	9	132	89	limestone
64	0:5	7	-	-	sandstone

Mano # 84 (Figure 18, e) is shaped like the two oval two faced manos. However, only one face of this mano has been used. The other face is somewhat irregular due to the fact that it is made of fossiliferous limestone. This mano, found in Square 3:3, Level 5, is 137 mm. long, 102 mm. wide, and 45 mm. thick.

#### One Faced Manos, Figure 19

These manos have been used only on one face, the other face is irregular or convex depending on the original shape of the stone from which the mano was made.

Two manos, #'s 53 and 62, have oval outlines with pecked ends and edges, indicating that the stone was shaped before use. The grinding face is flat and the other face convex. # 62 has a depression in the center of the grinding face.

# 73, Figure 19, c, has a flat grinding face with an irregular opposite face. # 73, Figure 19, d, has an oval outline with shaped ends and edges. The grinding face is convex and the other face irregular.

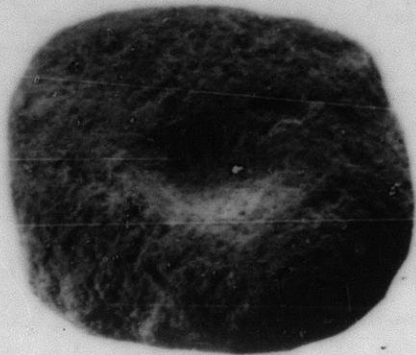
#### Dimensions

	<u>f</u>	<u>range</u>	<u>mean</u>
<u>Maximum Length</u>	3	97-126	108.0
<u>Maximum Width</u>	4	71-91	79.0
<u>Thickness</u>	4	44-56	50.0

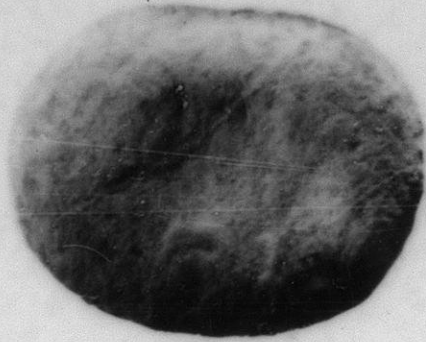
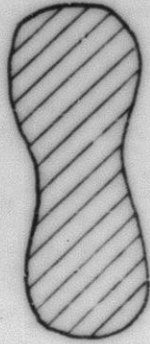
#### Specimen Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Material</u>
53	1:2	15	-	71	sandstone
62	1:1	14	126	72	limestone
73	0:4	17	97	91	sandstone
73	0:4	17	101	82	sandstone

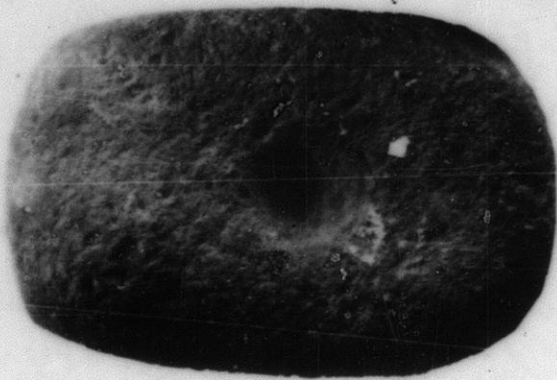
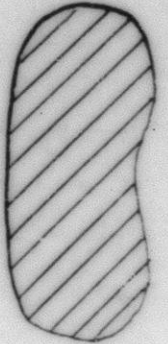




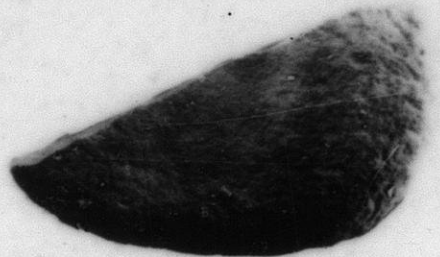
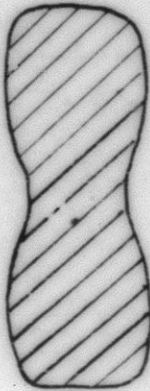
a # 63



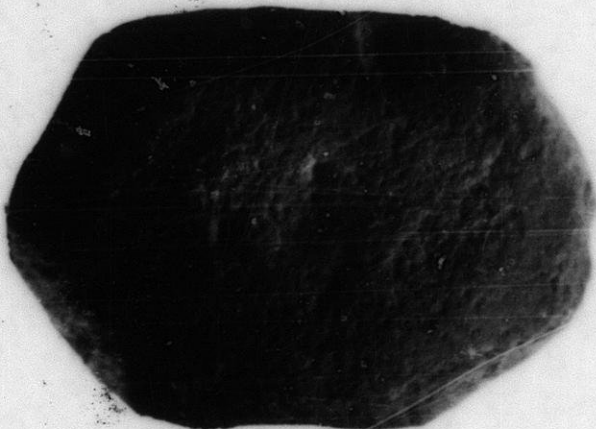
b # 22



c # 41



d # 64



e # 84

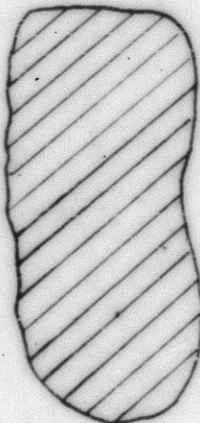


Figure 18. Manos with two opposed grinding faces

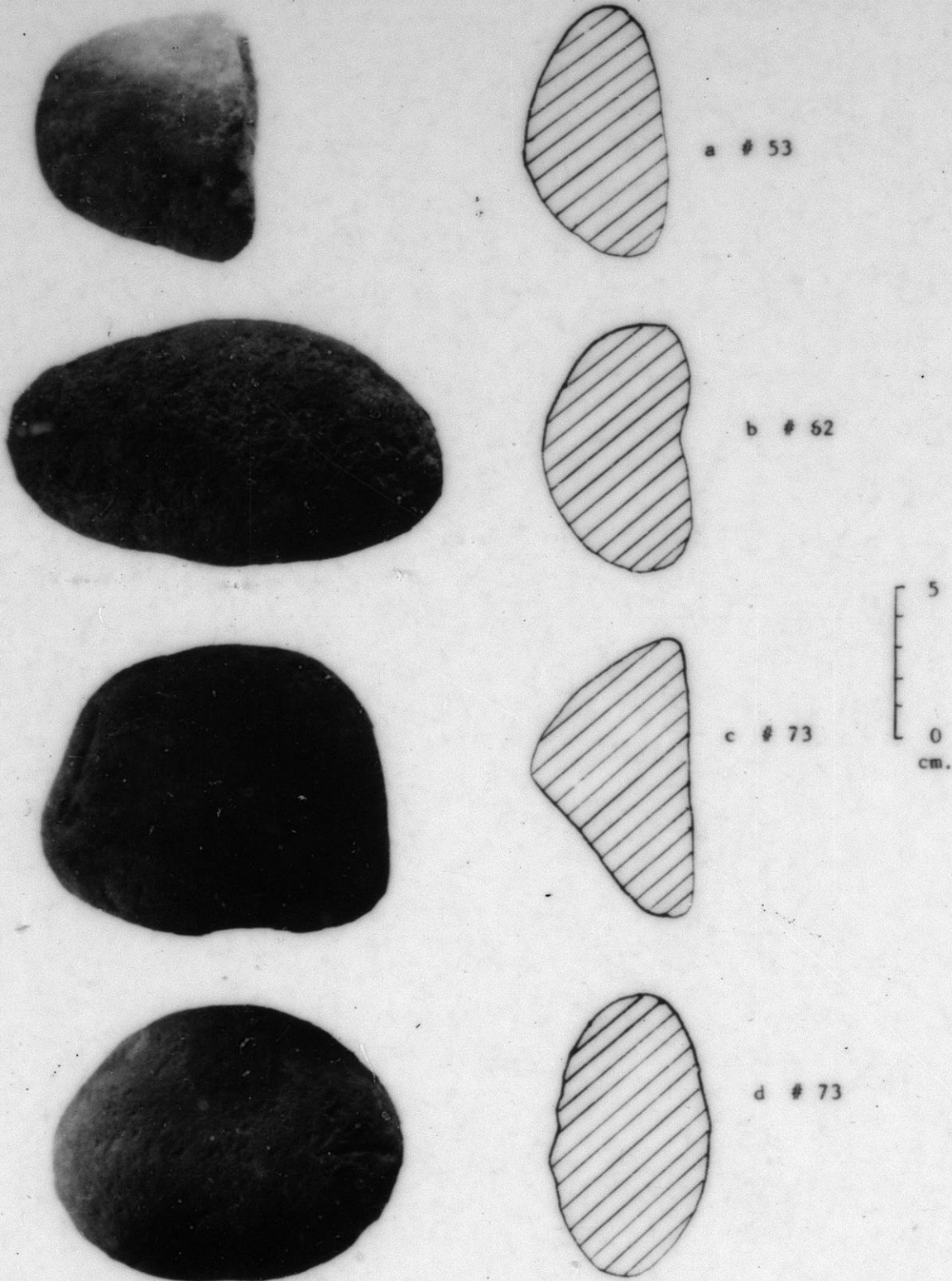
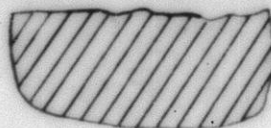
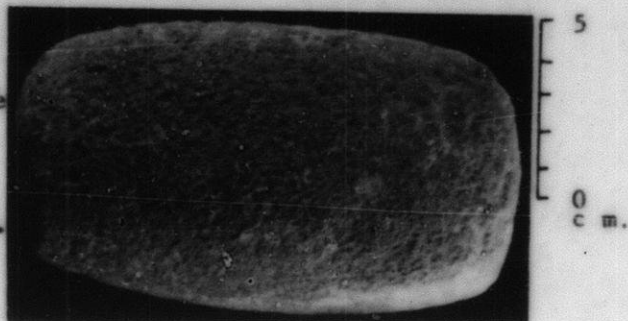


Figure 19. Manos with one grinding face

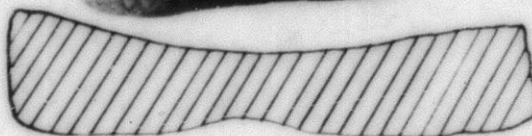
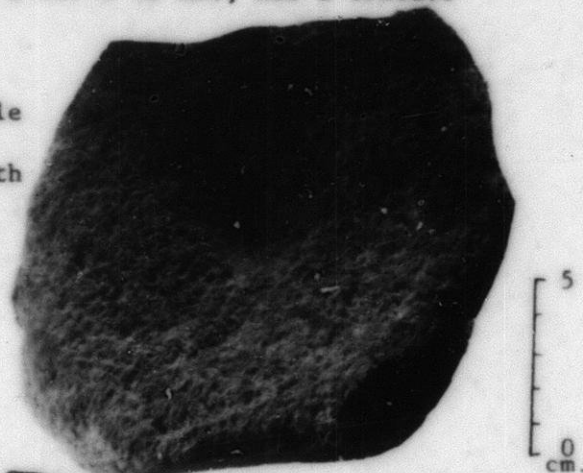
Loaf Shaped - Two Faced Mano

A fragment of a rectangular loaf shaped mano has two opposite grinding faces. The ends of the mano are straight while the edges are rounded. It is square in cross section. The mano was found in Square 1:2, Level 15, and measures 122 mm. long and 70 mm. wide. It is made of limestone.



Metate

An irregular block of limestone, 139 x 117 x 43 mm., has a concave depression covering one entire face and a small depression on the opposite face. While the stone is too small to have been used with any of the manos, the concave face suggests that it is a small grinding basin.



Location: Square 0:4, Level 11.

Hammerstones, Figure 20

Two stones, one a fragment, exhibit hammering facets on the ends. # 2 is a pitted hammerstone which has an oval outline.

Specimen Provenience and Associated Traits

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Width</u>	<u>Thickness</u>
37	4:6	2	110	71	36
2	1:2	8	-	-	38

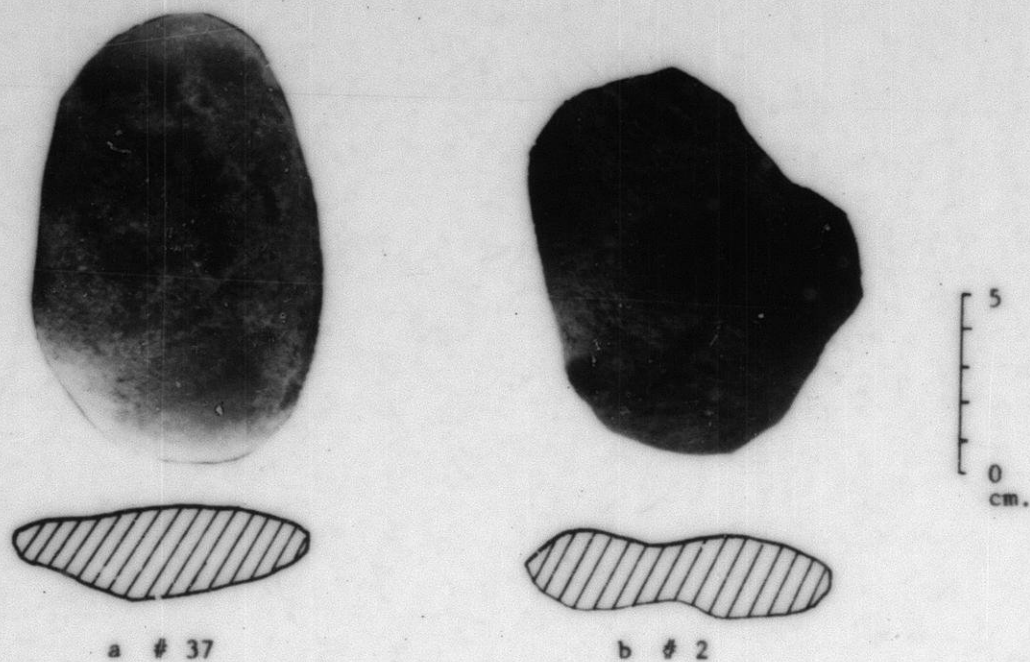
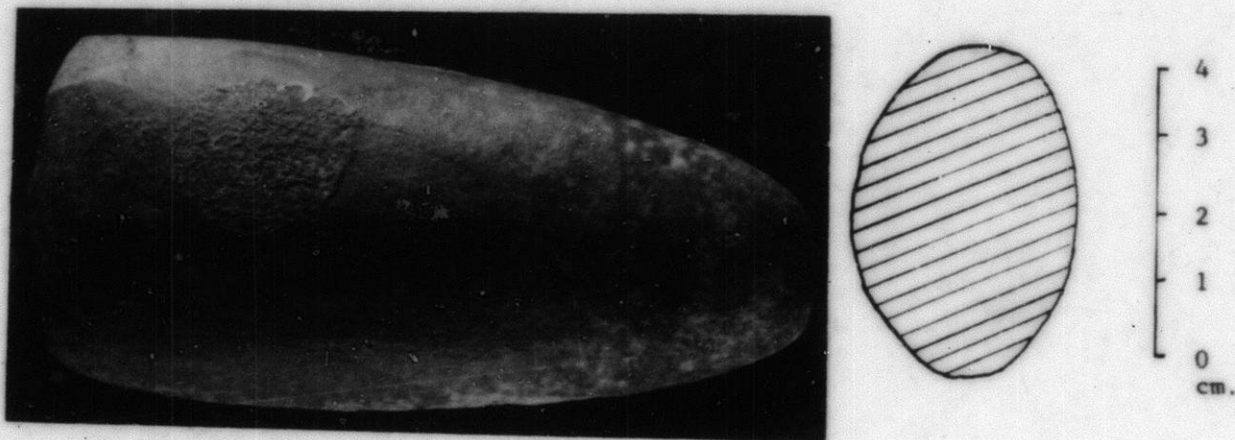


Figure 20. Hammerstones

Celt

The one celt recovered from the site was found in Square 2:3, Level 9. It has a triangular outline with a rounded poll and oval cross section at the poll and mid-section. Part of the bit is broken but enough remains to show that the bit end is beveled.

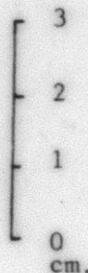
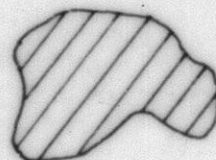


### Hematite

Three small lumps of hematite, 9 to 15 mm. long, are ground and worn. Two of them are extremely soft. The grinding indicates that they were used as a source of red pigment. These specimens were found in the following locations: Square 0:2, Level 7; Square 1:2, Level 8; and Square 0:2, Level 6.

### Shaft Smoother

A piece of sandstone which is plano-convex in cross section, shows use as a shaft smoother and as an abrader, probably for sharpening awls. The groove made by a shaft is on the flat face, is U-shaped in cross section, is straight sided, and extends for the entire length of the stone. Another groove, on an adjacent side, is V-shaped in cross section and tapers to a point. This latter groove indicates use of the stone as an awl sharpener. The specimen is 41 x 29 x 23 mm. and was found in Square 3:6 at Level 3.

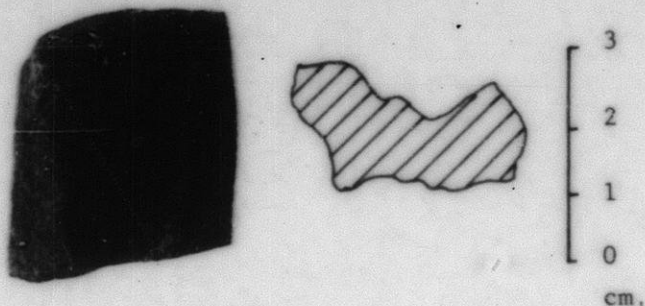


# 151 Shaft Smoother

### Grooved Abraders

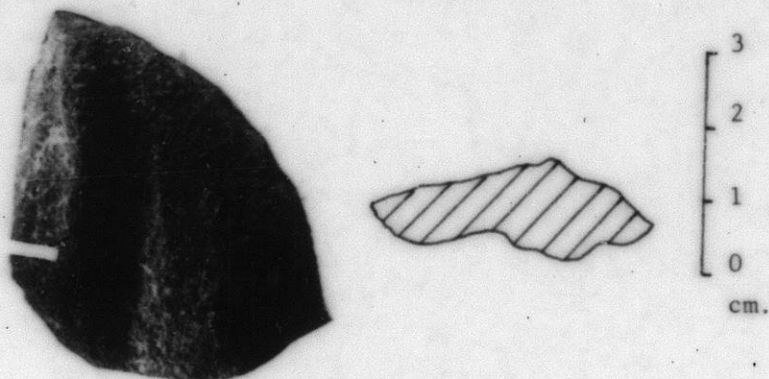
In contrast to the shaft smoother described above, these two implements bear multiple grooves which are all V-shaped in cross section and taper toward one end whether they cover the length of the implement or not. These were used to smooth or sharpen pointed implements, most probably bone awls.

# 153 from Square 2:5, Level 1, made of sandstone, bears three grooves on one face and two on the opposite face. None of these grooves extend the entire length of the implement. A single groove on one side, also V-shaped, does cover the entire side. This abrader measures 33 x 29 x 21 mm.



# 153 Grooved Abrader

# 136 has a single V-shaped groove on one face and a similar groove on an adjacent side. Both grooves come to a point at one end. This abrader which measures 48 x 40 x 19 mm. was found in Square 4:7 in Level 1.



# 136 Grooved Abrader

Shell Implements, Figure 21

Seven valves of mussel shell, used as scrapers, exhibit wear on the ventral border near the posterior end. The wearing down of this border has made the posterior end somewhat pointed. Two of the scrapers, #'s 16 and 138, are made from a left valve, the others from right valves. Three scrapers, #'s 138, 140, and 139, not illustrated and not identified as to species, have the same characteristics as those illustrated.

Specimen Provenience Figure 21, a - d

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Height</u>	<u>Species</u>
2	1:2	8	80	45	<i>Ptychobranchnus faciolarus</i>
16	1:5	4	80	48	" "
23	3:6	1	-	36	" "
24	4:6	2	70	40	" "
138	2:2	7	61	40	-
139	1:2	7	79	48	-
140	2:3	12	85	30	-

Two valves, one a right and the other a left valve, have been drilled from the interior to the exterior near the dorsal edge. The diameter of the hole is 3 mm. on both specimens. Other than this, the shells are not worked. The valves are of the species *Actinonaias carinata* (Barnes).

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>	<u>Height</u>
21	0:2	7	-	-
1	0:4	16	71	47



a # 2



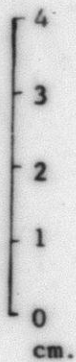
b # 16



c # 23



d # 24



e # 21



f # 1

Figure 21. Shell Implements



## BONE IMPLEMENTS

### Antler Flakers, Figure 22

Six flakers, made from antler tips are 31 to 80 mm. long. Two of the shorter specimens, #'s 36 and 90, have been recently broken at the butt end. On all the flakers the tip is rounded, blunted, or faceted through use. The surface of the flakers is polished although on some the surface is now partially crumbly.

Slightly unusual features are present on #'s 87 and 90, (Figure 22, b and e). The former has had a portion of the antler near the tip thinned by removal of a thin section of antler with a knife. The shaft and tip of # 90 has also been thinned by longitudinally cut grooves on two sides of the antler. One groove extends to the tip while the other extends half way from the butt end to the tip.

### Specimen Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Length</u>
9	1:5	5	76
87	0:5	12	80
46	0:2	5	75
36	1:3	7	35
90	2:2	13	34
70	0:1	14	31

### Worked Antler, Figure 23

One antler fragment, from Square 1:1, Level 13 (Figure 23, a), consists of part of the shaft and has knife marks around the shaft where the tip was cut off in order to make it into an implement. The other antler, (Figure 23, b), a shaft fragment from Square 4:6, also has knife marks around one end where the tip is cut off.

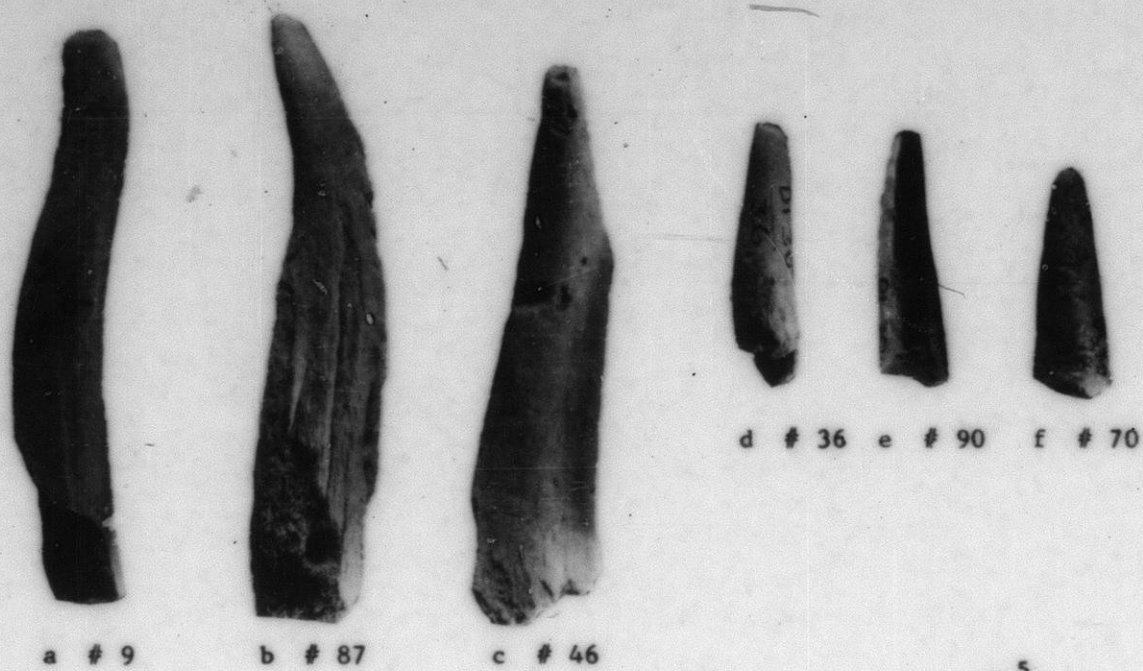


Figure 22. Antler Flakers

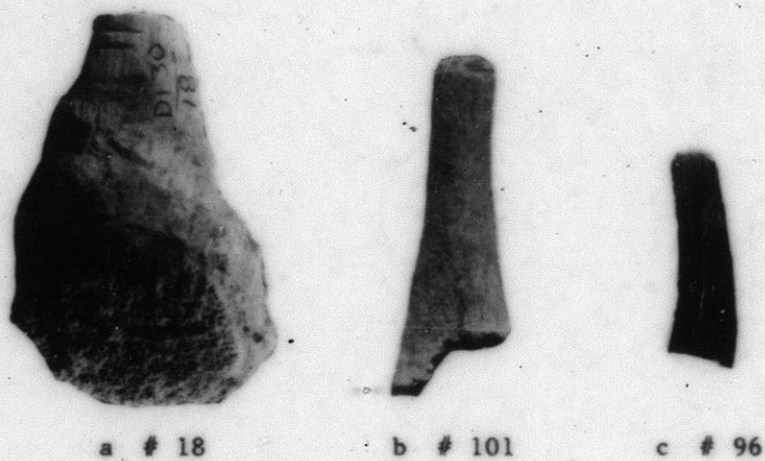


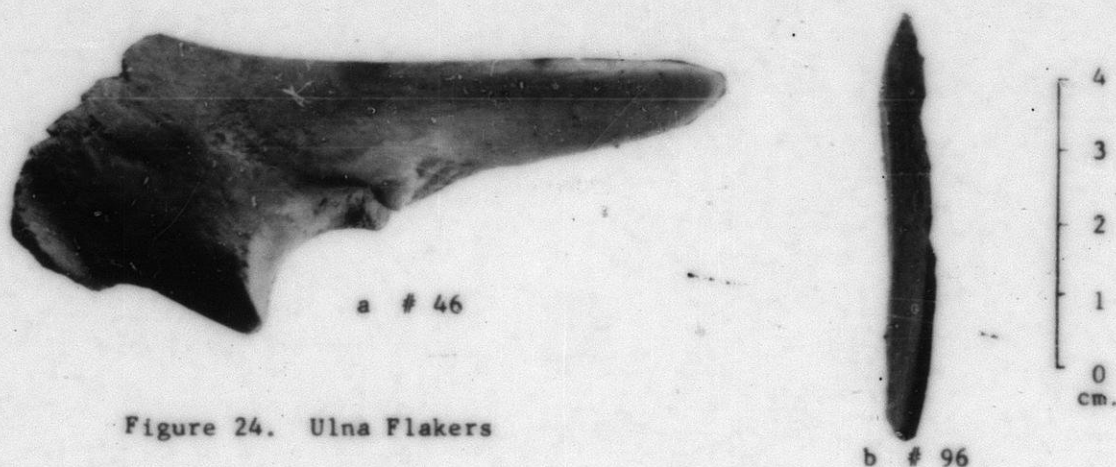
Figure 23. Worked Antler

An antler section, 30 mm. long, (Figure 23, c) has been recently broken at both ends. Like the one antler flaker, it has been grooved longitudinally along one side, deeply enough to expose the cancellous tissue. The section is polished and scored with a knife and thinned toward the tip. The fragment, which is burned, was found in Square 4:5, Level 1.

#### Ulna Flakers, Figure 24

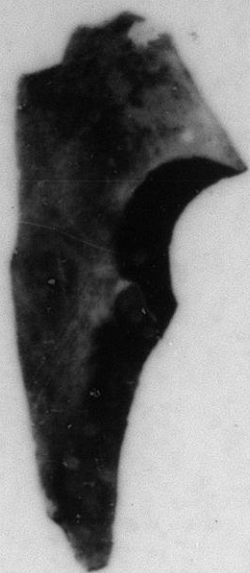
One complete ulna flaker, # 46 made from the proximal end of a deer ulna, is 98 mm. long. The shaft has been thinned and rounded off at the tip. The tip is somewhat battered. The specimen was found in Square 0:2, Level 5.

The other flaker, from Square 0:2, Level 11, is broken so that only the thinned, rounded tip remains. One edge of the shaft is rodent gnawed.

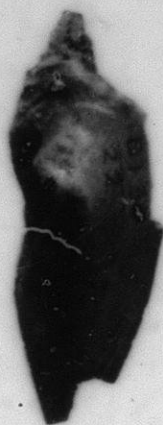


#### Worked Ulnas, Figure 25

The proximal ends of two deer ulnas have polished surfaces and thinned shafts. Both ends of the bones have been broken off so that the function of these implements remains unknown. # 22 was found in Square 2:2, Level 8, and # 114 in Square 1:3, Level 8.



a # 114



b # 22

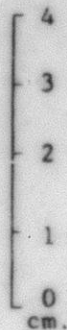


Figure 25.

Worked ulnas

Awls

A long bone (tarso-metatarsal, bird) was made into an awl by splitting the bone longitudinally and thinning the shaft toward the tip to form a point. Both the extreme tip and the butt end of the awl are now broken off. This specimen was found in Square 0:2, Level 11.



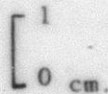
# 69



An awl tip, recovered from Square 4:6, is probably from a longer piece of longitudinally split bone.



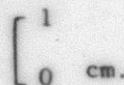
# 101



Another awl tip, from Square 6:7, Level 1, made from a splinter of bone, was completely reworked to form a rod-shaped awl.

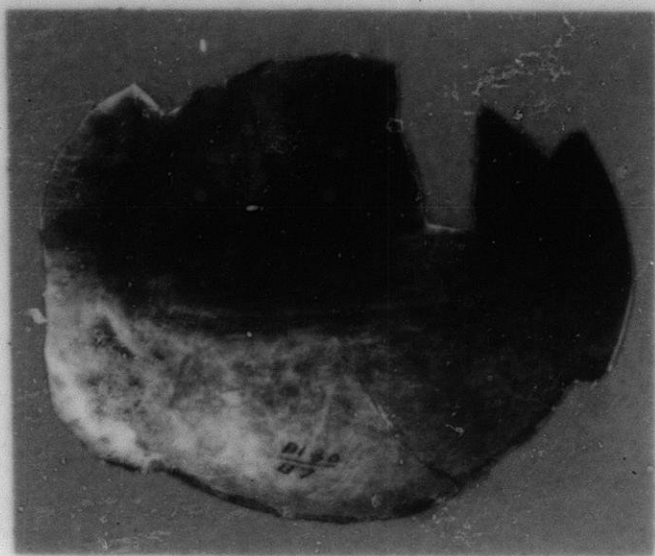


# 45



Turtle Shell Bowls, Figure 26

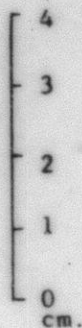
A turtle carapace bowl, # 87, with only portions of the edges missing was recovered from the site. All ridges on the interior of the carapace were



a # 87



b # 60



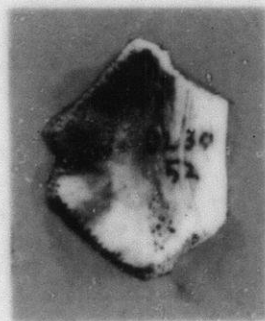
c # 39



d # 92



e # 10



f # 52



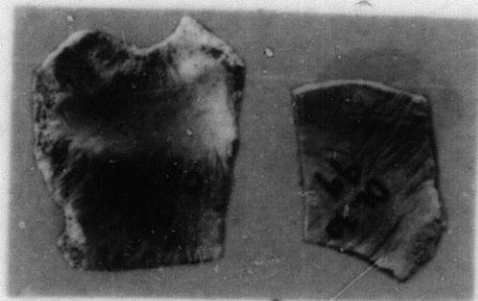
g # 52



h # 112



i # 113



j # 10

k # 99

Figure 26. Turtle Carapace Bowls

cut off and ground down, and the interior scraped with a knife to produce a smooth surface.

Ten fragments of carapace bowls all show the same characteristics as the almost complete bowl. The interior projections have been cut off and knife marks are visible on the interior.

Specimen Provenience

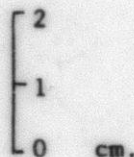
<u>#</u>	<u>Square</u>	<u>Level</u>	<u>#</u>	<u>Square</u>	<u>Level</u>
87	0:5	12	52	1:5	5
60	1:4	9	112	0:5	8
39	0:2	8	113	3:6	3
92	0:4	12	10	4:7	3
10	4:7	3	99	0:3	7
52	1:5	5			

Notched Bones

A fragmentary deer rib, 98 mm. long, has been notched at right angles to the length of the bone. The notches are about 1 mm. wide and occur at 4 to 9 mm. intervals along the length of the bone. The length of the notches can not be measured because of breakage. The specimen was found in Square 1:2, Level 11.



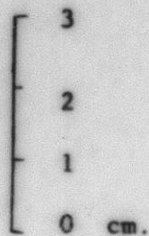
# 86 Notched Rib



The proximal end of a deer ulna, 107 mm. long, has been notched at 3 to 4 mm. intervals at right angles to the length of the bone along the outer or posterior border. The specimen was found in Square 2:3, Level 8.



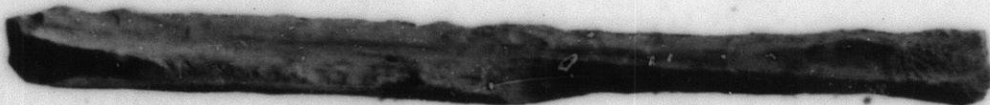
# 22 Notched Ulna



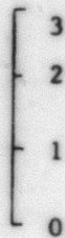
Notched long bones and ribs have been found in sites in Oklahoma, (Watson, 1950; Lehmer, 1952), in South Dakota (Wedel, 1955), and in Kansas (Wedel, 1935); and have been called rasps by these authors. If this identification is correct for notched long bones and ribs, it is probable that the notched ulna from the site served the same purpose.

Beamer

A section of deer cannon bone, 137 mm. long, appears to be a mid-section of a beamer which has been worked down so that the usual beveled edges are no longer present. Both ends and parts of the edges have broken off. The specimen was found in Square 0:4, Level 16.



# 1 Beamer Fragment

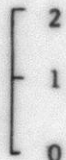


Wolf Canine

A wolf canine (*Canis lupis*) is worked to the extent of having the extreme tip of the root cut off to expose the interior cavity. Knife marks are visible around the cut and also in a pattern along one side of the root. It is possible that the cut was made in order to facilitate the attachment of a thong or cord to the tooth in order to suspend it. It was found in Square 6:7, Level 1.



# 45 Wolf Canine



Human Canine

A human canine with the crown naturally worn down from attrition has been shallowly grooved just below the crown. The root and crown are highly polished. The groove was probably made so that the tooth could be suspended as an ornament. The canine was found in Square 2:2, Level 7.



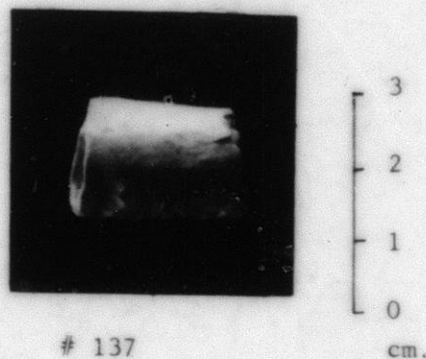
Bone Bracelet

A longitudinally curved and split deer rib has cancellous tissue exposed on one side while the other is smooth and slightly polished. The bone is fragmentary. It was found in Square 4:6, Level 2.



Bone Bead

A piece of bone, cut and ground at both ends, has been made into a bead 24 mm. long and 17 mm. in diameter. The surface of the bone is polished and is now rodent gnawed. The interior is hollow but not ground. The bead was found in Square 0:4 in Level 12.





Miscellaneous Worked Bone, Figure 27

Six bone fragments are highly polished and some are marked with a knife. Their fragmentary condition precludes any analysis as to their functions.

Specimen Provenience

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Identification</u>
45	6:7	1	deer radius
30	0:4	3	unknown
75	0:5	5	deer cannon bone
45	6:7	1	unknown
50	2:6	5	bird tarso-metatarsal
105	2:2	4	deer rib



a # 45



b # 30



c # 75



d # 45



e # 50



f # 105

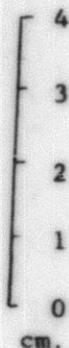


Figure 27. Miscellaneous Worked Bone

## CERAMICS

The ceramic material from D1-30 is primarily that of the Neosho Focus, with the pottery types Woodward Plain and Neosho Punctate represented. A single Woodland sherd was also found. A few of the sherds from the site are not available for study, but were tabulated as to temper, decoration if present, and provenience. These sherds will be included in the sherd count but cannot be adequately described unless specific data is present. Characteristics of paste, surface color, and measurements are recorded for those sherds which are present.

### Woodward Plain

Thirty-one rim sherds and one restored vessel conform to the type Woodward Plain as described by Robert L. Hall for the type sites (D1-42 and D1-55) (1951: 19-21) and also to sherds of this type from D1-47 (Baerreis and Freeman, 1959: 222-243). Six rim sherds and the restored vessel from D1-30 are missing.

The Woodward Plain rim sherds are tempered with particles of shell which range in size from .5 to 3 mm. The sherds are usually compact although a few are laminated and one is leached. Hardness ranges from 2 to 3.5 with the majority of the sherds reaching 3.5 on the hardness scale. A few of the rims are refired, probably from contact with cooking fires within the cave, and are above 4 in hardness. The surface of all sherds is smooth, sometimes unevenly and slightly polished, but never with a consistent and high gloss. Surface colors are grey, black, or reddish brown, usually the latter. Particles of shell are visible on both surfaces of the sherds. These characteristics fall within the range for sherds of this type as described for D1-42, D1-55, and D1-47.

The rims which are present are described below. The classification of

rim form is that described for pottery from D1-47 (Baerreis and Freeman, 1959: 222 - 243).

Woodward Plain, Bowl A (Figure 28)

The walls of these bowls are convex, either vertical near the orifice or slanted inward to decrease the maximum diameter at the orifice. The wall of the bowl of this form from D1-30, # 145 from Square 2:2, Level 10, is vertical at the orifice. The orifice diameter is calculated to be 20 cm., the flat lip is 5 mm. thick. This bowl has a vertical triangular tab, 8 mm. high, on the lip. Only one tab is present on the sherd so it cannot be determined if more tabs were present and how multiple tabs were spaced. Multiple lip tabs were present on one rim sherd of Bowl Category A from D1-47.

Woodward Plain, Bowl B (Figure 28)

Bowls in Category B have walls which slant inward from the lip to the base. The two bowls from D1-30 have walls which slant in a straight line from lip to base and thus can be placed in Category B 2. Bowls in Category B1 have walls which are convex yet slant inward. The characteristics of the two B 2 bowls are listed below.

Category B 2 Rims

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Lip Form</u>	<u>Thickness (Lip)</u>	<u>Orifice Diameter</u>
25	3:3	8	flat	5 mm.	14 cm.
147	7:7	1	flat	7 mm.	- -

Woodward Plain, Jar Category A (Figure 28)

The rim of vessels classified in Jar Category A are either vertical or inslanting and merge gradually with a gently rounded shoulder. Eight rim sherds representing approximately three vessels are of this form.

Jar Category A Rims

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Lip Form</u>	<u>Thickness (Lip)</u>	<u>Orifice Diameter</u>
59	1:2	13	flat	5 mm.	--
137	0:4	12	flat	4 mm.	--
157	0:4	14	flat	4 mm.	--
<p>Rim sherds #'s 137 and 157 are considered to be from the same vessel because rim form and lip thickness are identical as is the surface color, a dark red-brown.</p>					
156	2:3	11	flat	7 mm.	--
140	2:3	12	flat	7 mm.	--
144	2:2	8			
156	2:3	11	these sherds are rim and body sherds glued together. Same vessel as sherd # 156 above.		
145	2:2	10			
59	1:2	13			
118	1:2	12	flat	6 mm.	--
			same jar as above sherds		
156	1:1	9	flat	7 mm.	32 cm.
56	2:3	11	same jar as above sherds		
29	0:3	16	flat	6 mm.	32 cm.
6	1:2	14			
144	2:2	8			
140	2:3	12	same jar as above sherds		
145	2:2	10			
4	0:4	16			

These sherds are all from the same jar with an inslanting rim, illustrated in Figure 29. The reconstruction in the drawing is made from a series of rim sherds, the extent of the rim present is designated by the hatching on the rim at the right of the drawing. Basal sherds were not found for this vessel (a large number of sherds from the body and rim are missing too) so the base form is conjectural. However, Woodward Plain vessels are known to have flat bases in some if not all instances.

Sherds from this jar come from many locations within the site, a fact

that can be explained either by the disturbance within the site or by the fact that the jar may have broken and an attempt was made to cut the sherds apart. On two rims cut marks are visible from the lip vertically to the shoulder and perhaps beyond. At any rate the cuts extend to the limit of the sherds as reconstructed. These vertical cuts are present on rim sherd # 140, 144, 156, 59 and sherd # 29, 6, 144, 140, 146, 4. A line is also cut on sherd # 156, but here it is horizontal and parallel to the lip. These lines are usually even, 2 mm. wide, and might be mistaken for engraving except for the fact that in some places multiple vertical cuts are present as if the implement used for cutting slipped from the groove. None of the cuts extend to the interior of the vessel although one sherd had broken along a cut line. The surface color of the vessel apparently was originally reddish brown. Some of the sherds have been refired and are now bright red or orange. The surface is slightly polished in horizontal lines, perhaps the result of scraping a tool over the surface in order to smooth it.

Unfortunately not all the vessel is present so the rims cannot be fitted together to gain an idea of why the attempt to cut the sherds was made. The fact that the jar was large, orifice diameter of 32 cm. is considerably larger than for other vessels from this site, and many of the rim sherds were not found may indicate the jar broke before it was cut apart. If this is true, the portion of the vessel cut from the original would have a secondary use. The absence of some of the rim sherds could be accounted for by the disturbance in the cave deposit since the sherds came from a disturbed area. The insertion of the burial in this area could also account for the scattering of sherds, but the vessel must have broken and become scattered over the surface during aboriginal times since some of the sherds were in contact with cooking fires while others were not.

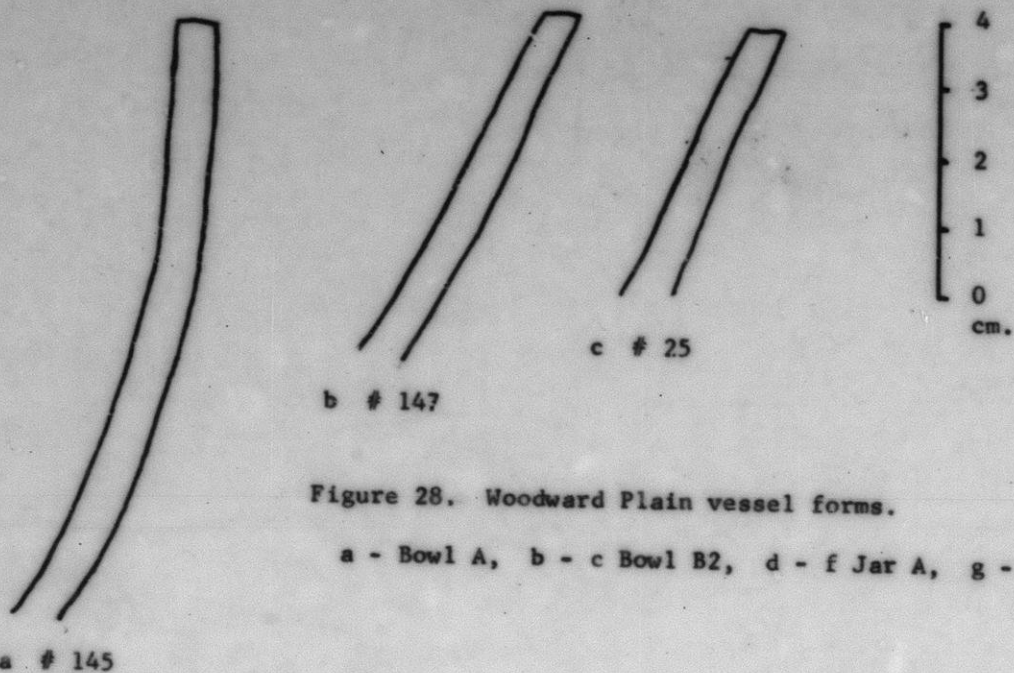
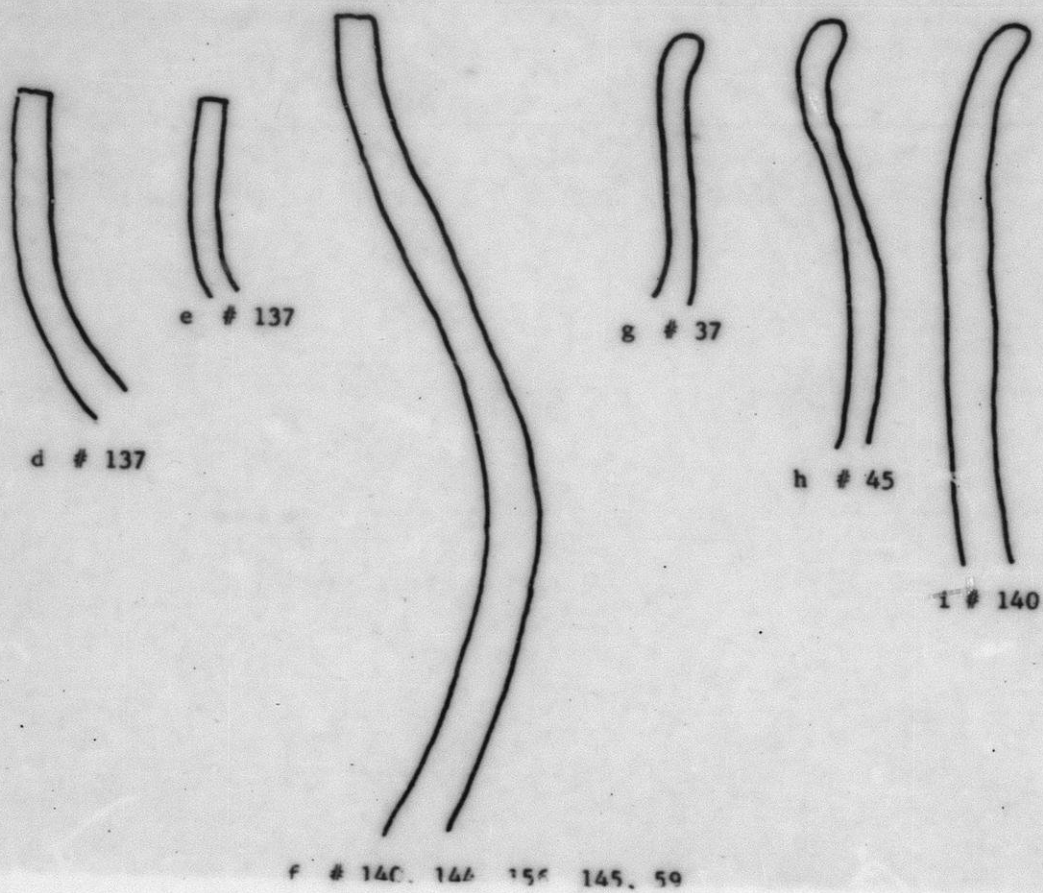


Figure 28. Woodward Plain vessel forms.

a - Bowl A, b - c Bowl B2, d - f Jar A, g - i Jar B.

a # 145



e # 137

d # 137

g # 37

h # 45

i # 140

f # 140, 146, 156, 145, 50

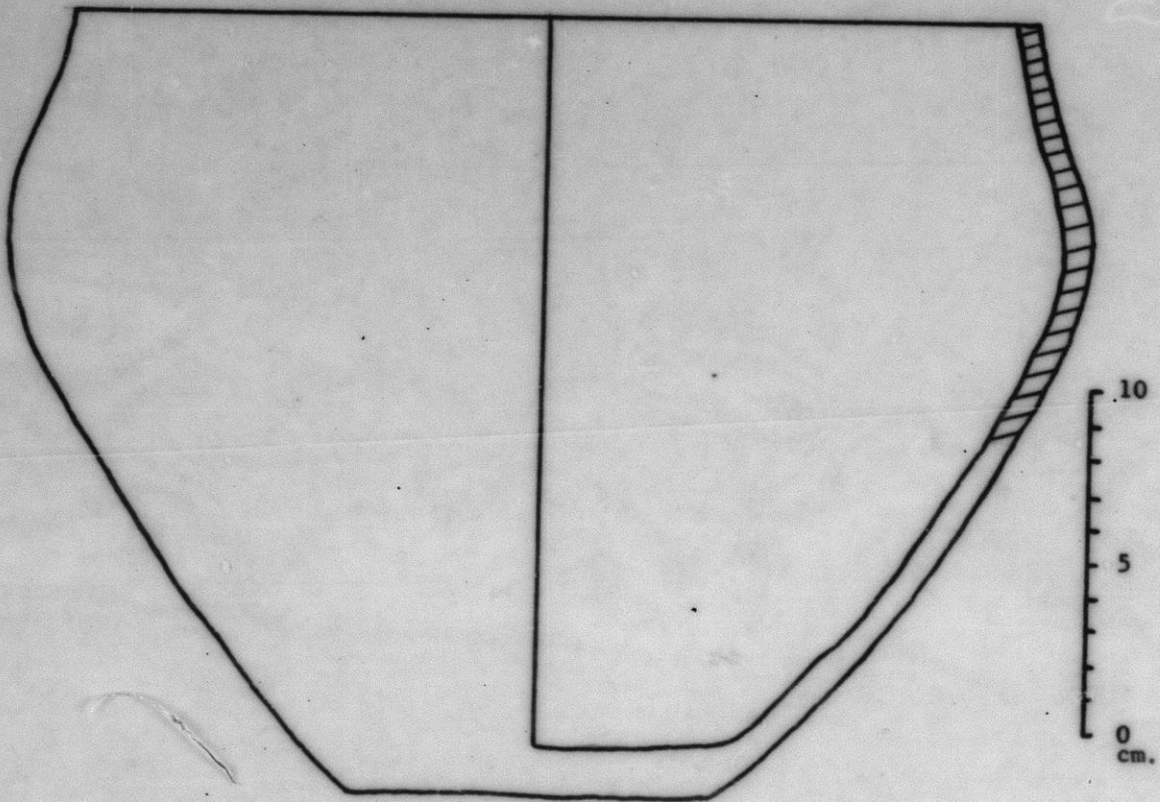


Figure 29. Woodward Plain, Jar Form A reconstructed from  
sherds # 140, 144, 156, 145, 59

Woodward Plain, Jar B (Figure 28)

The rims of jars of Category B are less than 15 mm. high and are either flaring or vertical. As in Category A, the shoulder is gently rounded. The four sherds from D1-30, all with flaring rims, are listed below.

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Lip Form</u>	<u>Thickness (Lip)</u>	<u>Orifice Diameter</u>
37	4:6	2	round	4 mm.	- -
45	6:7	1	round	4 mm.	14 cm.
43	1:4	15	round	3 mm.	- -
140	2:3	12	round	4 mm.	- -

Woodward Plain, Jar C (Figure 30)

While the rims of vessels within this category flare as do some rims in Category B, the height of the rim is more than 15 mm. and the rim flares at more than a 45° angle from the shoulder. The four rims in this Category are tabulated below.

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Lip Form</u>	<u>Thickness (Lip)</u>	<u>Orifice Diameter</u>
53	1:2	15	round	7 mm.	20 cm.
23	3:6	1	round	5 mm.	- -
13	4:6	3	round	5 mm.	- -
150	4:7	2	flat	5 mm.	- -

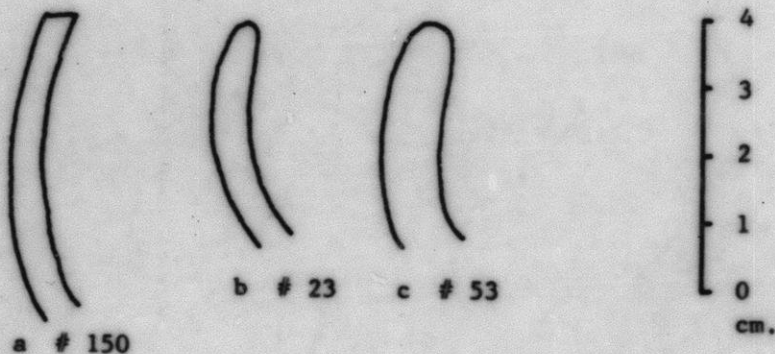


Figure 30.  
Jar C rim profiles.



Woodward Plain, Miniature Jar (Figure 31)

The restored vessel from the site is not available for study, but form and measurements were recorded. The paste of the sherds from this vessel conform to others of the type Woodward Plain. The vessel is 6 cm. high, orifice diameter is 7.6 cm., and maximum diameter (at the shoulder) is 8.3 cm. The flat circular base is 5.3 cm. in diameter. The rim of this jar is vertical and the shoulder is gently rounded, thus conforming to the description of Jar Category A. Except for the small size of this vessel it would be classified as Jar A. This miniature vessel was found in Square 4:6 in Level 2.

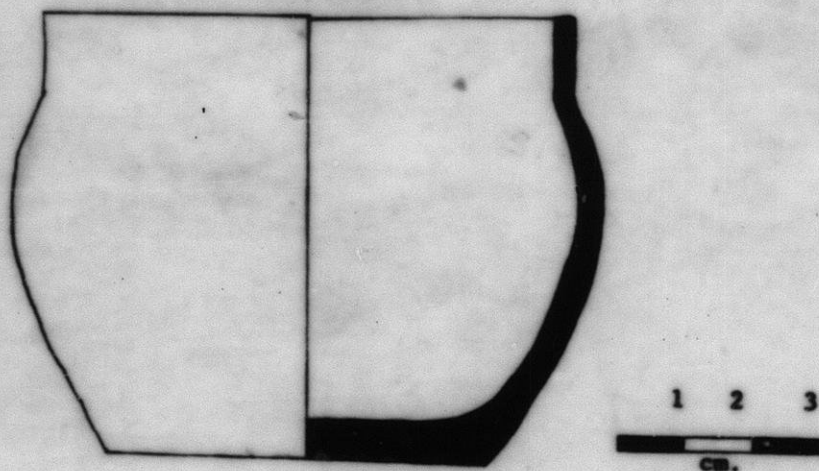


Figure 31.

Restored vessel Woodward Plain from Square 4:6, Level 2

Unclassified Jars, Woodward Plain

Rims which are available that are too small to be classified within a particular jar category and those sherds which are missing which can be listed as jars are tabulated below.

<u>#</u>	<u>Square</u>	<u>Level</u>
146	1:3	10
141	1:4	10 same vessel as # 146 above
149	0:3	3
	0:4	6

Unclassified Rims, Woodward Plain

The following rims are those which are too small to be classified as bowls or jars.

<u>#</u>	<u>Square</u>	<u>Level</u>	<u>#</u>	<u>Square</u>	<u>Level</u>
20	5:7	1		2:4	12
32	4:6	1		1:3	1
	joins # 20 above			1:2	8
9	1:5	1		1:2	14
10	4:7	3		0:4	6
131	0:3	12			

### Neosho Punctate

The pottery type Neosho Punctate is the decorated variety of Woodward Plain and thus has the same paste characteristics of the sherds of that type. There are ten Neosho Punctate rim sherds from D1-30, two of which are missing. Elements of design can be described for these two sherds although they cannot be classified as to rim form. Rim form categories are the same as those described for Woodward Plain.

#### Neosho Punctate, Jar Category A

Four rim sherds from D1-30 are characterized by vertical or inslanting rims. Sherd # 12 and 53 from Square 0:4, Level 6 and Square 1:2, Level 15 has a flat lip, 6 mm. thick, and a vertical rim. Punctates are present on the lip, parallel to the walls of the vessel. Three parallel incised lines, 4 mm. wide, run diagonally from the lip and are probably confined to the rim. These lines are met by diagonally opposed lines. This grouping of incised lines is bordered at the bottom by punctates made by an implement which was jabbed twice into the clay to form double punctates. (See Figure 31, c)

A second rim sherd of Category A has a slightly inslanting rim and a flat lip 6 mm. thick. Punctates are present on the lip parallel to the walls. A single diagonal incised line on the lower rim is bordered by wedge shaped punctates. This sherd was found in Square 1:3, Level 10.

Sherd # 158, from Square 4:6, Level 2, has a vertical rim and a flat lip decorated by wedge shaped punctates. A horizontal row of vertical wedge shaped punctates is present on the upper shoulder and a chevron formed by incised lines is found below the punctates. (See Figure 32, b)

Wedge shaped punctates are present on the flat lip of sherd # 156.

Opposed diagonal incised lines form a herringbone pattern on the rim and shoulder. This sherd from Square 2:3, Level 11 is illustrated in Figure 32, a.

#### Neosho Punctate, Jar B

Sherd # 41, 56, 86, and 29 (Square 2:2, Level 9; 1:1, Level 9; 1:2, Level 11; and 1:2, Level 14) has a flaring rim 10 mm. high. The orifice diameter is estimated to be 12 cm. The lip is decorated by punctates made with a hollow implement while the lower rim and upper shoulder are decorated with two horizontal parallel rows of the same kind of punctates. A strap handle, 12 mm. wide, is attached to the lip and shoulder and is bifurcated at its base. (See Figure 31, a)

Another sherd, also with a short flaring rim, is decorated by punctates on the lip and an incised line, 3 mm. wide, which runs diagonally from the lip. This sherd was found in Square 0:1, Level 4 and is illustrated in Figure 33, b.

Rim sherd # 50, from Square 2:6, Level 5, has a rounded lip which is decorated by notches made diagonally across the lip. Wedge shaped punctates are placed diagonally on the lower rim and upper shoulder in such a fashion that the two rows are diagonally opposed. (See Figure 33,a)

#### Unclassified Rims, Neosho Punctate

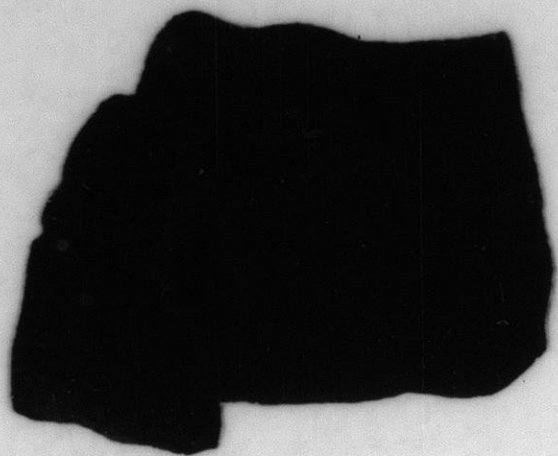
Two of the three rims which are unclassified as to form, are missing, but decoration can be described. A rim from Square 4:6, Level 1 is decorated by wedge shaped punctates on the lip and in a horizontal row on the rim (Figure 33, c). The rim sherd from Square 1:2, Level 11 is decorated by punctates on the lip and diagonally opposed lines on the rim and shoulder. The lines are bordered at the bottom with punctates. (Figure 32, d).

Sherd # 121 from Square 1:3, Level 1 has wedge shaped punctates on the lip, paralleling the walls.

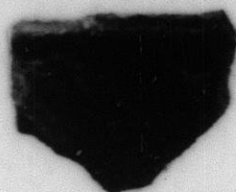
Neosho Punctate Body Sherds

Nine shell tempered body sherds, decorated by the same techniques and having similar designs to the Neosho Punctate rim sherds, are tabulated below.

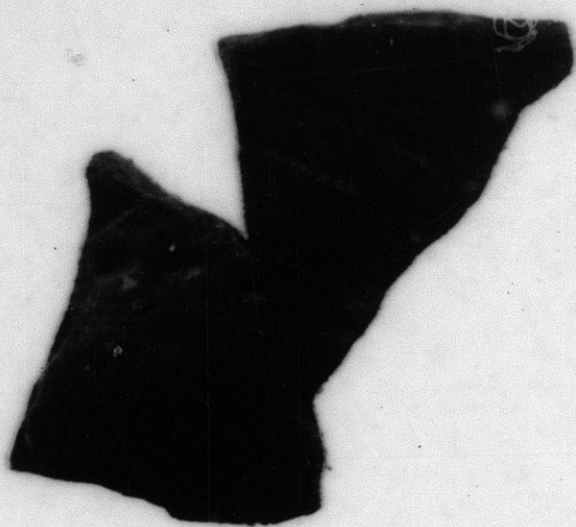
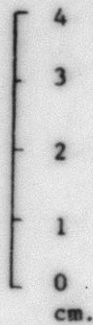
<u>#</u>	<u>Square</u>	<u>Level</u>	<u>Decoration</u>
36	1:3	7	horizontal row of wedge shaped punctates
67	0:1	4	diagonal incised lines bordered by punctates
50	2:6	5	three curved lines in chevron motif, bordered by punctates
44	0:4	7	parallel horizontal incised lines bordered by wedge shaped punctates
42	0:3	10	horizontal incised line bordered by wedge shaped punctates - same vessel as # 44?
26	4:6	4	diagonal incised lines
146	3:6	2	parallel rows of incised lines
	0:3	11	parallel rows of incised lines bordered by wedge shaped punctates, same vessel as # 44 and 42?
	0:1	4	punctates



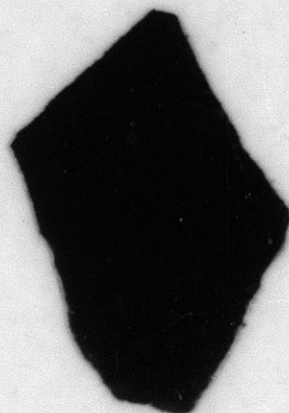
a # 41 & 56 & 86 & 29



b # 42



c # 12 & 53



d # 50

Figure 32. Neosho Punctate

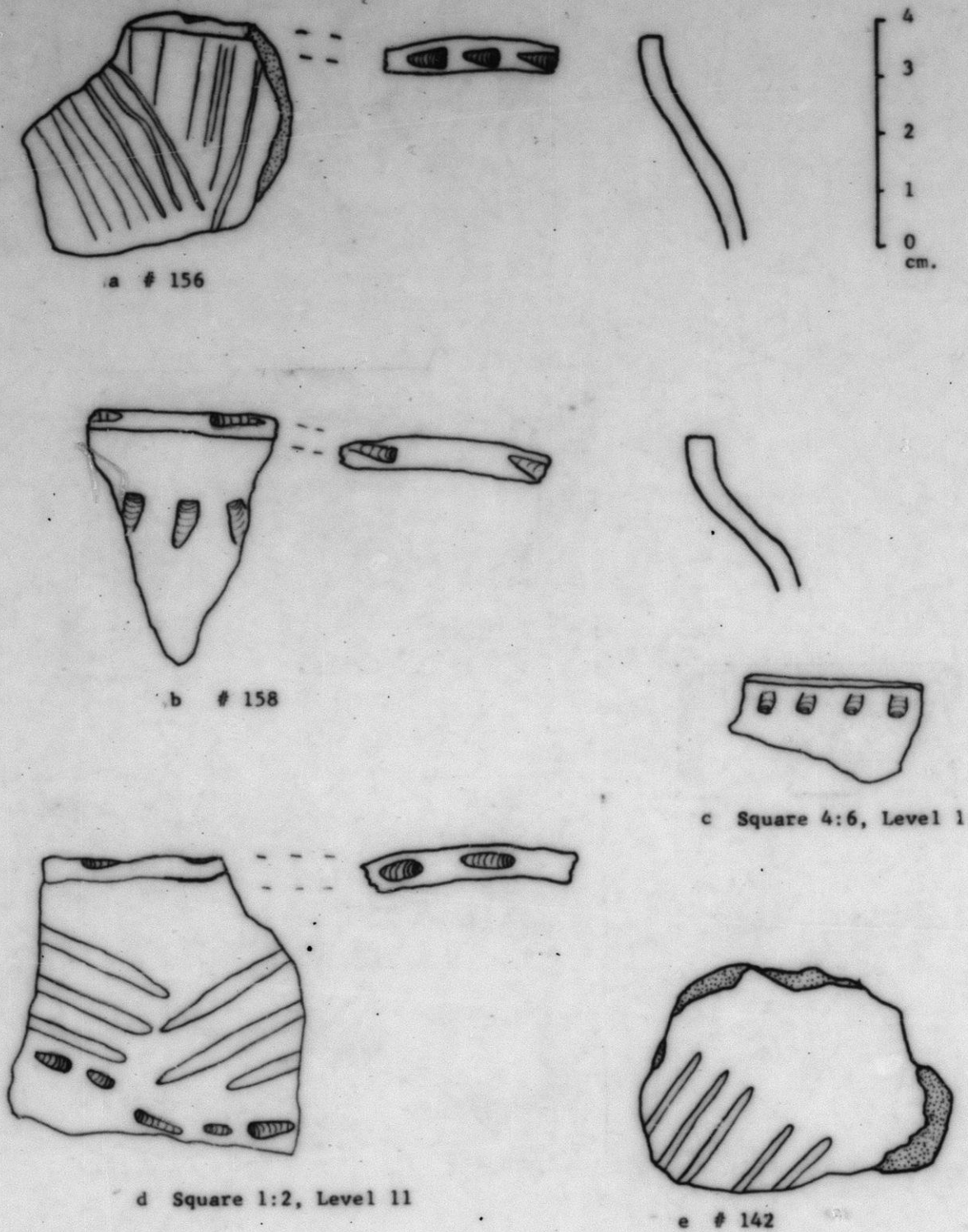
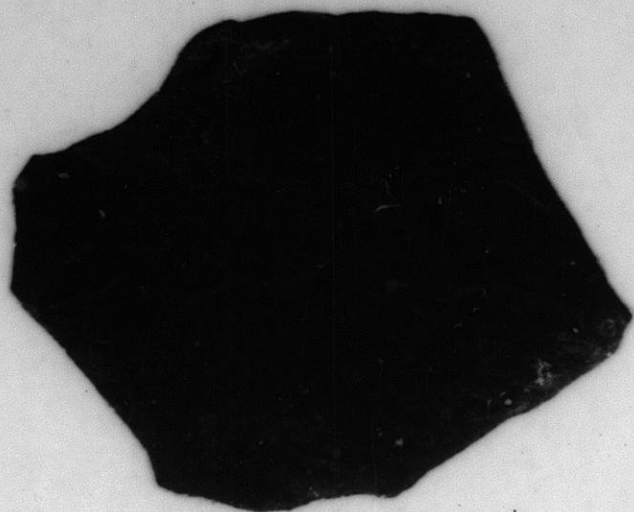
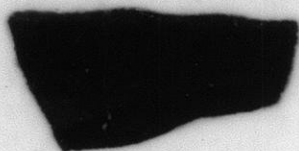
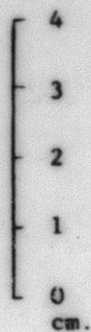


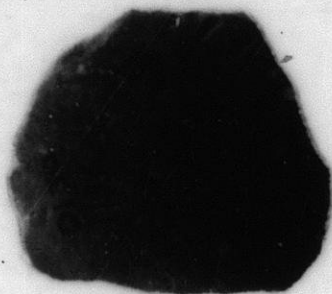
Figure 33. Neosho Punctate



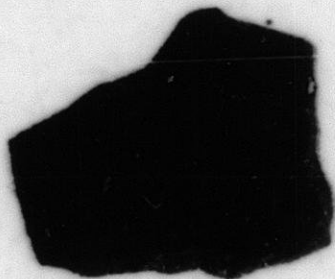
a # 50



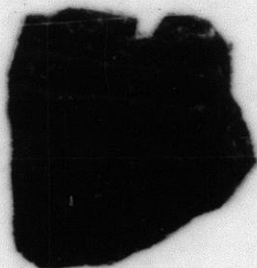
b # 67



c # 35



d # 67



e # 44

Figure 34. Neosho Punctate



Shell Tempered Body and Basal Sherds

There are 218 shell tempered body sherds tabulated for D1-30, 33 of which are missing. The sherds which are present have the same paste characteristics and surface finish as Woodward Plain and Neosho punctate rims, and it is assumed that they belong to the vessels of either of the two types. The thickness of the sherds which are present ranges from 3 to 9 mm. with an average of 6.03 mm.

One sherd is a section from a flat circular base and two sherds are from the body at the junction of body and flat circular base. The basal sherd is 11 mm. thick at the base while the wall thickness of the other two sherds varies from 8 to 13 mm. immediately at the base.

Ten body sherds including a flat circular base are tempered with shell and sparse grit inclusions. All are apparently from the same vessel. The exterior of these sherds is buff colored and the interior is black. They are all 2 in hardness and 7 mm. thick. The surface finish differs from the usual shell tempered sherd in that it is smoothed over either cord roughening or brushing. The impressions on the surface are regular but not distinct enough to determine the exact surface finish. If the sherds are cord marked they might well represent a ceramic tradition between Woodland and Neosho Focus, Woodland surface finish and a mixture of Woodland and Neosho Focus paste. On the other hand, brushed surface sherds of Woodward Plain were found at D1-47 (Baerreis and Freeman, 1959: 225) as were sherds with sparse grit inclusions.

### Handles

Two handles were found which were not attached to vessels. Both are shell tempered. One of the handles, # 90 from Square 2:3, Level 13, approaches a loop shape with diameters of 9 and 13 mm. The other handle, # 39 from Square 0:2, Level 8, is a strap handle which is 27 mm. wide and 8 mm. thick. This handle still retains the clay plug by which it was riveted into the wall of a vessel.

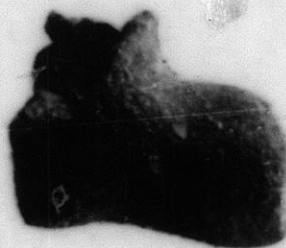


# 90 Handle

### Pottery Pipe

A fragment of a shell tempered pottery pipe was found in Square 4:6 in Level 1. The surface of the pipe was originally smooth, but now portions of the surface have slaked off.

The bowl of the pipe is broken off, but enough remains to indicate that it is an equal armed, right angle, elbow pipe. There is a spur on the stem just where it joins the bowl. The stem is 37 mm. long and 22 mm. in diameter. The hole at the end of the stem is 15 mm. in diameter while at the junction of the stem and bowl it narrows to 6 mm. and then widens to form the bowl.



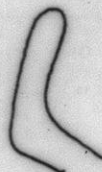
# 3 Pottery pipe

### Woodland Ceramics

One body sherd is representative of the Woodland ceramic tradition as it is seen in northeastern Oklahoma. The sherd is tempered with limestone and very sparse particles of shell, the latter making up about 1/8 of the temper. The sherd is crumbly, is 3.5 in hardness, and is 9 mm. thick. The exterior wall is buff colored and slightly polished while the interior is black. This sherd was found in Square 1:1 in Level 12.

### Unclassified Sherd

A rim sherd, # 12 from Square 0:4, Level 6, is tempered with fine quartz sand grains. The rim flares and would be classified as Jar Category B if it were a Woodward Plain rim. The sherd is black, has a smooth surface, and is 3.5 on the hardness scale. The lip is decorated with notches placed diagonally across the lip.



Rim profile unclassified rim sherd

### NEOSHO FOCUS CERAMICS

The various vessel form categories were originally set up in order to determine whether or not the shell tempered vessels from different sites classified as Woodward Plain were similar in shape characteristics, since it is difficult to exactly determine the size and amount of shell temper present in a sherd. The shell tempered rim sherds from D1-47 were found to represent the same vessel shapes as those from D1-42 and D1-55, the type sites for Woodward Plain (Baerreis and Freeman, 1959: 261). A comparison can be made between vessel forms from D1-30 and those of the previously mentioned sites, in order to determine if sherds from D1-30 conform to sherds already placed within the types Woodward Plain and Neosho Punctate. The rim sherd count is based on the number of vessels present at each site.

#### Comparison of Rim Form Categories

	Woodward Plain			Neosho Punctate		
	D1-30	D1-47	D1-42,55	D1-30	D1-47	D1-42,55
Bowl, Category A	1	5	5	0	3	1
Bowl, Category B1	0	8	2	0	0	2
Bowl, Category B2	2	9	3	0	0	0
Bowl, Category C	0	1	0	0	0	0
Small Bowls	0	5	2	0	0	0
Unclassified Bowl rims	0	5	2	0	0	0
Jar, Category A	3	18	11	4	6	1
Jar, Category B	4	7	7	3	4	0
Jar, Category C	4	3	2	0	0	0
Jar, Category D	0	1	0	0	0	0
Miniature Jar	1	1	0	0	0	0
Unclassified Jar rims	3	6	3	3	0	0
Unclassified rims	9	30	0	0	8	0

It is apparent from this tabulation that at site D1-30 there are fewer bowls in the pottery sample than is true of the other two sites. Other than this, the three sites have the same vessel forms present, although D1-30 appears to be closer to D1-42 and D1-55 than to D1-47 since neither Jar D nor Bowl C is found at the former sites. The differences between D1-30 and the other sites may be a reflection either of sample size or the period of time in the Neosho Focus that D1-30 was occupied. The similarity of vessel forms between sites is enough to indicate that the same ceramic complex is present in all sites.

### CONCLUSIONS

The pottery from D1-30 indicates that a component of the Neosho Focus is present as well as the possibility of a Woodland occupation. The one Woodland body sherd certainly does not indicate that the shelter was occupied over a long period of time by a Woodland group either making pottery or bringing it into the cave. On the other hand, the paucity of artifacts associated with this culture may reflect that the cave was used, perhaps only once, as a hunting camp. If the pottery then represents several cultural stages, it is reasonable to assume that the other artifacts are the remains of more than one occupation of the cave. In order to determine the affiliation of artifacts with the pottery, it is necessary to separate zones of occupation at the site. Since no natural stratigraphy was present at the site, in terms of recognizable layers of different colors of earth, the best way to determine zones of occupation is through the distribution of the pottery.

Since the cave had been partially excavated prior to the arrival of the WPA crew, and the limits of the disturbance caused by this excavation is not known, some of the site must be excluded from stratigraphic interpretation. From the evidence of the scattered fragments of the one burial at the site, the sherds from different squares and levels which have been glued together, and the matching knife fragments, it appears that all or part of Squares 1:2, 1:3, 2:2, and 2:3 were disturbed (see page 8).

There is also the question of whether or not Square 1:4 was dug into at the same time that the other squares were disturbed. It was noted (page 7) that a sherd from Level 15 of Square 1:4 matches one from Square 1:2 at Level 8. These sherds are too far apart to have occurred naturally in these positions (usually matching sherds are one to three levels apart). The

matching sherds are the portions of the flat circular base of the proposed single vessel having mixed temper and a smoothed over cord roughened or brushed surface. Another line of evidence is seen in the shell tempered sherds which are found as low as Level 15 in Square 1:4 as they are in surrounding disturbed squares, while in Square 1:1 (considered to be undisturbed) Neosho Focus ceramics are not found below Level 11. Since the distribution of Neosho Focus sherds in Square 1:4 conforms to the distribution in disturbed squares and the matching sherds from Squares 1:4 and 1:2 indicate disturbance, Square 1:4 is considered to be disturbed and is excluded from analysis. A tabulation of the distribution of sherds in the 1 Alley is presented on the following page. Disturbed and undisturbed areas are so marked.

By excluding Square 1:2, 1:3, 1:4, 2:2, and 2:3 because they are disturbed, and the 0 Alley because it is the talus slope and therefore is an area where cultural debris accumulated in a different manner than in the rest of the cave, we are left with Squares 1:1, 1:5, 2:4, 2:5 and the 3, 4, 5, 6, 7, and 8 Alleys for analysis. In this area shell tempered Neosho Focus pottery is found from the surface to the lowest cultural bearing level, except in Square 1:1. Here, as indicated on the following page, the one Woodland sherd is found at Level 12. The Neosho Focus Zone is then confined to the area where Neosho Focus sherds are found, leaving Square 1:1 below Level 11 as an undetermined zone containing the Woodland sherd, a knife fragment, and a mano with a single grinding face.





The following table is a list of all artifacts which occur in the defined Neosho Focus Zone, those artifacts which occur in the disturbed squares in the 1 and 2 Alleys, and those in the 0 Alley.

List of Artifacts by Areas Within the Site

<u>Artifacts</u>	<u>Neosho Zone</u>	<u>Disturbed Squares 1 and 2 Alleys</u>	<u>0 Alley</u>
<b>Large Projectile Points</b>			
Gary A . . . . .	1	0	1
Gary B . . . . .	0	0	1
Langtry A . . . . .	1	0	4
Langtry B. . . . .	0	0	2
Cooper A . . . . .	2	0	0
Barbed . . . . .	0	0	4
Afton. . . . .	0	0	1
Cupp . . . . .	0	0	1
Table Rock Stemmed . . . . .	0	0	1
Unclassified . . . . .	0	0	1
Fragments. . . . .	4	8	14
<b>Small Projectile Points</b>			
Simple Triangular. . . . .	3	3	2
Lanceolate Triangular. . . . .	1	1	3
Side Notched Triangular. . . . .	0	1	0
Reed Notched . . . . .	0	1	0
Small Lanceolate . . . . .	0	0	1
Serrated Side Notched. . . . .	0	1	0

<u>Artifacts</u>	<u>Neosho Zone</u>	<u>Disturbed Squares 1 and 2 Alleys</u>	<u>0 Alley</u>
Unclassified . . . . .	1	1	2
Fragments . . . . .	0	1	2
<b>Knives</b>			
Large Ovate Acuminate. . .	0	0	1
Small Ovate Acuminate. . .	0	0	1
Large Ovate. . . . .	0	0	2
Medium Ovate . . . . .	0	1	1
Medium Distinct Base . . .	1	0	1
Small Distinct Base. . . .	0	2	0
Fragments. . . . .	3	2	6
Core Knives. . . . .	2	2	1
Core Tool. . . . .	1	0	0
Utilized Flakes. . . . .	5	5	5
Implement Fragments. . . .	2	2	3
<b>Scrapers</b>			
Type A - 2 . . . . .	0	0	1
Fragment . . . . .	1	0	0
Harahey Knife. . . . .	1	0	0
Drill. . . . .	0	1	0
<b>Ground Stone</b>			
Two Faced Manos. . . . .	1	3	1
One Faced Manos. . . . .	0	2	2
Loaf Shaped. . . . .	0	1	0
Metate . . . . .	0	0	1
Hammerstones . . . . .	1	1	0
Shaft Smoother . . . . .	1	0	0

<u>Artifacts</u>	<u>Neosho Zone</u>	<u>Disturbed Squares 1 and 2 Alleys</u>	<u>0 Alley</u>
Ground Stone, cont'd			
Grooved Abrader . . . . .	2	0	0
Celt . . . . .	0	1	0
Hematite. . . . .	0	1	2
Shell			
Shell Scrapers. . . . .	3	4	0
Perforated Shell. . . . .	0	0	2
Bone			
Antler Flakers. . . . .	1	2	3
Worked Antler . . . . .	2	0	0
Ulna Flakers . . . . .	0	0	2
Worked Ulnas. . . . .	0	2	0
Awls. . . . .	2	0	1
Turtle shell Bowls. . . . .	5	1	5
Notched Bones . . . . .	0	2	0
Beamer. . . . .	0	0	1
Wolf Canine . . . . .	1	0	0
Human Canine. . . . .	0	1	0
Bone Bracelet . . . . .	1	0	0
Bone Bead . . . . .	0	1	0
Miscellaneous . . . . .	3	1	2
<u>Pottery</u>			
Woodward Plain			
Bowl A . . . . .	0	1	0
Bowl B1. . . . .	2	0	0

<u>Pottery</u>	<u>Neosho Zone</u>	<u>Disturbed Squares 1 and 2 Alleys</u>	<u>0 Alley</u>
<u>Woodward Plain, cont'd</u>			
Jar A . . . . .	1	13	4
Jar B . . . . .	2	2	0
Jar C . . . . .	3	1	0
Miniature Jar . . . . .	1	0	0
Unclassified Jars . . . . .	0	2	2
Unclassified rims . . . . .	5	3	2
<u>Neosho Punctate</u>			
Jar A . . . . .	1	3	1
Jar B . . . . .	2	3	1
Unclassified Jars . . . . .	1	2	0
Body sherds . . . . .	3	1	5
Plain shell tempered body and basal sherds . . . . .	70	107	48
- (The rim sherd count here is that before matching sherds from different squares and levels not a vessel count.)			
Pottery Pipe . . . . .	1	0	0

It can be noted that in the lowest levels of the 0 Alley (the talus slope) in levels 16 through 18, (the lowest sherds were found in Level 16) are found projectile point types which at other sites in Delaware County and in surrounding areas are found in cultures earlier than the Neosho Focus.

These point types, Afton, the provisional Barbed form, and Table Rock Stemmed, are apparently more characteristic of the Archaic in Oklahoma than of any later horizons. Afton points, included in Type B1 at D1-55, are found

in Zone II of this site (Wittry, 1952: 27). At other sites in Delaware County, Afton points are found in levels constituting components of the Grove Focus (Baerreis, 1951: 74). In addition, it has been observed that Afton points are frequently found in surface collections from non-ceramic sites (Bell, 1958: 6).

The Barbed form at D1-30 has its closest resemblance to Type B2 which is found in the B and C phases of the Grove Focus (Baerreis, 1951: 63). This type occurs in greatest numbers in preceramic Zones II and III at D1-55 (Wittry, 1952: 27-28). Only a few of the Barbed form occur in the ceramic zone of both D1-55 and D1-42 (Hall, 1951: 43).

The type Table Rock Stemmed at the type site, the Rice Site in Missouri, is said to be typical of the Middle Archaic at that site (Bray, 1956: 128). This type, originally classified as Type C in Delaware County, is found in all three phases of the Grove Focus, in greatest numbers in Grove B and C (Baerreis, 1951: 63). At D1-55 and D1-42, Table Rock Stemmed points are found only in preceramic levels (Wittry, 1952: 28).

While none of the above mentioned point types can as yet be firmly assigned to Archaic and to no other culture, it would appear that their presence in a site is indicative of an Archaic occupation. If this is true at D1-30, the site was then originally occupied by an Archaic group. This occupation apparently was confined to the front part of the cave. There is also the possibility that a Woodland group occupied this site, but artifacts are so scarce that a definite statement as to the use of the cave by such a group must remain as speculation.

Certainly the most information from this site is gained from the Neosho Focus Zone. Evidence from D1-47 supports the association of Simple Triangular and Lanceolate Triangular points, shell scrapers, Harahey knives,

manos with two opposed grinding faces, and sandstone shaft smoothers and abraders with Neosho Focus pottery. Gary A, Langtry A, and Cooper A points are also found in the Neosho Zone at D1-47, although they are found in Woodland levels at that site (Baerreis and Freeman, 1959: 282-286).

A few new traits, not found in the Neosho Focus Zone at D1-47, can now be added to the trait list for the Focus on the basis of their occurrence at D1-30. These are the grooved wolf canine and the pottery pipe. Probably the celt also belongs within the artifact inventory of this Focus since it was found in the upper levels of Square 2:3, even though this square was disturbed. It seems unlikely that anyone looking for artifacts would have missed the celt if it had been in an area which was excavated. Since there is the possibility that the entire square was not disturbed, it is suggested that the celt is a trait of the Neosho Focus.

The various functions of the implements found in the Neosho Focus Zone at D1-39 suggest that varied activities were carried on by the occupants. Artifacts indicate that preparation of skins, probably for clothing, manufacture and upkeep of stone and bone implements, and preparation and cooking of food took place within the cave. The grooved canine was undoubtedly worn as an ornament.

The bone and shell refuse found within the deposits plus the projectile points indicate a hunting and gathering economy. Since manos are present, the people must have ground either wild or cultivated seeds. There is no direct evidence in the form of floral remains to indicate whether agriculture was part of the economy.

The variety of activity suggested by the artifacts is mostly domestic in nature, such as one would expect a family to participate in. Certainly no more than eight to twelve people could have comfortably occupied the area within the cave.

In summary then, the data gained from this site would indicate that it was originally occupied by an Archaic and/or Woodland group and then by a group with a Neosho Focus culture. Most probably the Neosho Focus artifacts resulted from occupation by a group who lived in the cave during the entire year over a period of time.

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APPENDIX 1. SKELETAL MATERIAL FROM D1-30

by Aaron Elkins

The skeletal remains of D1-30 consist of a group of scattered fragments found in the refuse deposits, and of one enumerated burial, Burial No. 1. It seems extremely probable that all of the bones belong to one individual. Compatible size and general appearance suggest this (all the bones are large and heavy, with prominent muscle-markings), but more conclusive evidence lies in the facts that: 1) in a total of about 45 bones (about 25 of which are from the refuse), there is no duplication; 2) the distal half of a humerus from the refuse was found to belong unquestionably to the proximal half of one found with the burial; 3) in several cases, fragments from different areas in the refuse were found to be parts of the same bone. (see Table 4); 4) stature estimations, made from the humerus found with the burial, and from a femur from the refuse, are equal.

The material is in a rather poor state of preservation, being very fragmentary, but not extensively decomposed. Extensive reconstruction has been possible, especially on the skull from the burial, which still, however, remains far from complete.

The formulae for Whites in Trotter and Gleser (1952) were utilized for calculation of stature. Although not intended specifically for American Indians, this method appears to be the best extant.

In the following descriptions and tables, the burial and refuse materials are treated separately, since their association, though most likely, is not certain. The humerus, found half with the burial, and half with the refuse, is treated with the former.

#### DESCRIPTION OF BURIAL

Burial No. 1 consists of the partially restored skull, left clavicle, fragments of the right innominate, left scapula, left humerus, ribs, and thoracic and lumbar vertebrae of a young adult male, aged at 21-35. The left coronal suture is endocranially obliterated, although, ectocranially, the pars complicata appears open, and traces remain of the pars bregmatica. The pars bregmatica of the right coronal is as on the left, and the pars bregmatica of the sagittal suture is endocranially obliterated, while, ectocranially, union seems to have just begun. Breakage occurs along all the other sutures, making it difficult to determine how far union has progressed, but it would seem as if the rest of the right coronal, the rest of the sagittal, and both lambdoid sutures are open, or at an early stage of closure. The age range suggested by suture closure, then, is from about 23 to 41. The teeth indicate an age in the lower half of this range. All of the first molars have been worn through to the dentine in large areas, but at least half of each of these teeth still retains an enamel coating. All of the second molars have worn through the enamel only in spots, and each third molar has an intact (but thinned, in places) layer of enamel on its occlusal surface.

The calvarium could only be partially reconstructed, and is slightly warped, but still conveys an impression of morphological primitiveness. The frontal bone has only a hint of a boss, and is very sloped (frontal subtense about 18 mm.). Post-orbital constriction is marked (minimum frontal diameter is 87 mm., maximum cranial breadth cannot be measured), and the supra-orbital ridges are huge and very protuberant. In other features, the cranium and mandible are massive, but not primitive-appearing. An iniac fossa is present.

Except for three incisors lost post mortem, all the teeth are present, not excessively worn, and without pathology.

Osteoporosis affects the whole of the area circumscribed by nasion,inion, and the superior temporal lines, and is especially severe in the supra-orbital region, where the pits are suture-like in shape and complexity. Marked pitting is also present in the palatine process and body of the maxilla, the zygomatic processes, the base of the occipital bone, and the left acromion.

The left orbit possesses two supra-orbital foramina and canals, one in the usual place, the other about a centimeter laterad. The right orbit has a supra-orbital notch in the expected place, and a supra-orbital canal and foramen about two centimeters laterad.

Stature, computed from the left humerus, is 173 cm.

There is no artificial deformation of the cranium.

#### DESCRIPTION OF SKELETAL MATERIAL FROM REFUSE

All these remains are postcranial, and are listed in Table 4. The bones are heavy, large, have prominent muscle markings, and are masculine in appearance. A left greater sciatic notch region is present, and is assuredly male.

The left calcaneus found with the refuse has a well-delineated, "scooped-out" area at its postero-superior border. Some breakage has occurred in this region, and it is difficult to make out the full extent of the pathology but it seems to be about 10 mm. in diameter, and 5 to 10 mm. deep. The base and sides of this pit are composed of compact bone.

The one bone on which length can be measured, a left femur, indicates a total stature of 173 cm.

REFERENCE CITED

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TABLE 1

CRANIAL AND POSTCRANIAL MEASUREMENTS, B1

Cranial Measurements

Glabello-opisthocranial length .....	183
Minimum frontal diameter .....	87
External width of palate .....	65
Horizontal circumference .....	<u>495</u>
Nasion-bregma arc .....	129
Bregma-lambda arc .....	121
Nasion-bregma chord .....	110
Bregma-lambda chord .....	102
Frontal subtense .....	18
Condylo-symphyseal length .....	107
Bigonial width .....	112
Bicondylar width .....	<u>119</u>
Minimum breadth of ascending ramus .....	38

Postcranial Measurements

Left humerus:

Maximum length .....	332
Maximum diameter of head .....	43
Midshaft diameter: major* .....	22
Midshaft diameter: minor* .....	17

TABLE 2  
DISCRETE TRAITS, B1

	R	L
Dehiscences of tympanic plate .....	P	x
Auditory exostoses .....	A	A
Division of hypoglossal canal .....	A	A
Superior sagittal sinus .....		Div.
Supra-orbital foramina <sup>1</sup> .....	P	P
Supra-orbital notches <sup>1</sup> .....	P	A

R, L = right, left.

P, A = present, absent.

x = observation impossible.

(Superior sagittal sinus) Div. = the groove for the superior sagittal sinus divides at or above the cruciate eminence, and is continued into the transverse grooves for both lateral sinuses.

<sup>1</sup> See page 3

TABLE 3  
MEASUREMENTS, REFUSE MATERIAL

	<u>R</u>	<u>L</u>
Maximum length .....	x	467
Bicondylar length .....	x	<u>463</u>
Maximum diameter of head .....	x	<u>47</u>
Subtrochanteric diameter, a-p ..	25	25
Subtrochanteric diameter, tr ...	32	32
Midshaft diameter, a-p .....	x	30
Midshaft diameter, tr .....	x	26

Doubtful measurements are underlined.



TABLE 4

Skeletal material of D1-30 by site and level at which found

<u>SQUARE</u>	<u>LEVEL</u>	<u>SKELETAL MATERIAL</u>
0:1	14	Metatarsal
0:1	14	Fragment of left femur
1:2	9	Burial
1:2	11	Fragments of right innominate (2)
1:2	11	Body of lumbar or lower thoracic vertebra
1:2	11	Fragment of right humerus
1:2	13	Fragment of left humerus
1:2	14	Right talus
1:2	15	Left calcaneus
1:2	15	Fragments of right radius (2)
1:2	15	Fragment of right fibula
1:2	15	Fragment of left (?) fibula
1:2	15	Fragment of right ulna
1:2	16	Fragment of right (?) radius
1:2	16	Left patella
1:2	16	Fragment of left innominate
1:3	16	Right metacarpals (2)
1:3	16	Right metatarsals (2)
1:3	16	Fragment of left innominate
1:3	16	Fragment of right ulna
1:3	16	Fragment of right fibula
2:2	1	Fragment of left femur
2:2	9	Right metacarpal
2:2	9	Body of lumbar vertebra
2:2	9	Fragment of right fibula
?	?	Phalanges (5)

Lines have been drawn between those remains which are definitely parts of the same individual, as proven by reconstruction.