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ARCHAEOLOGY OF THE CRAIG ROCK SHELTERS, UPPER NUECES VALLEY,
EDWARDS COUNTY, TEXAS

THESIS.

Presented to the Faculty of the Graduate School of,
The University of Texas in Partial Fulfillment
of the Requirements

For the Degree of,

MASTER OF ARTS,

by

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Austin, Texas

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PREFACE

The purpose of this paper is to describe, analyze, and relate to cultures already known the archaeological material from an Indian site in a region little known to archaeologists. The upper Nueces Valley region, wherein this site is located, is known to be marginal to two of the native areas of culture in Texas. Overlapping of diverse traits is to be expected, therefore, and, as detailed analysis shows, such is actually the case.

The writer takes this occasion to express his sincere appreciation of the work of the fine scholar, Dr. G. C. Engerrand, who so vividly demonstrated to him the basic precepts of anthropology.

Sincere thanks go to Mr. T. N. Campbell who, in the class room, in the laboratory, and in the field, has constantly enlightened and stimulated the author, giving him the training required for the archaeological analysis of this site, and finally supervising the preparation of this manuscript.

The entire body of material described herein was excavated and reported in field notes by Mr. A. T. Jackson, to whom the author is also indebted for his thorough field work and considerate aid.

Mr. A. D. Krieger and Mr. J. C. Kelley have earned the writer's sincere thanks for their valuable interpretations and criticism throughout this study.

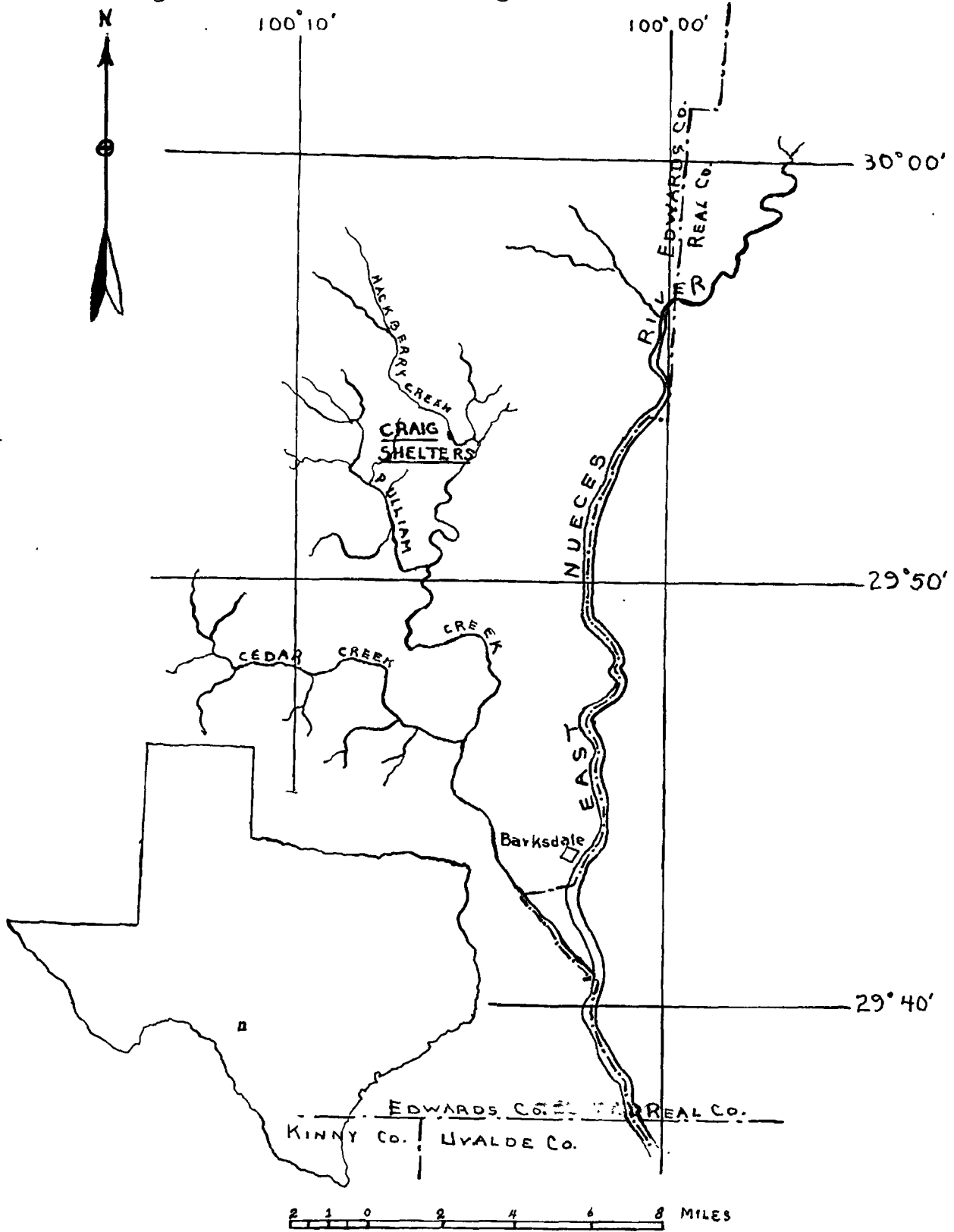
Dr. J. G. McAllister and Dr. H. P. Bybee are accorded special gratitude for their kindness in serving on the supervisory committee in charge of this thesis.

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

Gift of Mrs. Jackson

SEP 4 1942

Figure 1A Location of the Craig Shelters



Legend

-  Creek
-  River
-  County line
-  Lat., long.

*Based on Tex. State Hiway Dept. Map of Edwards and Real Counties, 1936

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GENERAL DESCRIPTION

The Craig Shelters are located on the Hackberry Prong of Pulliam Creek, a tributary of the Nueces River near its headwaters on the southern edge of the Edwards Plateau in southwestern Texas. By road, the site is 13 miles north of Barksdale, southeastern Edwards County, and five miles due west of the East Nueces River.

The rock shelters are erosion features of a limestone bluff on the west side of Hackberry Creek. This small stream is one of the intermittent variety common in western Texas which characteristically appears and disappears along its gravel and boulder strewn course, flowing wholly above the surface only for a short while after rainfall. At no time, however, is there an absence of water, for small seep springs contribute a modicum of water to the rocky stream here and there along its course. Farther downstream, the Hackberry joins three other creeks which form a constant-flowing tributary draining into the Nueces four miles south of Barksdale.

The upper Nueces Valley region is part of the southern edge of the Edwards Plateau. Here, as is the case all along the Balcones Escarpment, Lower Cretaceous rocks of the Comanche Series outcrop. The thick southern limestone facies of the Fredericksburg and Georgetown formations form a region of incised river canyon topography rejuvenated by Late Tertiary faulting and uplift.

The Craig Shelters are located in the eastward-facing bluff of one of these incised river canyons at an elevation of about 2,250 feet above sea level. A talus slope along the base of the cliff runs from the floors

¹Sellards, E. H., The Geology of Texas, Vol. I, 1932, University of Texas Bulletin 3232, p. 278



View of the Five Craig Rock Shelters from the East

of the shelters to the broad, partially wooded stream bed about one hundred feet below. The shelters themselves are eroded recesses in a marly limestone stratum about thirty feet thick, overlain and underlain by more resistant crystalline limestone beds. Above the shelters the bluff rises abruptly for a maximum of about two hundred feet. The bluff is a facet or eroded spur of a hill and is therefore pyramidal in vertical outline, sloping off almost to the stream level at each extremity.

The general climatic conditions prevailing here may be classified as sub-humid. The annual rainfall is only 24 to 26 inches.² The temperature is characterized by rapid changes, marked extremes, and large ranges, both diurnal and annual.³ The average January temperature here is between 48 and 50 degrees Fahrenheit; the average July temperature, 78 to 82 degrees.⁴ The soil mantle is thin, and the vegetation is sparse.

Tharp⁵ has included this region in his "oak-cedar" province. Spanish oak, scrub oak, shinoak, and Mexican cedar trees are to be found on the hill sides. Pecan, bur oak, elm, hackberry, and liveoak trees mark the stream courses. To this general list may be added vegetation observed by Mr. A.T. Jackson⁶ in the immediate vicinity of the shelters: willow, mesquite, wild cherry, and pinon trees, all rather scarce; mountain laurel, red-bud, agarita, black persimmon, buckeye, and mountain grape, all found only occasionally. Lechuguilla, sotol, yucca, and jaboncilla plants may also be found here, as well as "prickly pear" (*Opuntia*) and "strawberry" cacti. Tharp mentions sage, grama, needle, and buffalo grass as being most common in this province.⁷

²Yearbook of Agriculture, Climate and Man, U.S. Dept. of Agriculture, 1941, p. 1142

³ibid, p. 1143

⁴ibid, p. 1137

⁵Tharp, B.C., The Vegetation of Texas, Texas Academy of Sciences, 1939, p. 14

⁶Jackson, A.T., Field Notes, Book I, 1934, p.52

⁷Tharp, op. cit., p. 14

There is no reason to believe that the conditions described above are much different from those which existed during the period of occupation of the Craig Shelters, some hundreds of years before the Conquest. The only change which might be inferred is in the spread of the Mexican cedar over the area and the decrease in the profusion of agave plants. Various longtime residents of Texas have observed that the cedar has encroached on this limestone region in recent generations. It was entirely absent when Bartlett traversed the area in 1852.⁸

The fauna has been decimated, of course, although "deer and wild turkey are still plentiful in the vicinity, and honey hangs from a hole in the bluff."⁹ The bison are gone, represented now by a few bones found in the shelter, but the ubiquitous rabbit and other small animals are plentiful.

Reconnaissance and Excavation

In early March, 1934, at the direction of the late Dr. J. E. Pearce, chairman of The University of Texas Department of Anthropology and director of research in Texas archaeology, Mr. A. T. Jackson, field foreman, spent one week reconnoitering sites along the upper Nueces River drainage in Kinney, Edwards, and Real Counties. Several of these were rock shelters, and the others were burnt rock middens, similar in aspect to those found in central Texas. The rock shelters site on the R. T. (Bob) Craig Ranch was selected as the most promising for a test of the archaeological material of the area.

⁸Bartlett, J. R., Explorations and Incidents in Texas, Vol. II, 1854, p. 520

⁹Jackson, A. T., op. cit., p. 53



Interior of Shelter IV

The rows of stakes in the foreground mark off five foot squares. The floor of this shelter slopes downward toward the back more than the others do because much loose stone has fallen from the outer edge of the overhang and piled up on the midden material.

Dr. Pearce made available a sum from the Rockefeller Foundation for Scientific Research. Mr. Jackson returned to the Craig site with two workmen from Austin and two others from nearby Camp Wood and began excavation on March 16, 1934.

The surface of each shelter was staked off in five foot squares. The artifacts recovered in each shelter were labeled with their distance from the rear of the midden deposit and the distance from the south wall and the depth as each square was dug. Subsequent faulty re-numbering of the specimens by laboratory workers caused the irretrievable loss of much of this valuable information.

When this work was completed on April 3, 1934, with the excavation of the last of the midden material, Mr. Jackson and his crew went to other sites nearby. One of these, on the L.M. Fields Ranch, only one and a half miles from the Craig site, was a small rock shelter which produced a few projectile points and some interesting fibrous material, including sandals, matting, and basketry. This, and other available material from the region, merits the attention of those interested in going beyond the limits of this paper and further defining the complexes present in the area.

Description of the Shelters

The Craig Shelters, shown in Fig. 2, which is based on a field sketch, are open to the east and lie along a north-south line. They are numbered I through V from north to south. Including the ledge at the southern end of the last shelter, they stretch for almost 500 feet along the face of the cliff, each in the same horizontal plane, separated from each other by narrow partitions of uneroded marl.

Shelter I is a natural amphitheatre, 54 feet wide at the opening and

almost 20 feet high. It extends for 83 feet into the hillside. The up-sloping rear portion of the stone floor and the encroachment of a ledge on each side of the cave narrows the area covered by occupational debris to a space 50 feet long and 40 feet wide at the mouth where it merges with the talus, and 30 feet wide at the rear. The maximum depth of the deposit was reached 31 feet from the inner edge of the midden at 78 inches. A pit dug by the landowner, several years ago near the center of the deposit, was eight feet in diameter and four feet deep at the time of this excavation. The natural stone partition between Shelters I and II is 15 feet thick at its outer extremity.

Shelter II is semi-circular in outline, 66 feet wide at the entrance, which is 16 feet high, and 59 feet deep. The rear half of the shelter is bare stone which slopes gently upwards to within six feet of the roof. The cultural debris reached a maximum depth of 39 inches, 20 feet from the rear of the deposits. The wall between Shelters II and III is three feet thick.

Shelter III is roughly crescentic in outline. The entrance is 79 feet wide and 18 feet high. Although it extends into the bluff for 57 feet, an ancient cave-in of the overhanging cliff has strewn all but the innermost few feet of the shelter with large boulders. Very little evidence of habitation was found here, and the midden material was not more than one foot in thickness. Although Shelters III and IV have a common roof over their outer edges, they are separated towards the rear by a marly projection 17 feet wide.

Shelter IV was also affected by the rock fall which piled boulders in Shelter III so that the entrance of IV, while it is 77 feet wide, is only three feet high at the north end. It reaches 18 feet in height, however, at the southern end and projects 47 feet into the cliff. The crescent-shaped inner 20 feet of the shelter was covered with midden material to a

maximum depth of two feet. These deposits were thin toward the rear of the shelter, but thickened to their maximum depth where they mingled with the debris fallen from the roof. Cultural material was found both above and below some of the fallen blocks of stone. Eight feet of marl separate Shelter IV and Shelter V.

Shelter V is semi-circular in general outline, although it is elongated to the rear by two small solution crevasses which run back into the bluff some 20 feet. The outer 40 feet of the shelter expands to an entrance 56 feet wide and about 20 feet high. Only a very few inches of ashy midden material was found here, and no artifacts were present.

Adjoining Shelter V on the south is a ledge 150 feet long and eight to ten feet wide. The southernmost 35 feet of this ledge is ten feet wide and covered with eight to ten inches of midden material and some burnt rocks on the outer edge.

The only modification of these natural dwellings attempted by the inhabitants was the erection of fills or windbreaks in the mouth of Shelter I. This supposed device for protection from the elements consists of two masses of yellow shale and haphazard limestone slabs, intermixed with small quantities of ash, flint chips, and snail shells. The fills are roughly triangular as seen from above, one on each side of the entrance extending toward the center for about 15 feet, leaving about ten feet clear for the passageway, and extending inwards along each wall for ten feet. As well as may be determined from the scanty notes on their excavation, the fills were about five feet high, rising from the original shale floor to within a few inches of the top of the midden material as it was found at the time of the excavation.

The character of the deposits in each of these shelters is relatively uniform. It appears that at no time was there a real conscious effort made to

introduce foreign materials such as river sand or heavy carpets of grasses. Neither were there stratigraphic breaks found in the nature of layers of dung, stalagmitic strata, or other interruptive phenomena.

Shelters III, IV, and V contained but little midden material which in each case was quite homogeneous ashy soil. Shelters I and II contained more extensive deposits in which several facies were observable. The evidence on the location of the various classes of artifacts found in these deposits is given in Chapter II, wherein all of the material culture traits are described.



Windbreak in the Entrance of Shelter I

The man is standing on the part of the south windbreak which reaches north to near the center of the entrance.

MATERIAL CULTURE TRAITS

Pictographs

Although numerous designs were once painted on the walls of the various shelters at this site, weathering has obliterated most of them. Dim splotches of red and orange pigment are yet observable in each of the five shelters and on the wall at the south end of the ledge. Four of the many designs in Shelter II and two in another shelter, number unknown, are all that may be even partially traced from the whole series. The reproductions in Figure 2 and the interpretations which follow are from Jackson's Picture-Writing of Texas Indians.

The larger element in the first design is 18 inches long. Such figure eight design elements are numerous in Val Verde County, which adjoins Edwards County on the west.¹⁰ The larger of the two "rabbit sticks" in the second design is 14 inches long. Design 3, a "bird track", is nine inches long. The fourth design, thought to represent part of a rabbit snare, is of unknown size. In the fifth design the larger "square-shouldered human figure" is 16 inches high. The "centipede" or "scorpion", the sixth design, is 19 inches long over all.

Designs similar to each of these have been found in many west Texas counties where rock shelters are present. The maximum observed development and use of these elements appears to center in the lower Pecos region of Val Verde County.

¹⁰

Jackson, A. T., Picture-Writing of Texas Indians, University of Texas Publication 3809, 1938, p. 440

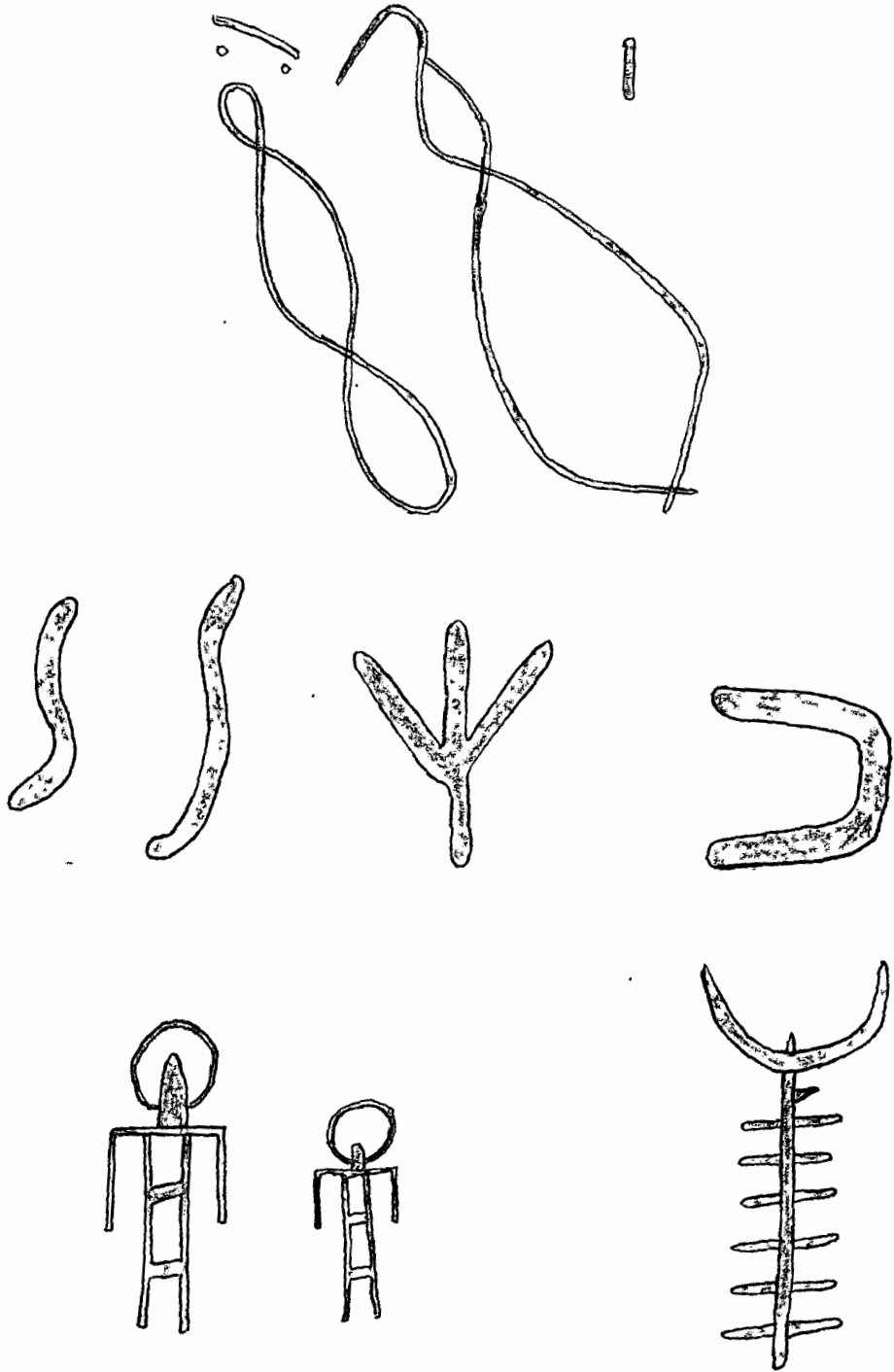


Figure 2

Burials

Evidences of seven human burials were discovered, one in Shelter I, four in Shelter II, and two in Shelter IV. Six of these were infant burials, and one much disturbed interment was that of an adult.

In the three determinable cases the burial was flexed inhumation with the head to the northeast. Two skeletons lay on the left side, one on the right. The other three infant skeletons were so badly broken and scattered that secondary inhumation might be inferred, although disturbance by rodents cannot be ruled out.

The adult remains consisted of four teeth, three of them much worn molars, one vertebrae, and several toe and finger bones scattered about, two inches under the surface and 47 feet from the rear edge of Shelter IV.

Four of the infant burials were each covered with a metate. Two of these were further covered with natural slabs of limestone. The other burials, all much disturbed, were covered only by the ashy midden material.

Two of the interments protected by metates show various animal bones in close association. These rabbit, deer, vulture, and turkey bones may represent food offerings. Bulimulus gastropod shells in and about several of the graves may either have been placed there, or the snails may have crawled there. Insufficient evidence exists to determine whether these common gastropods were much used for food or fed in great numbers on camp refuse, although cases are known for each condition.

Artifacts even tentatively associated with the burials were few in number and confined to the four graves covered by metates. Projectile points were found in each of these; fling knives were found in three, and side scrapers in two. Other possible grave furniture included two manos,



Burial Number Four, Shelter I

The pile of limestone slabs constitutes the grave covering. On the slab to the right may be seen a flint knife and other associated artifacts. Small snail shells are to be seen all about the burial.



Skeletal Remains in Burial Number Four

These fragmentary remains of an infant were uncovered when the protecting limestone slabs were removed.

Table 1

Number of Burial	Human Skeletal Remains	Grave Covering	Associated Artifacts	Associated Snail Shells and Animal Bones	Position of the Skeleton	Orientation of the Skeleton	Depth from Surface to Grave Floor
1	Scattered fragments of infant skull	Ashy soil	none	Numerous snail shells	Indeterminate	Indeterminate	4 inches
2	Scattered fragments of infant skull	Ashy soil	none	Numerous snail shells	Indeterminate	Indeterminate	30 inches
3	Skull and fragments of infant skeleton	Metate, grinding pit down	1 projectile point, 1 knife, 1 side scraper, fragments of basket	Numerous snail shells	Flexed, on left side	Head to the northeast	26 inches
4	Infant skull and skeleton	Metate, grinding pit up; 7 limestone slabs	2 projectile points, 1 knife	None	Flexed, on left side	Head to the northeast	45 inches
5	Fragments of infant skeleton and skull	Metate, grinding pit up; small stones	1 pebble streaked with red, 1 bone bead, 2 projectile points, 1 knife, 1 fragment of perforator	Rabbit bones and a split deer bone	Flexed, on right side	Head to the northeast	24 inches
6	Broken and split bones and part of infant skull	Metate, 6 limestone slabs, 7 small stones	1 projectile point, 2 side scrapers, 2 manos, 2 thin choppers	Vulture and turkey bones	Indeterminate	Indeterminate	65 inches
7	4 adult human teeth, finger and toe bones, 1 vertebrae	Ashy soil	none	none	Indeterminate	Indeterminate	2 inches

two thin choppers, one bird bone bead, one distal fragment of a flint perforator, and one pebble streaked with red pigment.

The only evidence of basketry or matting was found in burial number three. The dampness of the soil towards the bottom of the deposits in these shelters may have completely destroyed any fiber materials which might have been present in the other graves.

Stone Artifacts

Chipped Stone

Projectile Points

A total of 132 projectile points was recovered from the site. Distal projectile point fragments numbered 34 and were not considered in the series. In the description of the projectile points, attention is focused on the outline, especially that of the base. All of the projectile points were made of the chert or flint varieties of chalcedony. No chipped stone artifacts of obsidian, petrified wood, slate, or quartzite were found. No grinding or polishing is in evidence on any of these specimens. Both percussion and pressure flaking techniques were used, and most of the smaller pressure flaked points show fine marginal retouching.

The forms arbitrarily selected as typical of the series do not necessarily have any relation to true types of projectile points, as the selection was made primarily as an aid in breaking the collection into smaller units which might be readily described. The problem of the validity of the classification groups and sub-groups as possible true types is taken up in the last chapter.

The seven general forms which have been chosen to represent the series are described below and are drawn in figures 3, 4, and 5. The drawings

are full scale outlines of the characteristic specimens from each group. The classification groups are designated by capital Roman numerals. Major varieties within each group are designated by capital letters.

I. Contracting Stem

The greatest width is at the shoulders. The stem contracts to a narrow base. The shoulders are rounded to acute, and the blade is ovate to triangular.

The projectile points of sub-groups A, B, and C have poorly developed contracting stems with convex bases. The shoulders are rounded; the blade is ovate. The width is from 32 to 45 mm; the length is from 62 to 83 mm.

The projectile points in sub-group D have well developed contracting stems. The bases are straight, and the shoulders are strong and acute without barbs. The blades are triangular. The width is from 30 to 32 mm; the length is 64 mm.

II. Expanding Stem, Straight Base

The greatest width is either immediately above or immediately below the side notch, with very little difference in either case. The stem consists only of the portion of blade below the distal extreme of the side notch. The base is straight. The shoulders are absent or poorly defined as the angle between the upper end of the side notch and the edge of the blade. The blade is an elongate triangle. The width is from 19 to 28 mm; the length is from 38 to 66 mm. There are three sub-groups.

III. Expanding Stem, Concave Base

The greatest width is across the shoulders or across the extremities of the barbs where they are present. The stem is expanded to flared, with a great variety of basal concavities ranging from small notches to broad curves. The shoulders are strong, acute to barbed. The blade is triangular to slightly ovate. The width is from 19 to 44 mm; the length is from 30

to 66 mm. There are eight sub-groups.

IV. Parallel-sided Stem, Notched Base

The greatest width is at or immediately above the shoulders. The stem is parallel-sided to slightly convex with a strong basal notch extending well into the stem. The shoulders are poorly developed, obtuse to acute, and without barbs. The blade is ovate and elongated. The width is from 32 to 44 mm; the length is from 50 to 92 mm. There are six sub-groups.

V. Parallel-sided Stem, Straight Base

The greatest width is across the extremities of the barbs. The stem is parallel-sided to very slightly expanded. The base is straight, and the shoulders are broad with small barbs. The blade is triangular. The width is from 30 to 34 mm; the length is 58 mm. There are no sub-groups.

VI. Stemless

The greatest width is at or near the base. The bases are slightly convex, straight, slightly concave, and strongly concave. The blade is triangular to ovate, beveled on opposite edges where the base is convex. The width is from 20 to 40 mm; the length is from 43 to 72 mm. There are four sub-groups.

VII. Small Projectile Points

The greatest width is across the extremities of the barbs where they are present. The stems are contracted to expanded or non-existent, as in sub-group J. The bases are concave to convex. The shoulders are strong and acute where present. The blade is triangular, thin, and finely retouched with concave to convex edges. The width is from 13 to 26 mm; the length is from 22 to 38 mm. There are ten sub-groups.

Group VI and sub-group VII-J are comprised of stemless specimens included in the series of projectile points largely because of the fact that these blades are characteristically thinned in the middle of the base

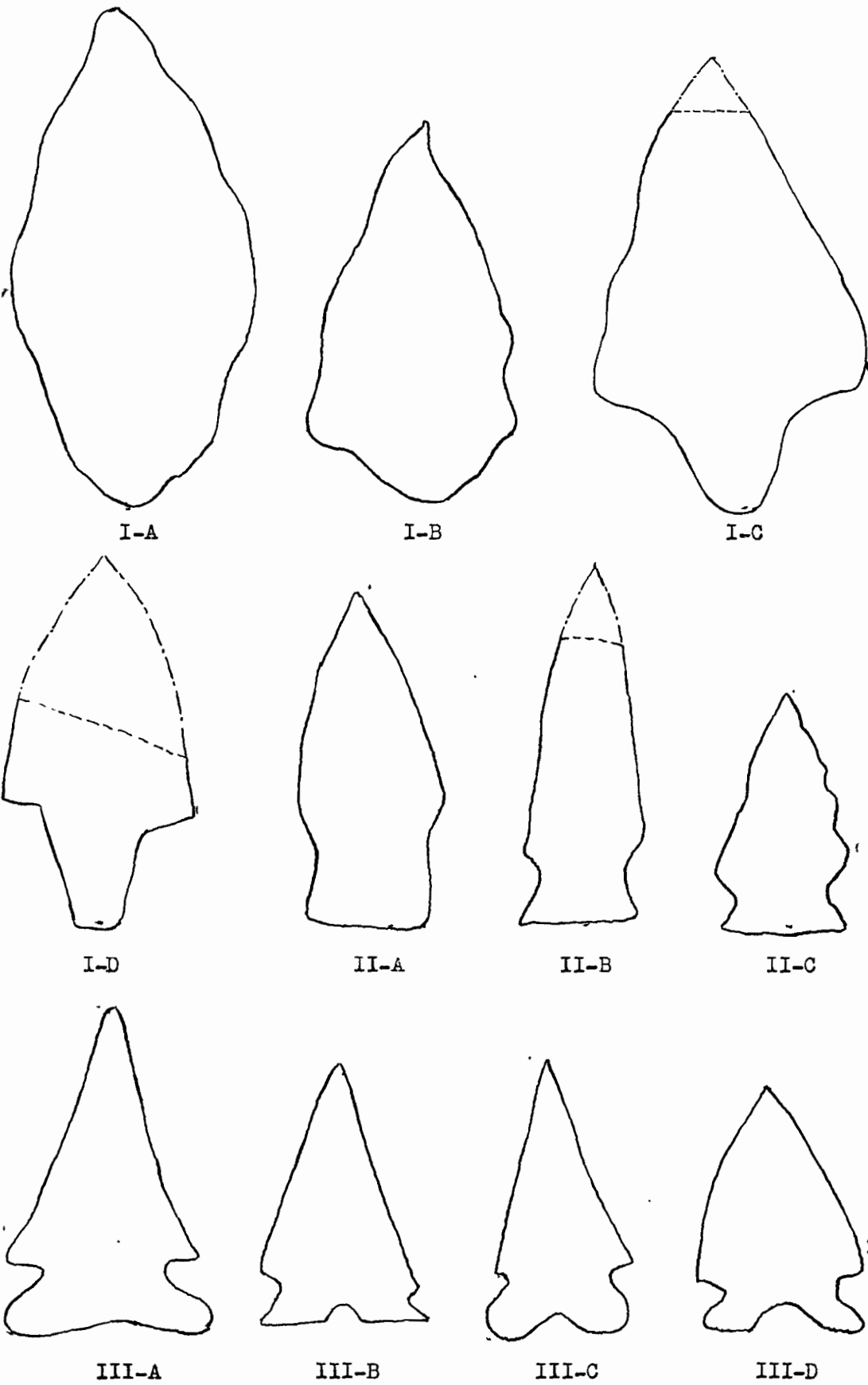


Figure 3

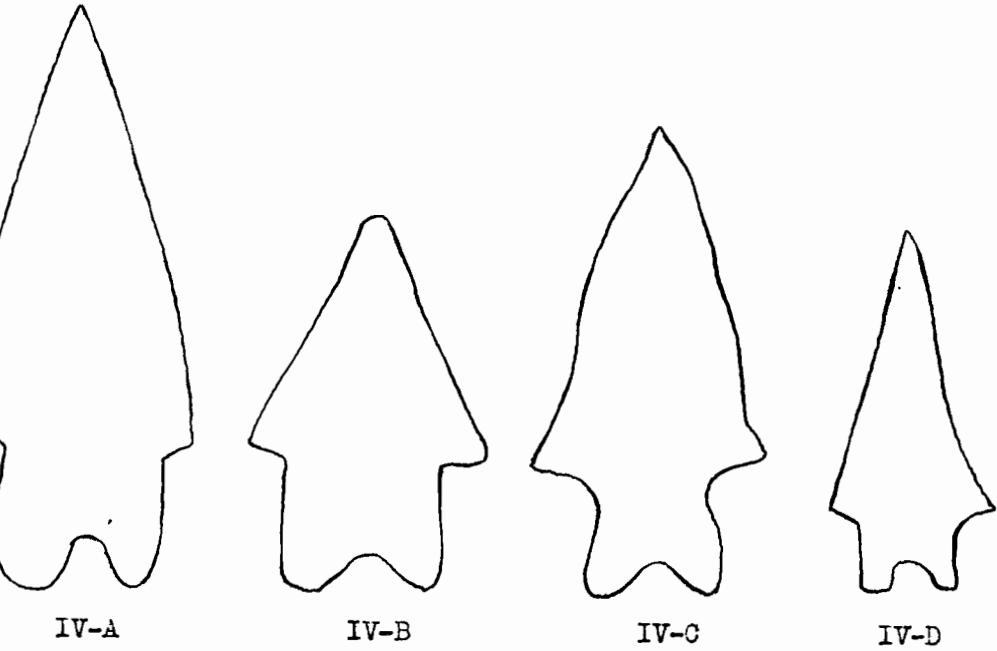
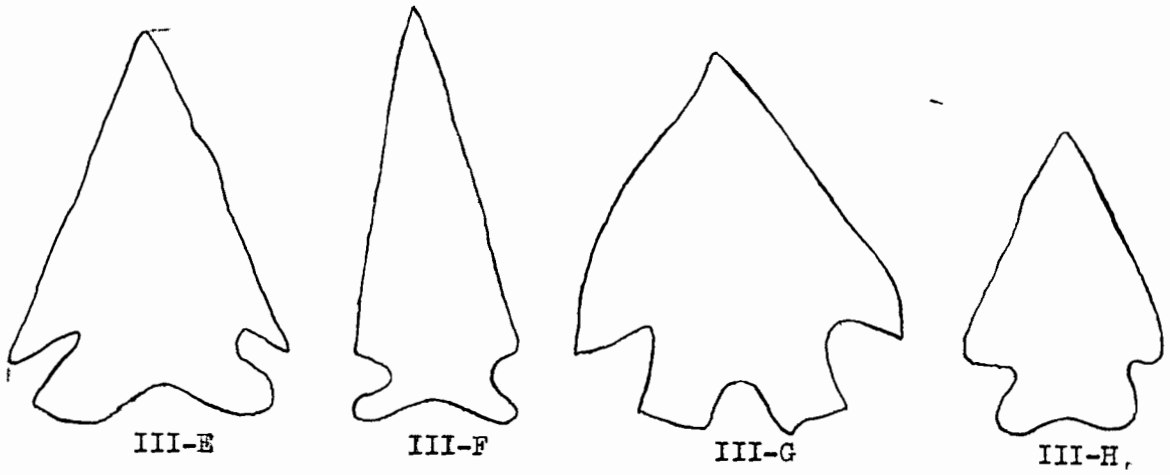


Figure 4

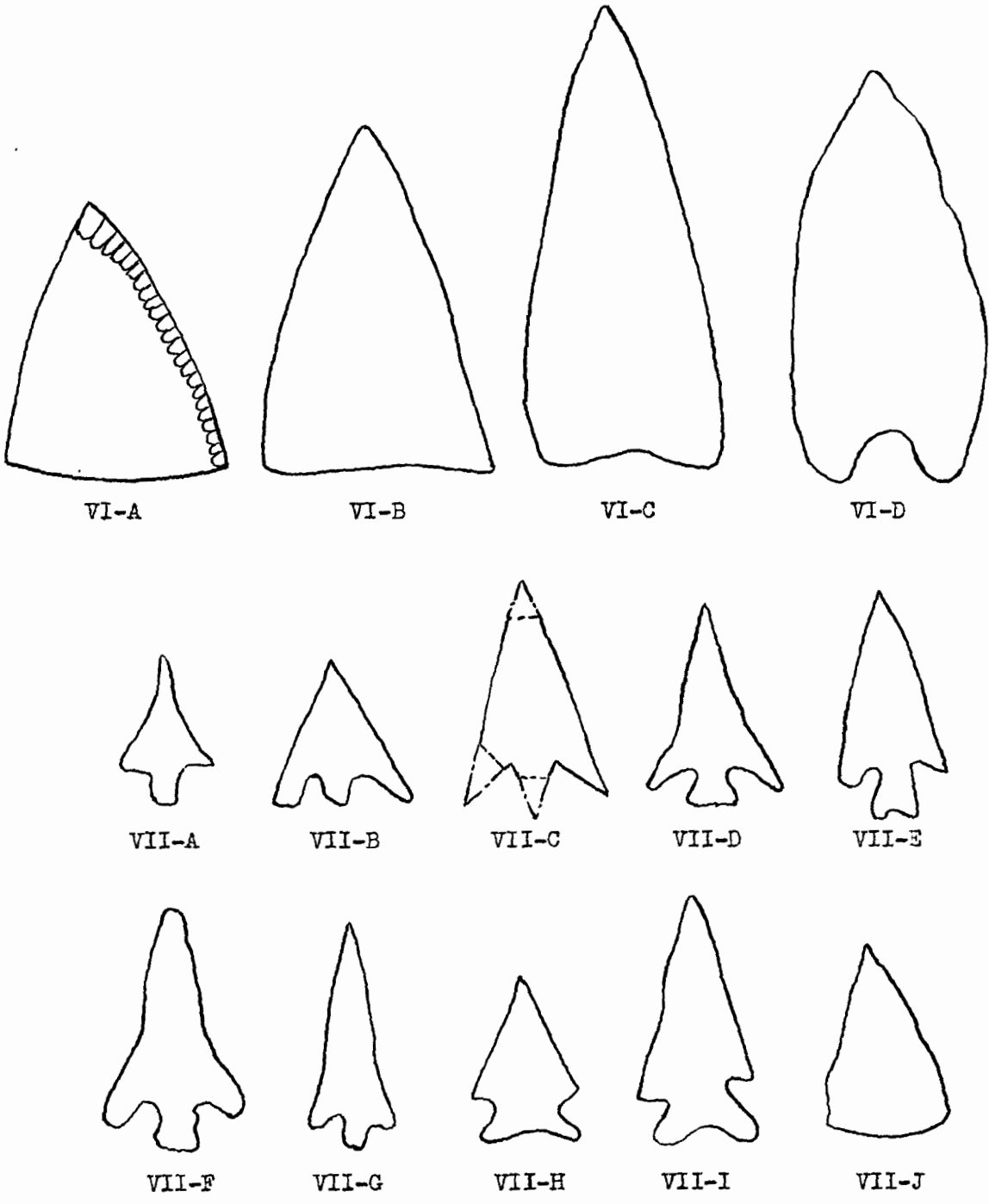


Figure 5

as is the case for such specimens as have been observed attached to projectile shafts.

The numerical distribution of the seven classification groups is given below in Table 2. More exhaustive tables are given in Chapter III.

Classification Group	Number of Specimens	Percentage of Total Number
I	7	5.3
II	16	12.1
III	39	29.6
IV	11	8.3
V	3	2.3
VI	7	5.3
VII	49	37.1
	132	

Table 2

Knives

A total of 209 knives was recovered from the Craig Shelters. These were basal portions susceptible to some degree of classification. Fragmentary pointed blades, probably of knives, totaled 90. The latter, of course, cannot be taken into consideration in describing the knives as their classificatory status is uncertain.

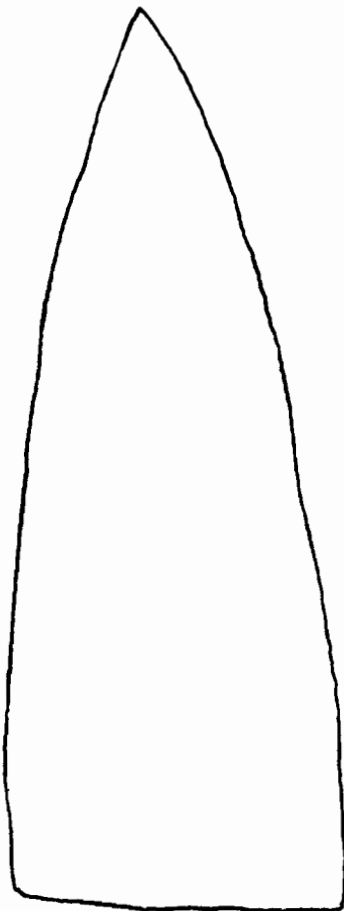
In classifying the knives, form assumes major importance, as all of the specimens were percussion chipped or pressure flaked from common varieties of flint and are not otherwise distinctive.

The basis for the following classification is the relative straightness or convexity of the base. A series might be set up which would show the gradual emergence of one base from another, but it is desirable in this instance to separate the two extremes and show their components. Here, again, one cannot very well speak of types, for they are not clearly defined as yet. The existing correlations will be given in Chapter III.

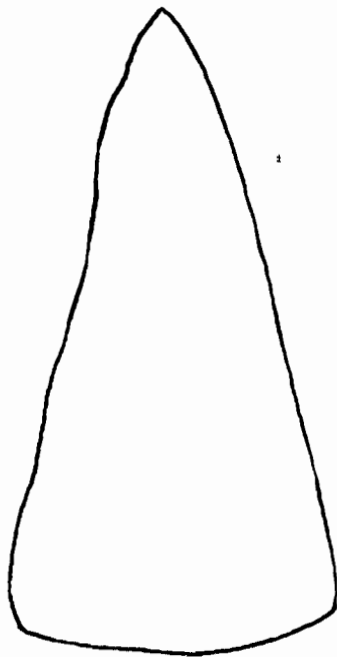
Figures 6 and 7 illustrate the chief features of each classification group and sub-group.

I. Straight Base

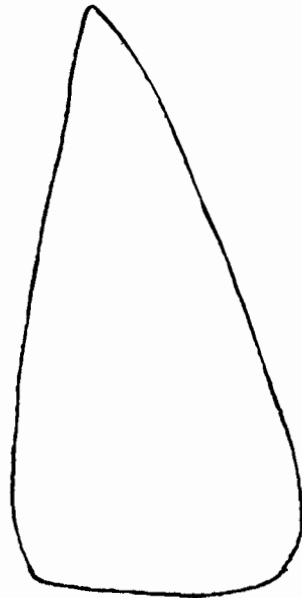
The specimens of this group are all triangular in outline. The greatest width is across the base which is straight to very slightly convex. Where the edges of the blade are almost straight, they are sub-parallel (I-E) to acutely convergent (I-B). The specimens with slightly convex bases also have slightly convex or arcuate edges (I-C, I-D). These specimens range from 20 to 50 mm in width, 40 to 126 mm in length, and 5 to 12 mm in thickness.



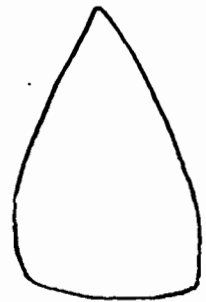
I-A



I-B



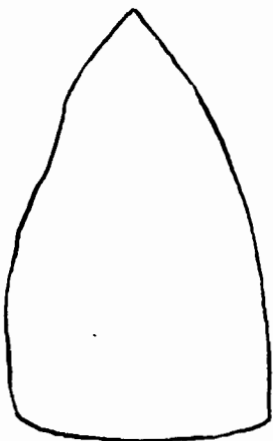
I-B



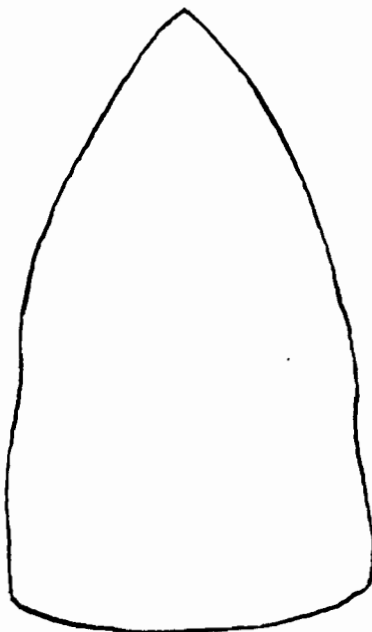
I-B



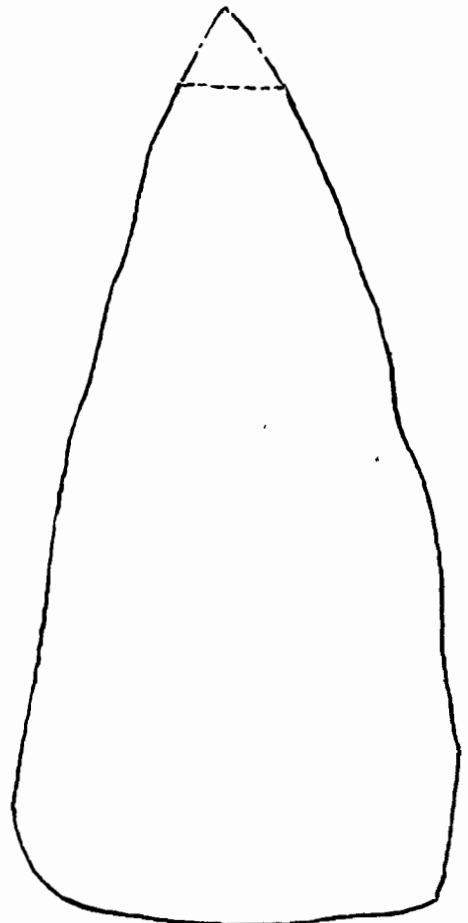
I-E



I-D

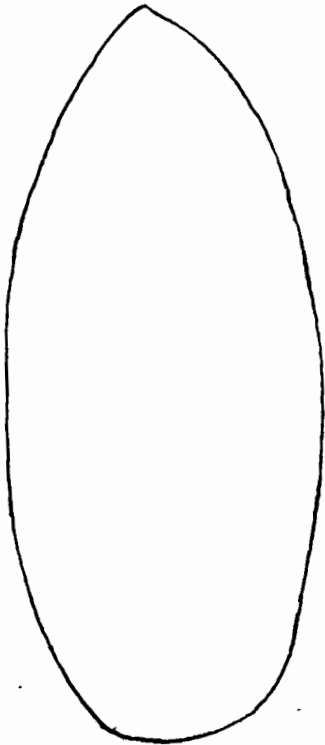


I-D

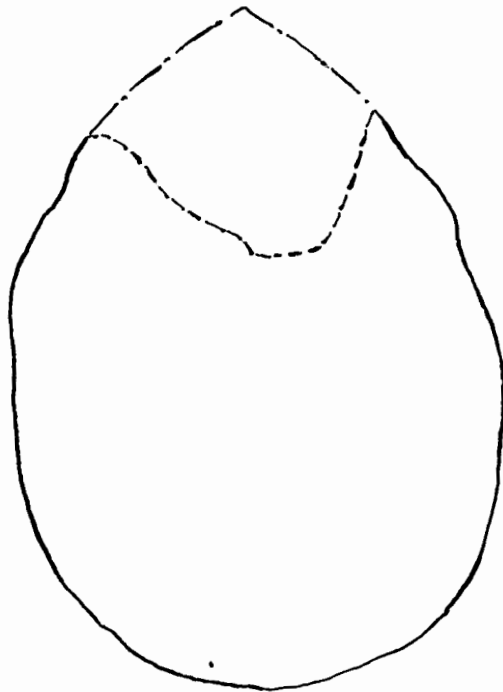


I-C

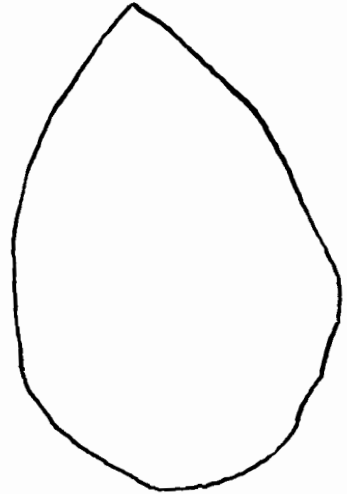
Straight Base Knives
Figure 6



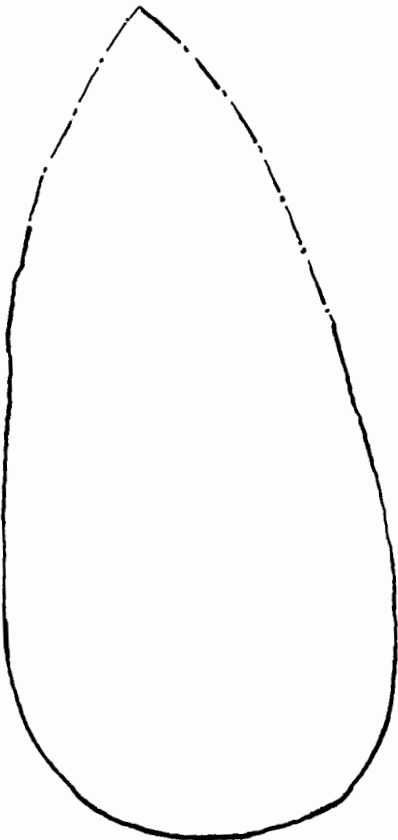
II-A



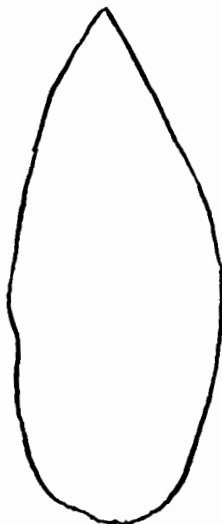
II-B



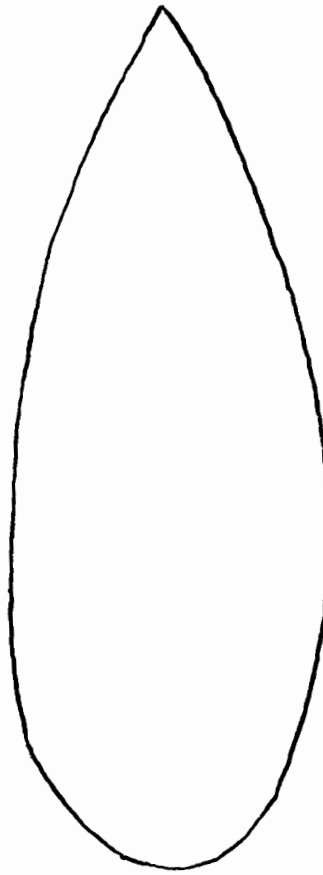
II-C



II-D



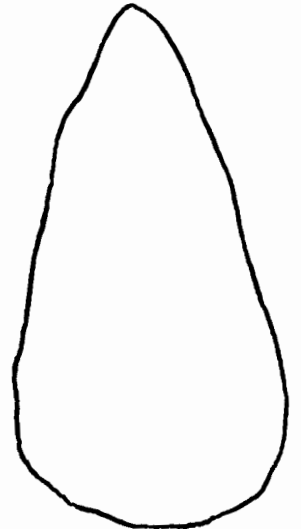
II-E



II-E



II-F



II-F

Convex Base Knives
Figure 7

II. Convex Base

All of the specimens in this group are oval in outline and are more bluntly pointed at one end. The bases are uniformly semi-circular. The greatest width is across the middle (II-A, II-B, II-C, and II-E) or across the proximal one third of the specimen (I-D, I-F). The width of these specimens is from 24 to 75 mm; the length is from 33 to 180 mm; and the thickness is from 5 to 14 mm.

Although there has been considerable speculation on the subject, no agreement seems to exist as to the technological position which the above described knives, and the pointed blades, described in the following section, should occupy. There is evidence from other shelters where hafted specimens occur to show that some of the knives were hafted so that their broad ends might be used.¹¹ Other well-preserved specimens show that the pointed end was the more important.¹² Still other specimens are mounted longitudinally so that the long side edge might be utilized for cutting.

Due to the absence of hafted specimens in this site and the confusing character of the available evidence, it is impossible to assign either the thinner pointed blades (i.e. knives) or the cruder blades (i.e. pointed blades) any definite place in the native industry of the Craig Shelters. The wide range in form of these blades, especially the knives, might indicate that a variety of uses were made of such tools. It is to be expected that additional finds of hafted blades and a correlation of shape of blade to manner and type of usage will make it possible to associate such artifacts with the manufacturing trait they express. When this is accomplished

¹¹Smith, V.J., "Carved Rock Shelter", Bulletin, Texas Archaeological and Paleontological Society, Vol. 10, 1938, Plate 29, P. 225

¹²Harrington, M.R., Gypsum Cave, Nevada, Southwest Museum Papers, No.8, Fig. 24, p. 46. See also:

Martin, G.C., Big Bend Basketmaker Papers, No.3, Witte Memorial Museum, 1937, Pl. XXXIII, p. 82. Also Paper 1, of the same series, p. 9

we will be able to relegate more readily such blades to their proper cultural horizon through a knowledge of what constitutes a significant variation within the series and what range of forms may be expected within a pure culture.

Pointed Blades

Twenty-nine relatively large, crudely chipped blades were taken from the Craig Shelters. In the present classification, "pointed blades" are differentiated from knives in that the latter are characteristically thin, quite carefully flaked, and regular in outline. The symmetry of the larger blades is imperfect and the flaking never more than the result of heavy percussion. Such blades, with slight variations on one direction or another, have been termed "axes", "gouges", "flake knives", and "war club spikes."

All of the blades so designated here are ovate in outline, having one broadly rounded extremity and one more or less pointed end. They range in size from 85 to 105 mm. in length; 35 to 70 mm in width; and 10 to 20 mm in thickness.

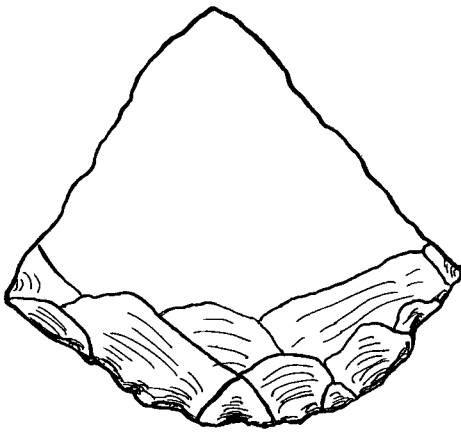
Nine pointed blades of this type were recovered from Shelter I and 20 from Shelter II. No artifacts of this class were recovered from the other shelters of this site. No data exists concerning the vertical position of these specimens within the deposit.

Choppers

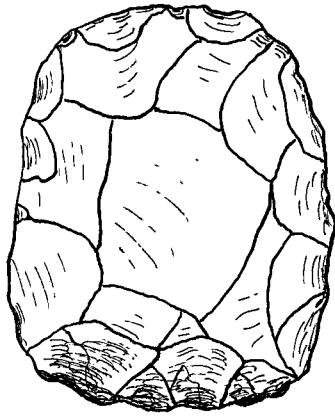
Twenty artifacts of this class were recovered from the various shelters. Choppers, also called "bone crushers" and more rarely "axes" or "hoe-blades", are defined here as relatively large and heavy nodules, cores, or massive flakes of flint, with several large flakes or chips removed from one edge in such a way that a strong, sinuous, and rather sharp cutting edge is developed. As the uses to which such implements might be put are manifold, the relatively small number recovered here does not seem to indicate the development of any of the industries in which such crude tools are commonly associated, such as heavy wood or bone working.

Two of the 20 choppers are simple nodules of flint, about 120 mm in length, 90 mm in width, and 40 mm in thickness, with only a few large chips removed from one edge (Fig. 8-A). A similar specimen is a nodule with the edge opposite the cutting surface somewhat battered. This is the only specimen in the whole collection identified as a hammerstone. Ten cores, roughly oval in outline, are each flaked on one edge to produce the characteristic chopping blade. These cores average 120 mm in length, 100 mm in width, and 30 mm in thickness (Fig. 8-B). Four more or less circular cores are flaked on both sides all around the edge. These are about 100 mm in diameter and 25 mm thick. (Fig. 8-C).

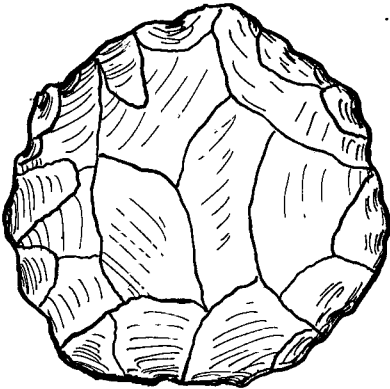
One large, relatively thin flake, 122 mm long, 100 mm wide, and 15 mm thick, is chipped from both sides on one of the narrower edges. The thinness of this specimen sets it apart from the others of similar manufacture. There is no evidence of smoothing or polishing on the edges of the artifact which should have been the case if it were used as a hoe-blade. (Fig. 8-D).



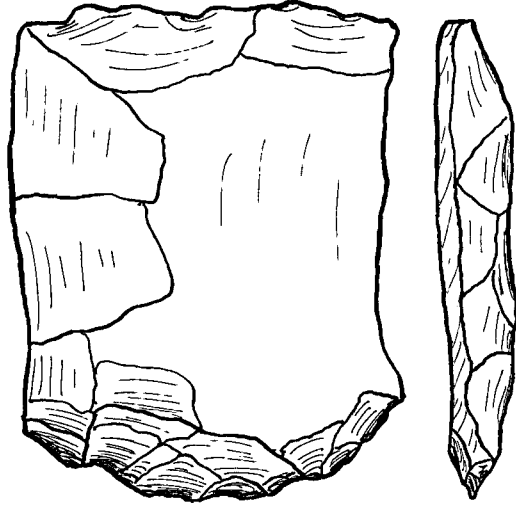
A



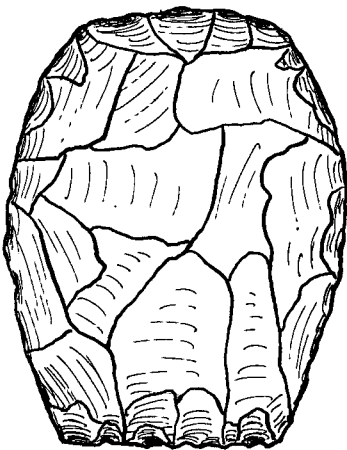
B



C



D



E



F

Choppers
Figure 8

(One half natural size)

A similar artifact, 110 mm long, 95 mm wide, and 25 mm in maximum thickness, found on the surface of one of the shelters during reconnaissance, differs in that it is a core rather than a flake and as such is chipped all around the edges. Only one of the narrower edges, as in the case of the specimen just described, is chipped for use in cutting (Fig. 8-E).

Another specimen recovered from the surface of one of the shelters, which one is not known, is 100 mm long, 70 mm wide, and 20 mm thick, with a broad beak on the flaked end. This slight protuberance exists due to the fact that a heavy flake was struck from each side of the projection. As such a bit might serve quite well in gouging operations, as well as chopping, absolute classification cannot be made. It certainly does not represent one of the class of flint artifacts commonly described as gouges (Fig. 8-F).

Shelter I yielded six of the choppers, Shelter II, 12, and two were found on the surface. None was reported for the other shelters.

Gravers

A total of nine burins or engraving tools was recovered from the R. T. Craig Rock Shelters. In each case identification was made on the basis of arbitrary criteria in common usage among archaeologists in lieu of non-existent ethnological data.

Gravers are those artifacts made by the Indians for the purpose of engraving bone, shell, horn, wood, and stone. They are, in most cases, made of a material having a fine grain and a dense composition with a conchoidal fracture, such as flint, jasper, chert, chalcedony, agate, and similar materials. They consist of a short, sharp point, flat on the under surface and triangular in cross-section, worked on a fortuitous flake, a scraper, or some other artifact.¹³

Five of the gravers from this site are thin flint flakes. Four

¹³Wright, Welty, "The Type, Distribution, and Occurrence of Flint Gravers in Texas", Bulletin, Texas Archaeological and Paleontological Society, September, 1940, p. 31

specimens are reworked fragments of knives. A detailed description of each graver is given below, with the hope that such amplification of this relatively minor topic may enable other workers to envision adequately these specimens so that they may be of value for correlation and typology.

I. Flake Gravers

One large flake, 95 mm long, 85 mm wide, and 12 mm in maximum thickness, has three well-developed engraving points along the edges; one at the extremity of the ovate flake, and two on one side, these latter two being separated by a retouched concavity 20 mm wide. A similar concavity exists on the same edge adjacent to the beak nearest the bulbar end of the flake. The remainder of this edge is retouched on one side as a scraper. The opposite edge is slightly retouched along its whole length as a scraper. The evidence here is that the specimen in question was primarily a graving tool, the scraping edges being of secondary importance as indicated by their relative lack of refinement.

A smaller flake, 50 mm long, 40 mm wide, and 12 mm thick, has one engraving point on an edge flanked by two concavities, each retouched from opposite sides so that this edge of the artifact is "S" shaped with the point in the middle of the sinuosity. The remainder of the periphery of this irregular flake is retouched slightly from both sides, as is the case for knives.

Two other artifacts, similar in most respects to the one just described, are flake burins lacking the pronounced concavities on either side of the worked point.

II. Gravers Reworked on Broken Knives

An elongated ovate artifact, 65 mm long, 30 mm wide, and 10 mm thick, evidently an unsuccessful attempt to make a small convex base knife, has a strong beak worked on the narrow end. The edges of this specimen are

much battered as though repeated blows had been struck in attempting to thin the heavy flake. While the outline is that of the small ovate knife common in this site, the object may be a complete graver.

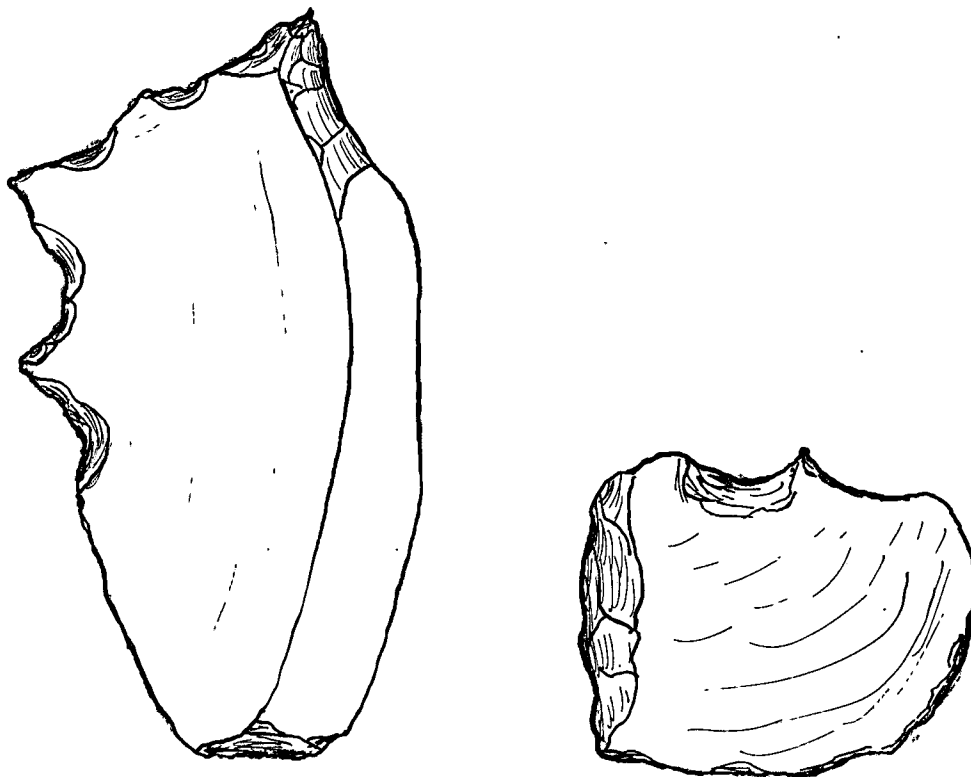
A somewhat similar artifact, 55 mm long, 40 mm wide, and 15 mm thick, is less regular in outline and has an engraving beak on the broader extremity as well as on the narrower. On one edge is a retouched convexity 7 mm wide, on the other a small amount of retouching making an indefinite scraper edge.

A long, thin blade, 55 mm long, 30 mm wide, and 5 mm thick, apparently the basal half of a straight base knife with one corner of the base broken off, is retouched along the latter fracture to form a scraping edge. An engraving point is worked on the lower portion of this edge near where it joins the original edge of the base.

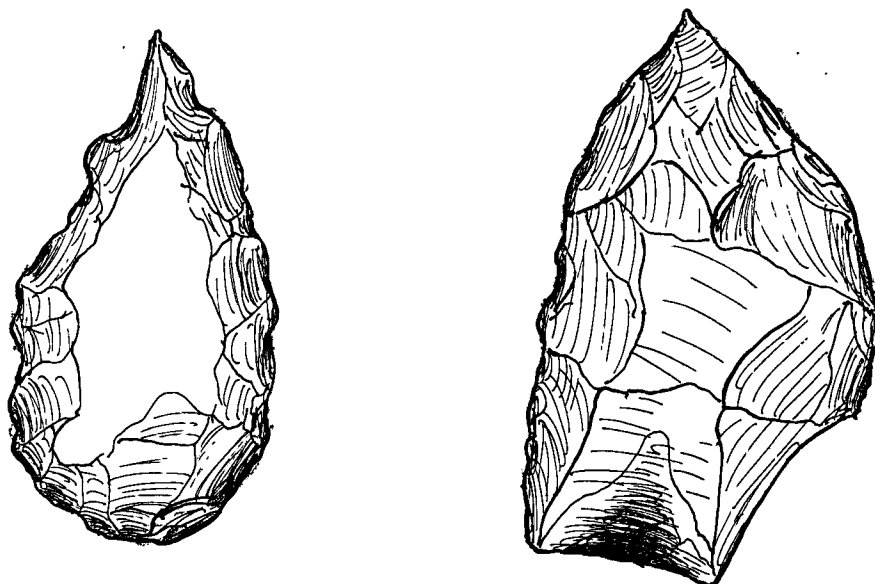
A similar artifact, 95 mm long, 55 mm in maximum width, and 15 mm thick, is an incompletely thinned straight base knife with one corner of the base broken off. As in the above described case, the fractured edge is retouched for scraping and the projecting spur on the fractured base slightly modified for graving.

One large, heavy flake, 75 mm long, 40 mm wide, and 18 mm thick, has a somewhat incomplete triangular outline like that of a straight base knife. There is a beak on the apex of the triangle. One corner of the base is missing, possibly due to an accidental break incurred by attempts to thin the specimen into a knife. The remaining portion of the base is strongly chipped from one side giving the edge a pronounced concavity in the plane of the face of the artifact. This centrally thinned edge may be the bit of a gouge. The remaining edges of the flake are retouched from one side, resulting in an uneven scraper edge.

To summarize the distribution data, two of the flake gravers and one



Flake Gravers
Figure 9



Gravers Worked on Knives¹
Figure 10

burin reworked from a knife were found in Shelter II. The other six graters cannot be located as to shelter number.

Perforators

Only five artifacts even tentatively assignable as perforators in this classification were obtained from this site. Of these, three specimens are proximal fragments with straight bases and parallel sides. They range from 50 to 75 mm in length, 40 to 45 mm in width, and 7 to 10 mm thick. Each one is broken at the point where the broad blade constricts to form the shaft of the perforator.

Two small triangular blades, each about 45 mm long and 30 mm wide at the base and only 5 mm thick, may be proximal portions of small perforators although the apical portion is missing in each case, making identification most uncertain. The only reason for distinguishing between these specimens and knives of similar shape is the fact that there is a tendency for the edges to approach parallel just anterior to the fracture, indicating, perhaps, that the continuation of this relatively parallel-sided extremity would be a perforating point.

An elongate blade, 65 mm long, 25 mm wide and 7 mm thick, is quite parallel-sided for 40 mm of its length, constricting thereafter to a relatively narrow point 25 mm long. A straight fracture across the base of this specimen indicates that an indeterminate portion of the proximal end is missing. Although the outline is similar to that of the perforators first described, it is thought that this one may represent a reworked knife.

One specimen of the first group is from Shelter I, one of the second group from Shelter IV, and the others cannot be assigned to the individual shelters.

Scrapers

A total of 63 scrapers of various types was obtained from the Craig Shelters. Scrapers are differentiated from knives in that the latter are retouched on both sides of an edge while the scraping edge is retouched only from one side, the other being the smooth fracture surface of the flake.

Four distinct forms of scrapers are distinguished here. They are end scrapers, side scrapers, concave scrapers, and circular scrapers. A description of the artifacts in each group and the minor subdivisions thereof is given below, considering the collection of scrapers as a whole rather than by shelters for purposes of description.

I. End Scrapers

Four specimens, all from Shelter II, are retouched on the thicker end of an elongate flake. Since the extremities of an elongate flake as struck from a core are often thicker than the longer edges, a "snub-nosed" effect may be achieved by retouching one of these thick ends. This seems to have been the case in the four specimens in question here, for they have "steep" cutting edges and yet are not typical plano-convex (i.e. snub-nosed) scrapers, inasmuch as they lack the characteristic convex dorsal surface and the symmetrical bit. In addition, two of these specimens are retouched somewhat along the edges of the flake, continuing the scraping surface from the end part way along each side. One, retouched as a scraper at one extremity, is also chipped from both sides of the flake at the other end to form a "knife" edge. The end scrapers range in length from 75 mm to 110 mm; in width from 55 to 70 mm; in thickness from 7 to 15 mm.

Ten elongate flakes of various sizes, eight from Shelter II, one from Shelter I, and one from Shelter IV, are retouched on the narrow, thin edge opposite the bulbar end. All except the one from Shelter IV have convex working faces; the latter has a straight edge.

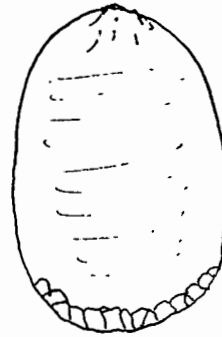
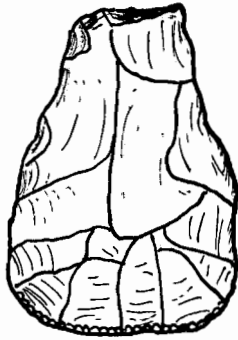
II. Side Scrapers

Fifteen large flint flakes of various shapes have straight edges retouched for scraping. The largest of these, 140 mm long, 80 mm wide, and 40 mm thick, is chipped from one side on the longest edge, producing a very capable heavy scraper. Nine smaller flakes, 70 to 90 mm long, 45 to 55 mm wide, and 7 to 15 mm thick, are all elongate in outline with the longer and straighter of the two side edges flaked for scraping. Six of these nine flakes each have two to three small concavities, 6 to 10 mm wide, retouched into the straight to convex edge opposite the straight scraping edge. The small projections between the concave scraping surfaces may have served as graving points.

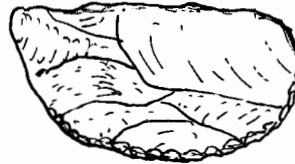
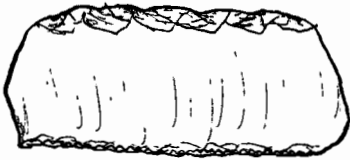
One thin elongate flake is retouched on the one long straight edge and also on three shorter straight edges so that the whole of the periphery might be used for scraping. This and two similar fragmentary specimens came from Shelter II.

Another thin flake, 80 mm long and 50 mm wide, with good symmetry, is retouched along one straight edge around the adjacent squarish corners and each end. The edge opposite the major scraping surface is retouched from both sides to form a rather delicate but definite knife edge.

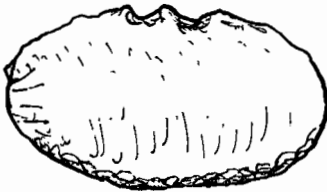
Twenty-three of the scrapers have outward curving working edges. Seventeen such specimens, ranging in size from large, heavy flakes 75 to 80 mm wide, 100 to 115 mm long and 20 mm thick, to smaller ones 40 to 55 mm wide, 55 to 90 mm long, and 10 to 15 mm thick, each have two convex edges. Of these seventeen bi-convex specimens, only one has both



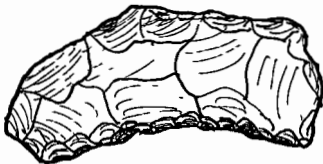
End Scrapers



Side Scrapers



Convex Side Scrapers



Concave Scrapers



(One half natural size)

Circular Scraper

Figure 11

edges modified for scraping, although several have small concavities on the edge opposite the major working surface which may or may not have been used as concave scrapers.

Six of the 23 convex edge scrapers are flakes somewhat more modified than the others in that they have been definitely shaped with one semi-circular scraping edge and a longer straight edge opposite. The size range of this group is quite large, the specimens ranging from 60 to 120 mm in length, 50 to 60 mm in width, and 10 to 20 mm in thickness. All of the six mentioned here were from Shelter II.

III. Concave Scrapers

Three rough flakes from Shelter II are from 75 to 95 mm in length, 30 to 45 mm in width, and 10 to 15 mm in thickness. Each have incurving scraping edges of the "spoke-shave" type. In each case the opposite edge is convex and chipped on both sides making a rough knife edge. The largest of the three has a small graving point worked on one end, making it a combination knife, scraper, and graver.

Seven fragments of other flint artifacts, shelters undetermined, are retouched so that they each have one small concave scraping surface, 10 to 30 mm in thickness. Two of these are worked on distal fragments of knife blades, two on basal sections of knife blades, two on large fragments of heavy pointed blades, and one on a medial fragment of a large triangular projectile point, utilizing the notch between the broken barb and the fractured stem.

IV. Circular Scrapers

Only one specimen of this type of scraper was found in the whole collection. It is 40 mm in diameter and 5 mm thick. Three-quarters of the periphery is carefully retouched from one side, the remaining quarter,

the bulbar portion of the flake, is thinned from each side, probably not with the idea of making a knife edge but rather to thin the artifact down so that the scraping edge might be in the same plane all around.

The distribution of the above major classes of scrapers throughout the five rock shelters is shown below in Table 3. No scrapers were identified with Shelters III or V, the latter being sterile, as mentioned before. Although three scrapers were reported in the field notes for Shelter III, they are not present in the collection as it stands today.

Type of Scraper	Shelters				Totals
	I	II	IV	Unknown	
End	1	12	1	0	14
Side	18	19	1	0	38
Concave	0	3	0	7	10
Circular	0	0	1	0	1
	<u>19</u>	<u>34</u>	<u>3</u>	<u>7</u>	<u>63</u>

Table 3

The validity of these figures for use in any analysis is highly questionable as there is a great variance between the total reported for the shelters in the field notes (110 specimens), and the total present in the collection now (63 specimens).

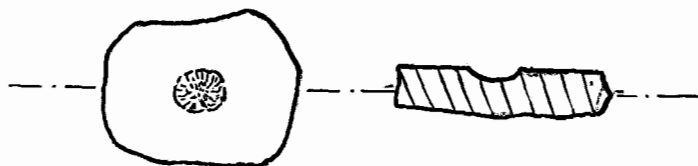
Ground Stone

Metates

Seventeen metates were found in the Craig Shelters. Five of these are available now for study. The others were lost or discarded. The metates from this site are characteristically irregular waterworn limestone slabs, sub-rectangular to roughly circular in outline. They range from 25 to 32 cm across and 60 to 90 mm in thickness. They have not been pecked or otherwise worked into shape. One specimen shows evidences of having been broken off around one half of its circumference. Such breaking appears to have been natural rather than intentional. Otherwise the edges and surfaces of the slabs are worn quite smooth, apparently through natural abrasive action in water.

Four of the five specimens have one small centrally located grinding pit from 90 to 125 mm in diameter on one surface. These pits are shallow concavities, roughly circular in outline and not more than 20 mm in depth. The fifth specimen differs only in that it has a pit on each of the two faces.

As originally reported, four metates were found in Shelter I, nine in Shelter II, and four in Shelter IV. Of the specimens remaining today, one is from Shelter I, the other four from Shelter IV.



Metate
Figure 12

Manos

Only seven of the 27 reported manos or grinding stones are in the collection at present. Characteristically, the manos of this site are stream-worn limestone cobbles, 75 to 100 mm wide and 20 to 50 mm thick, slightly worn by grinding on one face and pitted on one or both sides.

Four of the manos are roughly circular in outline, 80 to 110 mm in diameter and 20 to 45 mm thick. Two of the four have been used on both faces, two on but one face. One of the latter is a water-worn cobble of fine-grained, dark red igneous rock; one of the two igneous stone artifacts in the whole collection. In each case there is a pit in the center of the grinding face. Where the stone is quite soft these pits are about 12 mm in diameter and 1 or 2 mm deep. The igneous specimen and two crystalline limestone manos show only incipient pits. All four were found in Shelter I.

Two manos are sub-quadrangular in outline. One of these, from Shelter I, is an angular block of crystalline limestone, worn slightly on one face which is also slightly pitted. The other angular specimen, from Shelter IV, is worn on both broad faces and has a small pit on each. The two opposite longer edges of this mano seem also to have been used for grinding as they are worn down to flat facets 45 mm wide. This specimen, as well as several of the others, is quite battered on the ends, indicating its occasional use as a hammerstone. The pits on the various manos would seem to indicate that they were often used as anvil stones.

The seventh grinding stone, found in Shelter I, is a small, well indurated limestone pebble 90 mm long, 50 mm wide, and 20 mm thick. One somewhat convex face of this specimen has apparently been used to grind white chalk, because the pores of the brownish grinding face are filled with a white mineral powder.

Pitted Stones

Thirteen limestone cobbles of various irregular shapes, which are the result of natural abrasion, have one or more pits on their surface. Four of these are elliptical in outline, 120 mm long, 50 mm wide, and 20 to 30 mm thick, and have two small pits on each of their two faces. The very rough nature of these pits and the presence of many marks of battering along the surfaces and near the ends imply that they were used as hammerstones, either held flat in the palm of the hand or swung from one end as a billet. Two of these specimens are from Shelter II, one from Shelter IV, and one is from an unknown shelter.

Eight larger and entirely irregular shaped limestone cobbles have one or more pits on one surface or the other and in addition show signs of much battering on the edges. These specimens are thought to be anvil stones which were occasionally used as hammerstones. One of them is apparently a long-discarded mano the grinding facet of which was partially removed by solution and later further reduced by pounding. Another cobble is finely striated with many haphazard lines on one convex side. These striations are possibly the result of the use of this specimen in sharpening bone tools. A small circular piece of limestone 50 mm in diameter and 20 mm thick was found bearing a well defined pit on each face.

Plaques

The three fragmentary stone plaques in the collection are thin and finely ground on their two faces. Two of these, (Fig. 13-A, Fig. 13-B), are beveled on one edge and bear the remaining halves of two perforations each

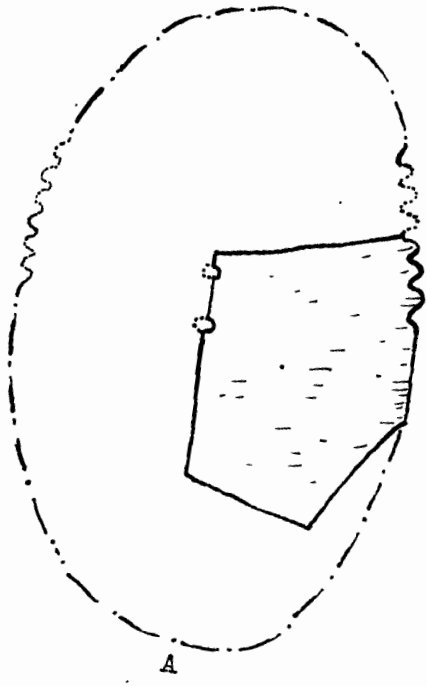
on the fractured edges. One plaque is ground down to a very sharp edge with three notches still present in the periphery. This specimen is of gray limestone which is undecorated except for the marginal notches. The second specimen is beveled on the convex outer edge. The stone is a dark red ferruginous sandstone, possibly decorated with a streak of ochreous paint of a lighter red. The surface of this fragment is somewhat striated as though it were never completely finished and polished. The third specimen is included with the plaques although it lacks any evidence of perforations or decoration (Fig. 13-C). The surfaces have been worn quite flat and even and the edges ground to a bevel. The stone is a pink, arenaceous limestone. All three of these specimens were found in Shelter II.

Problematical Ground Stones

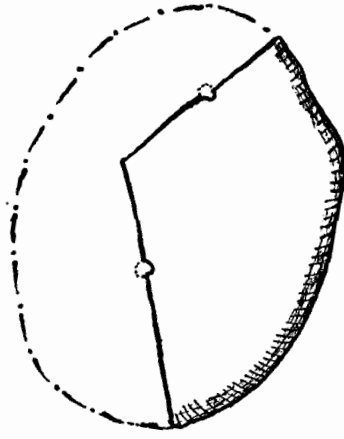
Two limestone artifacts of unknown use were recovered from Shelter II. One of these is a flat pebble, rhombohedral in outline. The two narrow edges have been ground to a bevel, one from one side and one from the other. The specimen is 50 mm long, 30 mm wide, and 8 mm thick (Fig. 13-D).

A much larger thin limestone cobble, 170 mm long, 100 mm wide, and up to 12 mm thick, is striated and polished over the entire surface on each side and beveled on all edges. The narrow tip of this specimen is broken, apparently since manufacture. The several nicks towards the broad end along the sides may indicate the use of this artifact as a club or hatchet, although the edges are not sharp enough to have been very effective in cutting (Fig. 13-E).

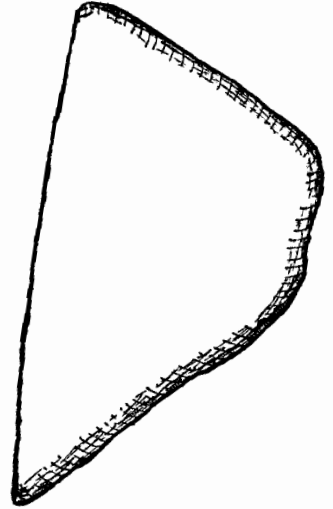
Three pebbles in the shape of flattened spheroids were obtained which may or may not have been shaped artificially. The smallest of these,



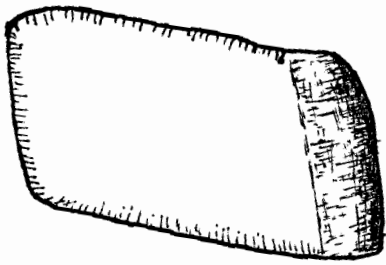
A



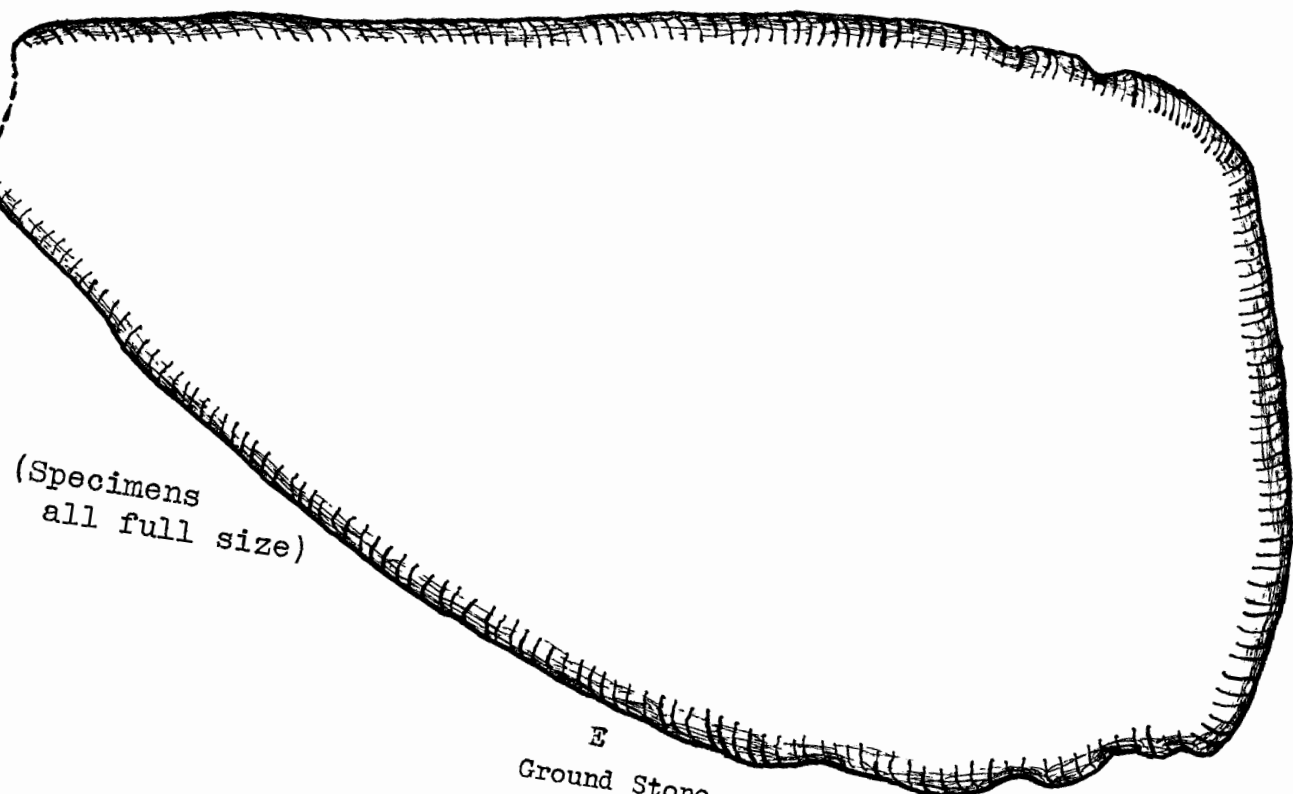
B



C



D



E

(Specimens
all full size)

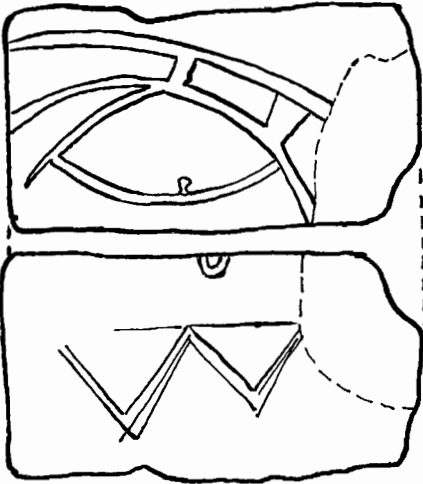
Ground Stone
Figure 13

about 30 mm in diameter and 18 mm thick, is of a reddish-black igneous stone and appears to have three small pits grouped close together near one edge of one flattened surface. The second specimen is more elliptical in outline. It is of gray limestone, 40 mm long, 30 mm wide, and 20 mm thick. Irregular black marks on the surface of this pebble may be traces of a painted design. The largest specimen is quite spheroidal and about 45 mm in diameter. This one is also of gray limestone and appears more obviously ground by human agency than do the others. It is surmised that these stones may have been used in games. The two smaller specimens are from Shelter II, but the third cannot be assigned to a shelter.

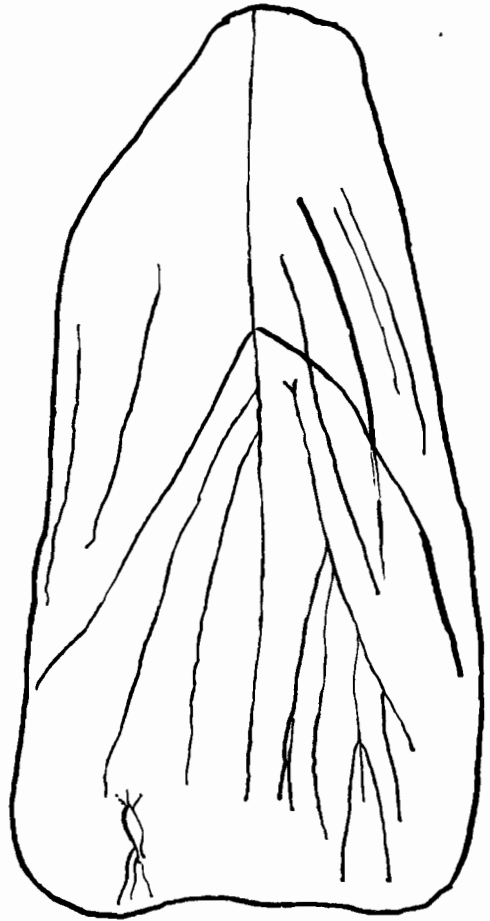
Incised Stone

Five limestone pebbles bearing incised lines are present in the Craig collection. Two bi-faced pebbles bear designs on each of their two faces. The smaller of these two specimens is 52 mm long, 28 mm wide, and 10 mm thick. It is marked with a strongly incised rectilinear design of triangles on one flat face and curvilinear design of two concentric arcs and one opposed arc on the opposite surface. As indicated in Fig. 14-A, faint remnants of black pigment cover one half of the stone. A larger and less regular limestone cobble, (Fig. 14-B), is marked by irregular rectilinear and curvilinear incised lines in an indefinite design. The opposite face of this specimen is similarly striated. Both of these specimens are from Shelter II.

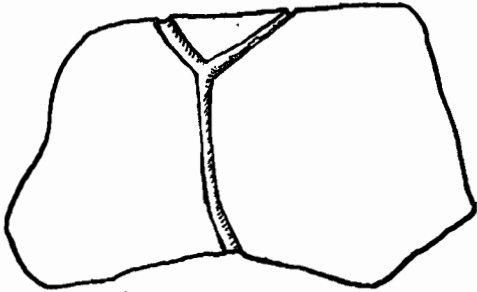
The three remaining specimens are marked by very simple rectilinear striations on but one face each. Fig. 14-C shows the pattern of the fine faint markings on a waterworn crystalline limestone pebble which also bears



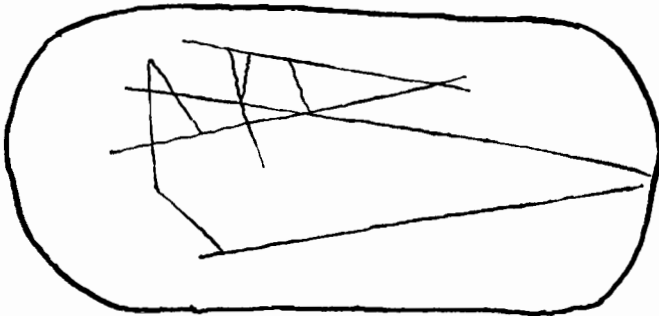
A



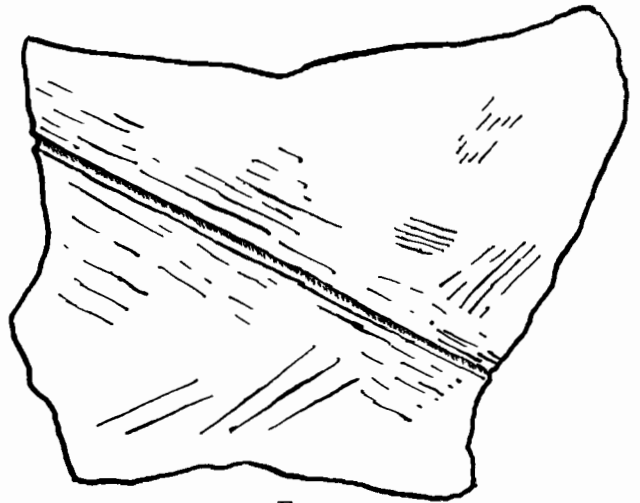
B



D



C



E

(Specimens all
full size)

Incised Stone

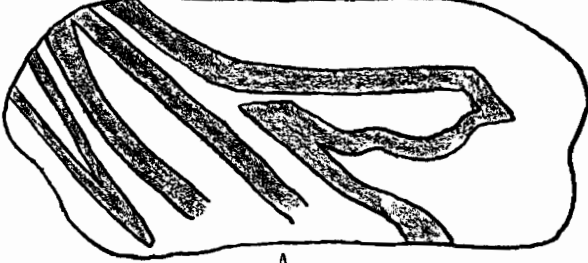
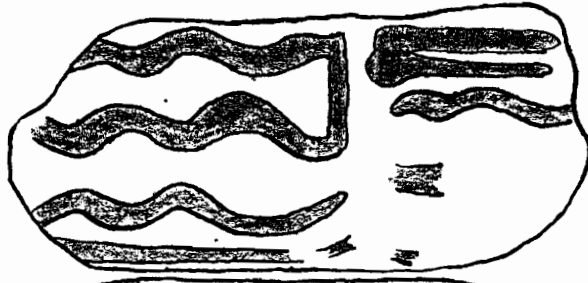
Figure 14

traces of red pigment on one end. This specimen is from Shelter II. The last two incised stones are thick fragments of soft limestone blackened and fractured probably through scorching in a camp fire. One of these is marked by a strongly incised line running completely across the flat surface of the stone and flanked by a very faint short striation such as those which might be made in sharpening a bone awl. This stone came from Shelter I. The deep incision on the simplest specimen, (Fig. 14-D), forms an elongate "Y". The shelter from which this stone was obtained is unknown.

Painted Pebbles

Seven flat limestone pebbles variously decorated with black, yellow, and red pigment were obtained from the Craig Shelters. Two are painted with distinct designs of black lines (Fig. 15-A, Fig. 15-B). One, (Fig. 15-C), carries a number of faint black lines which may be the result of contact with damp cords or twigs rather than human ornamentation. Two pebbles are marked with very faint and indefinite designs. One of these, (Fig. 15-D), bears several streaks of black pigment and the other, (Fig. 15-E), carries several lines and two circles in red. Two other small pebbles, (Fig. 15-F, Fig. 15-G), have been streaked with wide areas of black and yellow pigment, respectively.

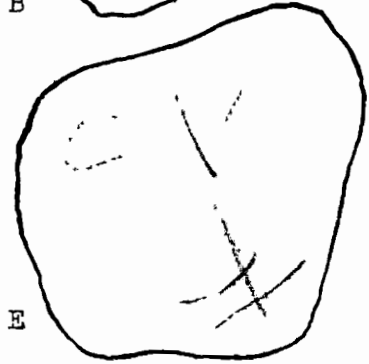
The drawings in Fig. 15 are full size outlines of the painted pebbles with the designs in colors closely approximating those of the originals, which, however, are much fainter.



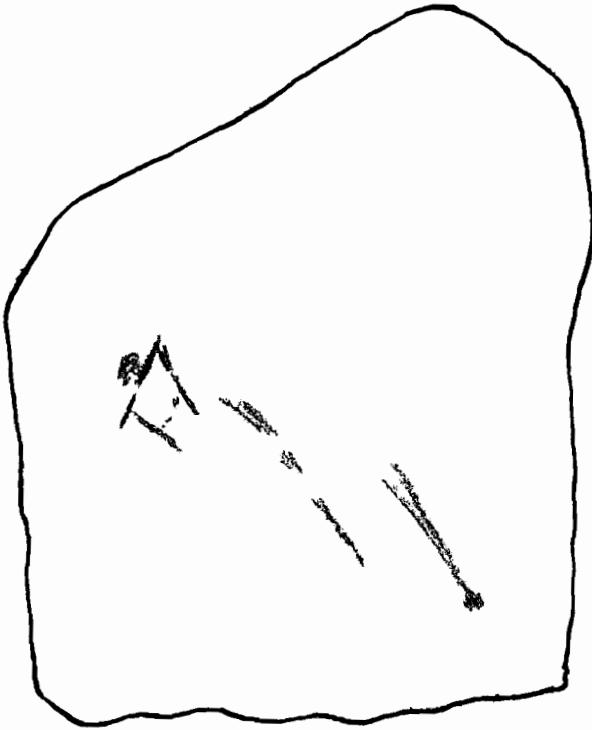
A



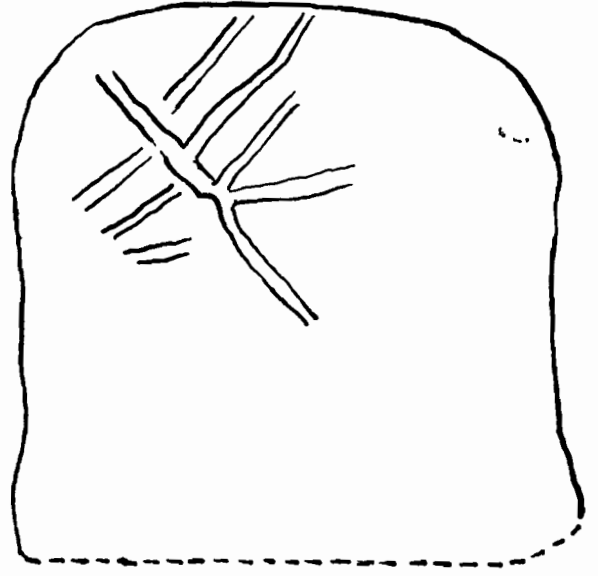
B



E



D



C



F



G

Painted Pebbles

Figure 15

Bone and Antler Artifacts

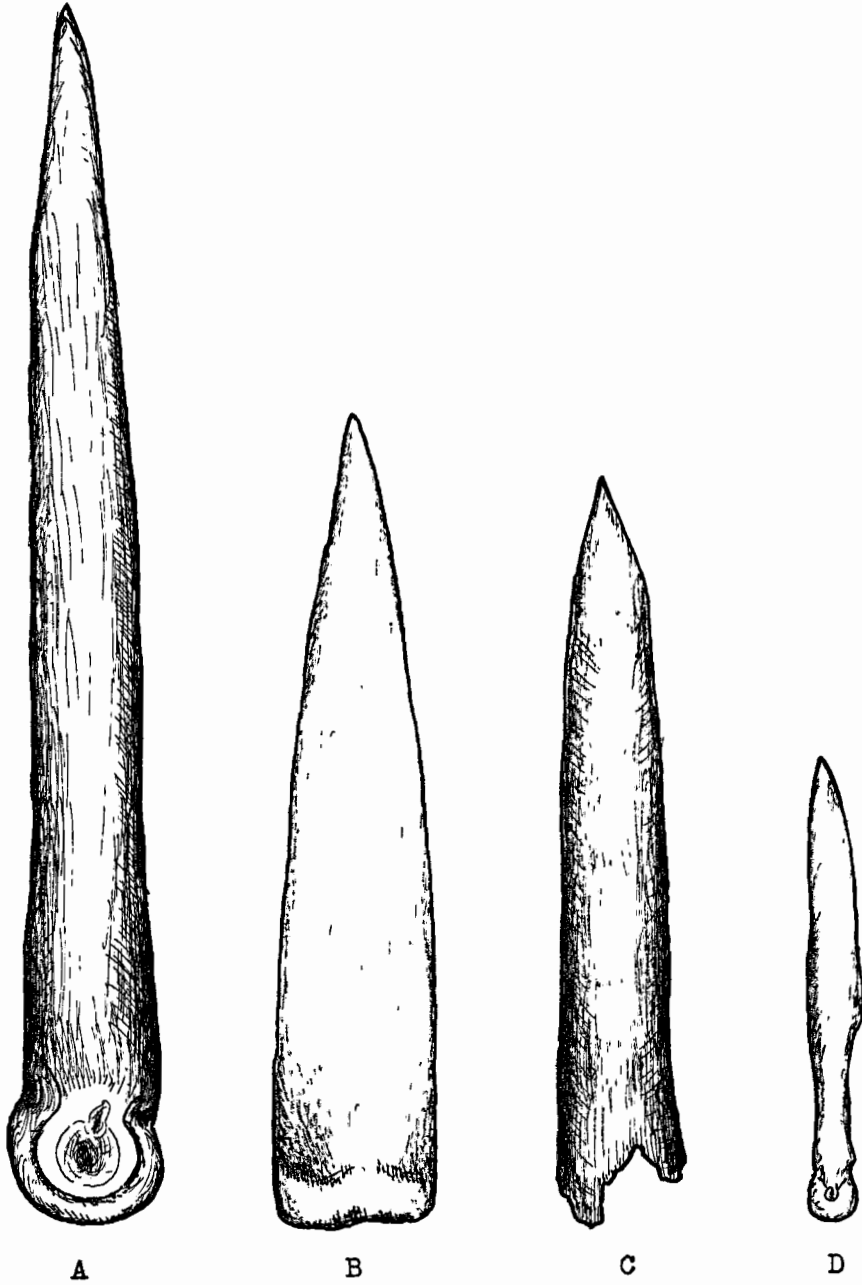
A total of 50 bone and antler artifacts was found in excavating the rock shelters. Of this number, 43 are bone and seven antler. The six classes into which these artifacts fall according to known or inferred use are described below.

Bone Awls

Five of the awls are deer metapodials halved longitudinally between the divisions of the distal articular process. The shaft is ground and polished to a fine tapering point. The semi-cylindrical groove running the length of the shaft on the inner surface is accentuated by scraping and polishing. Of the specimens definitely assignable to this group, the only one which is complete is 160 mm long and 15 mm wide at the middle of the shaft (Fig. 16-A).

Deer metapodials, in this case the proximal extremities, are the source for awls of the flat, thin, triangular type. The base of the awl is flat and thin as there is no knobby process on this end of the bone. The broad and somewhat abruptly tapered shaft is thin since the bone used is only the non-cancellous outer portion. Nine more or less complete awls of this type were recovered, ranging in size from 105 to 185 mm in length and 5 to 6 mm in thickness. The width was uniformly about 22 mm. Eight additional awls which are in a fragmentary state have also been assigned to this class.(Fig. 16-B).

Three awls were made of split sections of large bird bones. These are merely splinters from the middle of the bone which are ground to a



Bone Awls

Figure 16

broad point at one end (Fig. 16-C).

A rib of a small animal, possibly a rabbit, was found complete and unshaped except for a little grinding towards the distal end, producing a small, sharp point. It is 60 mm long, 6 mm wide, and 4 mm in maximum thickness (Fig. 16-D).

Bone Weaving Tool

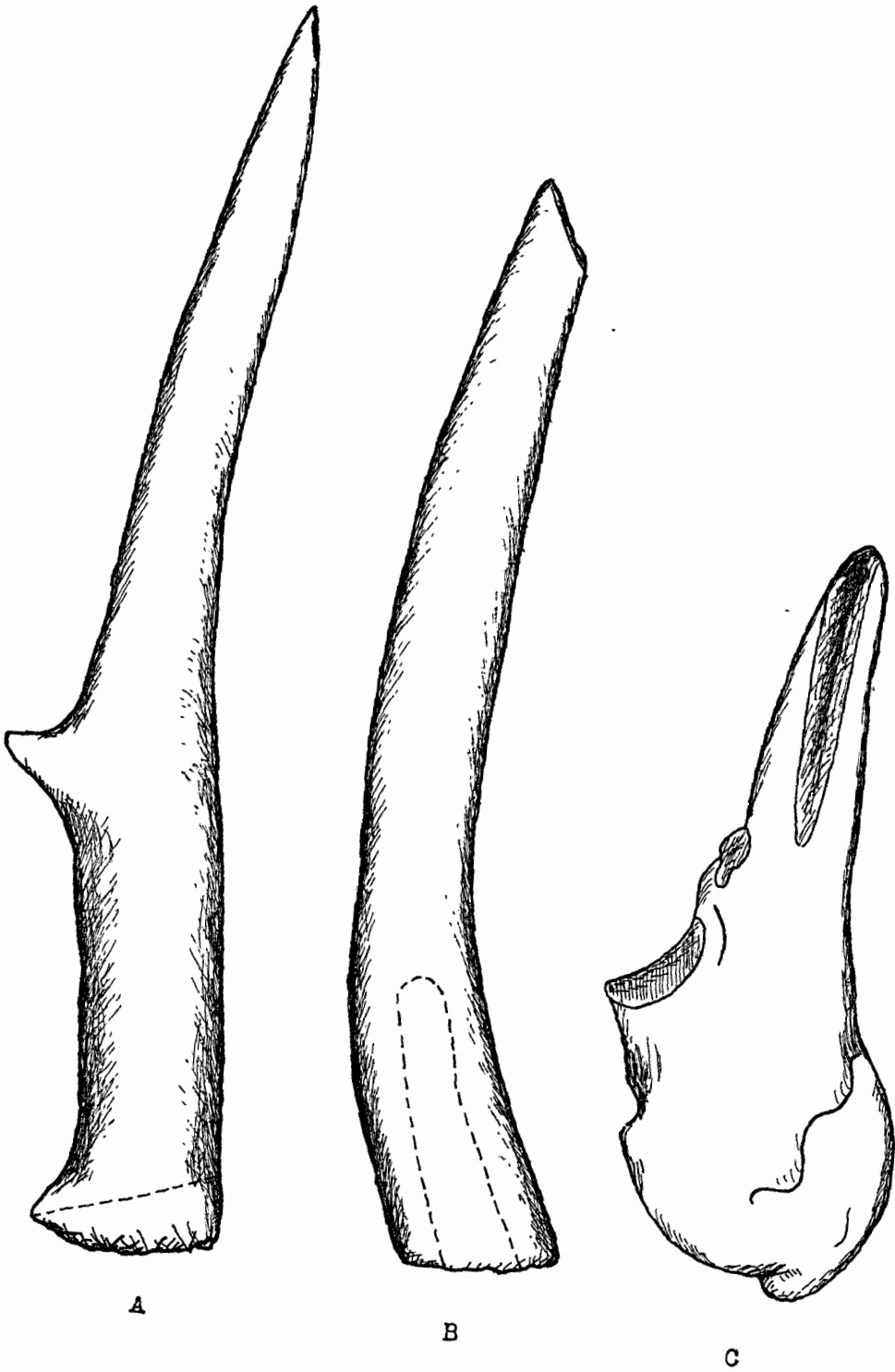
One small bit of bone, 87 mm long, 12 mm wide, and 4 mm thick, is flat and straight except for a slight concavity in each edge near one end. The high polish of this specimen and its shape indicate its use as a weaving tool, but the present fragmentary state of the artifact makes accurate identification impossible.

Bone Knapping Tools

Six deer ulnae were scraped smooth and cut to a broad chisel-like edge at the distal ends. These specimens show much use; they are well polished and much worn on the working surface. The only complete specimen is 110 mm long, 40 mm wide (Fig. 17-C).

Bone Beads

Four short sections of various bird bones were found carefully cut off at each end and well polished. None was incised. They range in length from 15 to 70 mm (Fig. 18-A).



Knapping Tools
Figure 17

"Net Spacers"

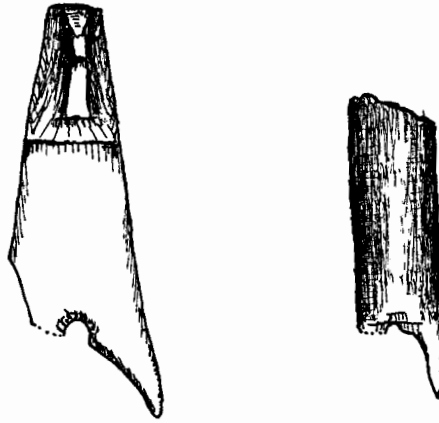
Six cut and carved pieces of polished bone of unknown origin were found, each bearing two sharp prongs on one end. These artifacts range in length from 35 to 90 mm. The prongs are each about 10 mm long and 8 to 15 mm apart. Documentation is lacking for such artifacts, and their use can only be surmised (Fig. 18-B).

Antler Knapping Tools

Seven deer antler tines were recovered which show evidence of much human use. Six of these were worn about the point which was either unmodified or ground to a narrow bit (Fig. 17-B). In two cases medial processes or very short prongs projecting from the middle of the long tine were used sufficiently to show signs of much wear (Fig. 17-A). Such use of a minor projection in the middle of an artifact leads to the inference that the tool was held in both hands and the work steadied by use of the knees, feet, or a second party. One of the five antler specimens which are combined knappers and hafts is also one of the two medial knappers described above. Transverse slots are cut into each end of this specimen, presumably to provide for the insertion of stone blades. The other four combination hafts and knappers have a variety of holes drilled and cut into the basal end. No blades were found in place in any of these supposed handles.

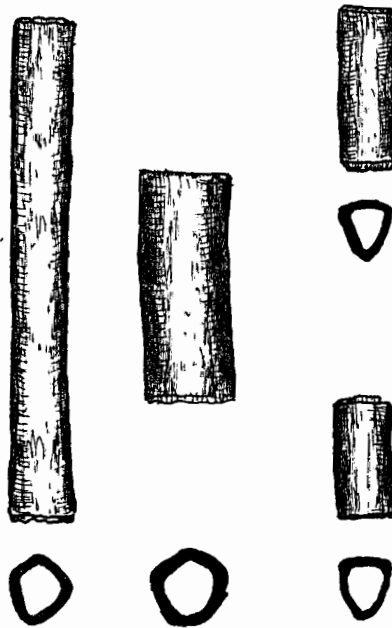
Cut bone and antler specimens from this site were evidently severed in much the same fashion as those described by Hodge.¹⁴ Through the careful study of a large series of artifacts he was able to determine that the surface of a bone to be cut was first scored around the circumference

"Net Spacers"



B

Bird Bone Beads



A

Figure 18

and then sawed with an edged stone or sandstone flake deep enough to enable breaking with the fingers. Hodge mentions that antlers were either cut by the same method or hacked with heavy stones.¹⁴ The bird bone beads and antler knapping tools in this collection have apparently been made in this way.

Table 4 below shows the distribution of the major classes of bone and antler artifacts.

Classes of Bone Artifacts	Shelters				Totals
	I	II	III	IV	
Bone awls	7	12	0	7	26
Bone knapping tools	0	5	0	1	6
Bone weaving tool	0	0	0	1	1
Bone beads	2	1	0	1	4
Bone "net spacers"	0	0	0	6	6
Antler knapping tools	<u>2</u>	<u>4</u>	<u>1</u>	<u>0</u>	<u>7</u>
	11	22	1	16	50

Table 4

¹⁴Hodge, F.W., Hawikuh Bone Work, Indian Notes and Monographs, Vol. 3, No.3, 1920, p. 76

Artifacts of Wood

Thirty artificially shaped pieces of wood were obtained from this site. The only classes of wooden artifacts which may be accurately described according to their original use are fire hearths, fire drills, and arrow or dart sections.

Fire Hearths

Eleven short sections of sotol flower stalks have charred pits. Two of these were used in the round, and six were split lengthwise. Two of the split stalks are marked on the flat surface by a series of gouged depressions which are evidently fire pits untouched by the fire drill. The width of the hearths is from 15 to 25 mm, and they range in length from 60 to 550 mm. (Fig. 19-A).

Fire Drills

Six peeled and polished sections of small branches of relatively hard wood are rounded and charred on one end and carefully cut on the other end. In general the shortness of these specimens argues against their use as fire drills, but no other purpose can be assigned to them. They are from 75 to 250 mm long and 15 to 20 mm wide (Fig. 19-B).

Arrow or Dart Fragments

Six slender sticks from 75 to 195 mm long and about 6 mm in diameter

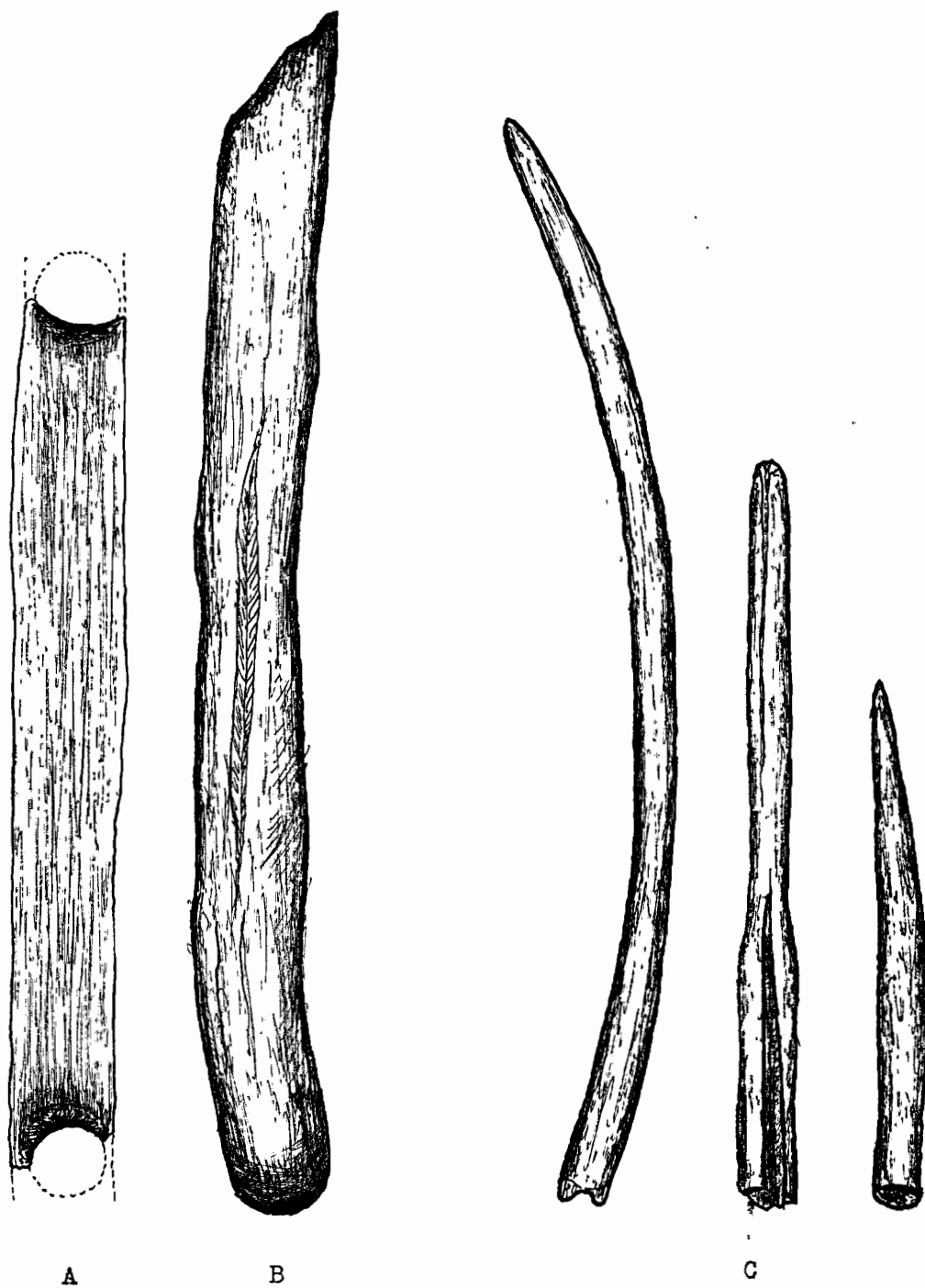


Figure 19

show various types of shaping. Three specimens bear crude nocks, and two from Shelter II have small regular depressions in the butt ends. All four of these are pointed on the opposite end and may be proximal portions of sectional bow and atlatl projectiles (Fig. 19-C). One of the four, (Fig. 20-B), is wrapped near the pointed end. The fifth specimen has small holes drilled into each end as though to receive other sections of the projectile.

"Bow" Fragments

Two cut sticks are thought to be bow ends. One is 85 mm long and 15 mm in greatest diameter. It is carefully tapered to a rounded head at one end and roughly broken off at the other. A notch 15 mm from the narrow, well-shaped end is 5 mm deep and extends 8 mm across the stick (Fig. 20-D). The second supposed bow end, drawn from both sides in Fig. 20-E, is also a smoothly tapered piece of springy wood splintered off at one end. One side of this specimen is half-round and the other is flat. The flat surface has a small groove 5 mm wide running its length. If this groove was made on purpose and not a result of the splitting of the wood, it is possible that this specimen represents part of an atlatl. These sticks are from Shelter II.

"Club Head"

A massive fragment of a branch 125 mm long and about 50 mm in diameter is charred off at one end and cut or ground quite flat on the other end. One side is somewhat flattened, and the whole specimen is

smooth as though it has been scraped. It is thought that the specimen may be part of a heavy club.

Wrapped Sticks

Three small pieces of woods were found with various sorts of fiber wrapped about each one. The wrapped projectile fragment has been noted. The wrapping in this case is a short section of a thin aloe leaf 8 mm wide which makes two turns around the stick and is twisted into place. As the wood is split it is possible that the wrapping served to strengthen it (Fig. 20-B). A second specimen is an unmodified section of a sotol flower stalk 15 cm long and 15 mm in diameter wrapped about four times with a piece of two-strand fiber cord knotted in place (Fig. 20-A). No particular use may be inferred for this specimen. The third specimen is merely a short piece of an unpeeled twig 95 cm long and 8 mm in diameter loosely twisted about four times with a 15 cm length of right twisted lechuguilla fiber (Fig. 20-C).

Ground Stick

At a depth of 34 inches in Shelter II, a section of a branch, 125 mm long and 22 mm in diameter, was found which was apparently ground off at one end at an angle of about 60 degrees to the long axis and burnt off at the other end. The flat ground surface shows no signs of use and its purpose is entirely unknown. Nineteen of these wooden artifacts were found in Shelter II, but the exact shelters for the others are unknown.



A



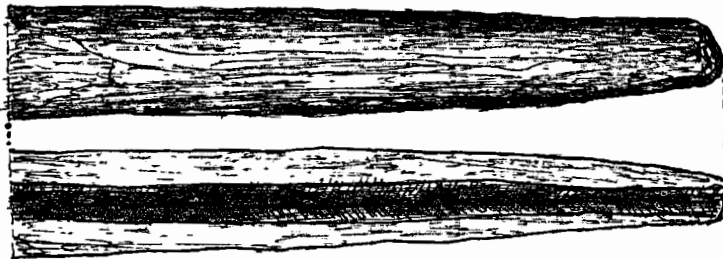
B



C



D



E

Figure 20

Vegetal Artifacts

Decayed fibrous material was plentiful in the deposits of the Craig shelters, but only 32 vegetal artifacts were found well enough preserved for study. The only remaining evidence of sandals in this site is the medial fragment of one specimen and several discarded tie-strings from other specimens. The fragmentary sandal is a tattered remnant 140 mm long and 90 mm wide which lacks the original front and back ends. The main warp elements on each side are stiff yucca leaves laid parallel to each other. The fact that the foundation warps are bi-parallel may indicate that the sandal is of the "square-toed" rather than the "fish-tail" variety. The woven leaf body of the sandal is so completely shredded and worn that the technique employed in its construction can only be surmised to be checker weave. The tie-strings are untwisted fibers of partially shredded yucca leaves joined together with loosely tied square knots. The tie-strings are looped once around each of the two foundation elements and are crossed where they come through the sandal, so that a wide loop is formed towards one end of the sandal and another loop towards the other end. Probably either one or the other of these tie loops at one time passed through the front or back end of the sandal, but each is free now. Similar sandals and tie-strings are described in the report on the Fate Bell rock shelter.¹⁵

Of the five pieces of cordage now present in the collection, four are made with two strands of fiber twisted together counter-clockwise (left lay). The basic elements, the two individual strands, are each twisted clockwise (right lay). This is the combination of twists to be expected in well made cordage as the two strands which make up such a cord naturally twine together

¹⁵Pearce, J. E., and Jackson, A. T., A Prehistoric Rock Shelter in Val Verde County, Texas, University of Texas Bulletin, No. 3327, 1933, p. 102.

in the direction opposite that of the twist of the individual strands. The one specimen of four strand cord is 20 cm long and 5 mm in diameter. Each of its basic elements is twisted to the right, but the two secondary elements of two strands each are twined to the right also, which causes them to form very loose cords. The two two-strand cords are twined together to the left so that the major lay of this specimen is counter-clockwise. A short piece of fiber cord wrapped with rabbit fur was found at this site by Jackson.¹⁶ The specimen has been lost but it apparently was much like similar cords from the Fate Bell site which are thought to have been used in the manufacture of robes and blankets of fur wrapped cords.¹⁷

The prevalence of the basic right lay in fiber cordage here and elsewhere is thought to be explained by the supposition that the Indians twisted aloe leaf fibers for cordage by rolling several of them together downward on the right thigh with the palm of the right hand. Two strands made in this way, or one long strand doubled back on itself, will twine together in the direction opposite that of the single strand of fibers. Similarly, when a four strand cord is built up with alternating twists, the major lay will be the same in direction as the basic lay. Such being the case, no importance can be attached to the reported prevalence of right or left lay cord from various sites unless the number of strands in each cord and the twist of each strand has been determined.

Four square knots were found tying together various pieces of loosely twisted shredded leaves. Eleven other square knots are in partially shredded, untwisted leaves of various aloes. Several of these crude cords are obviously discarded sandal tie-strings.

One unshredded lechuguilla leaf 30 cm. long is tightly twisted to

¹⁶Jackson, A. T., Field Notes, Bk. I, 1934, p. 58.

¹⁷Pearce, J. E., and Jackson, A. T., op. cit., p. 89.

the right to form a simple heavy cord 8 mm in diameter. Three yucca leaves are each looped so that the end is twisted about the middle of the leaf. The loops are from 25 to 60 mm in diameter and may have served to tie small bundles.

The only piece of basketry found preserved in this site is a 50 mm square piece of checker woven sacahuisti grass leaves which accompanied burial number three in Shelter I. A fragment of matting about 60 mm square, made in a crude checker weave pattern of partially shredded heavy leaves, is the only other woven artifact. Five matted masses of sotol leaf fibers obtained at this site indicates that such leaves were chewed as "quids". Four of these fiber masses are from 50 to 75 mm long, 25 to 35 mm wide, and 10 to 20 mm thick. The fifth specimen is a broad aloe leaf 125 mm long with a heavy mass of chewed fibers at each end. Teeth marks on several of these specimens are clear indications of the fact that they were chewed. Haury found a similar type of quid actually in place between the jaws of a skull from Arizona and suggested that it might have been chewed as a medicine.¹⁸ The presence of bits of the outer covering of the leaf in several specimens shows that the leaves were chewed while young, green, and tender. Whether these leaves were chewed as a food or a medicine cannot be determined, but the fact that they were found in great numbers in the Pecos River Shelters indicates that the trait is an important one.¹⁹

¹⁸Haury, E.W., The Canyon Creek Ruins, Medallion Papers, No. XIV, Gila Pueblo, 1934, pl. XXXIX

¹⁹Pearce, J. E., and Jackson, A. T., op. cit., p. 40

The Food Complex

The major evidences of food found in these shelters is in the form of bones, usually split and charred, of animals common to the region. Deer bones are most numerous, and squirrel bones are also plentiful. Other animal foods are far less well represented, with the exception of land snails, many thousands of the shells of which were found. It cannot be definitely stated that these gastropods were used for food, however. Of the small number of bird bones found, those of the turkey predominate. A few fish bones were found in two shelters which also contained the very few mussel shells uncovered. Numerous fragments of tarrapin carapaces were also noted. The bison was evidently of little importance here, for only a few bones were found.

Perishable materials did not very well survive the dampness of these shelters, but there is enough evidence remaining to show that at least twelve different vegetable foods were eaten. The number of existing specimens is too small to permit any acceptable evaluation of the relative abundance of the various plant foods. Acorns, sotol crowns, mesquite beans, pecans, pinon nuts, and lechuguilla "quids" are well represented. Walnuts, hackberry seeds, grapes, bramble seeds, and the seeds of the mountain laurel were also located. Several small dried cacti were found and may have been used for their narcotic properties. The laurel seeds, also, may have had such a use.²⁰

One small fragment of an ancient-looking corn cob was found. It is 22 mm in diameter and seems to have had eight rows of kernels. Such inconclusive evidence of agriculture is not construed to be important and does not modify the hunting and gathering economy inferred for the inhabitants of these shelters.

²⁰Jackson, A. T., op. cit., p. 110

CHAPTER III

CORRELATIONS AND CONCLUSIONS

The descriptive material in Chapter II was analyzed with the purpose of making possible detailed correlations between the artifact types and various culture complexes known to exist in Texas. In order to do this, certain diagnostic features are first defined and then related, where possible, to similar features described by other workers in this and adjacent areas. The tenuous relations thus established are finally considered in the light of several large complexes, the South Plains, Central Texas, and Folsom-Yuma horizons, as defined by Kelley, and broad geographic divisions of culture postulated by Krieger using the McKern system of classification. Variations of cultural deposits within each shelter of this site appear to be insignificant, for the same artifact complexes are found to have been present in each. In order to make the series of artifacts large enough for any valid reconstruction of the cultural history of the site, it is necessary to consider each class of artifacts as a whole, rather than as separate series from each shelter.

Table 5, on the following page, summarizes the distribution of all of the artifacts from the Craig Rock Shelters. It will be noted that the grand total of artifacts in the collection, 620, is larger than the sum of the totals for each individual shelter. This is explained by the fact that data relating many artifacts to the shelters where they were found have been lost. As Shelter V contained no artifacts it is not considered in this analysis, although the presence of ash in the floor deposit indicated a limited occupation. Shelter III yielded only four artifacts and is also of but little importance. Shelters I, II, and IV offer the major criteria for

Summary of the Distribution of all Artifact Classes					
Class	Number in each Shelter				Totals
	I	II	III	IV	
Projectile Points	25	48	3	51	132
Knives	125	72	-	23	209
Pointed Blades	9	20	-	-	29
Choppers	6	12	-	-	20
Gravers	-	3	-	-	9
Perforators	1	-	-	1	5
Scrapers	19	34	-	3	63
Metates	1	-	-	4	5
Manos	6	-	-	1	7
Pitted Stones	5	4	-	2	13
Plaques	-	3	-	-	3
Problematical Stones	-	5	-	-	5
Incised Stones	1	2	-	-	5
Painted Pebbles	-	2	-	-	7
Bone Awls	7	12	-	7	26
Bone Knappers	-	5	-	1	6
Bone Weaving Tool	-	-	-	1	1
Bird Bone Beads	2	1	-	1	4
Bone "Net Spacers"	-	-	-	6	6
Antler Knappers	2	4	1	0	7
Fire Hearths	-	6	-	-	11
Fire Drills	-	2	-	-	6
Projectile Fragments	-	4	-	-	6
"Bow" Fragments	-	2	-	-	2
"Club Head"	-	-	-	-	1
Wrapped Sticks	-	3	-	-	3
Ground Stick	-	1	-	-	1
Sandal Fragment	-	1	-	-	1
Cords	-	5	-	-	5
Knotted Leaves	-	15	-	-	15
Twisted Leaves	-	4	-	-	4
Basketry	1	-	-	-	1
Matting	-	1	-	-	1
"Quids"	-	5	-	-	5
Totals	210	276	4	101	620

Table 5

an analysis of the cultural manifestations of the complete site, for they contained 210, 276, and 101 artifacts respectively.

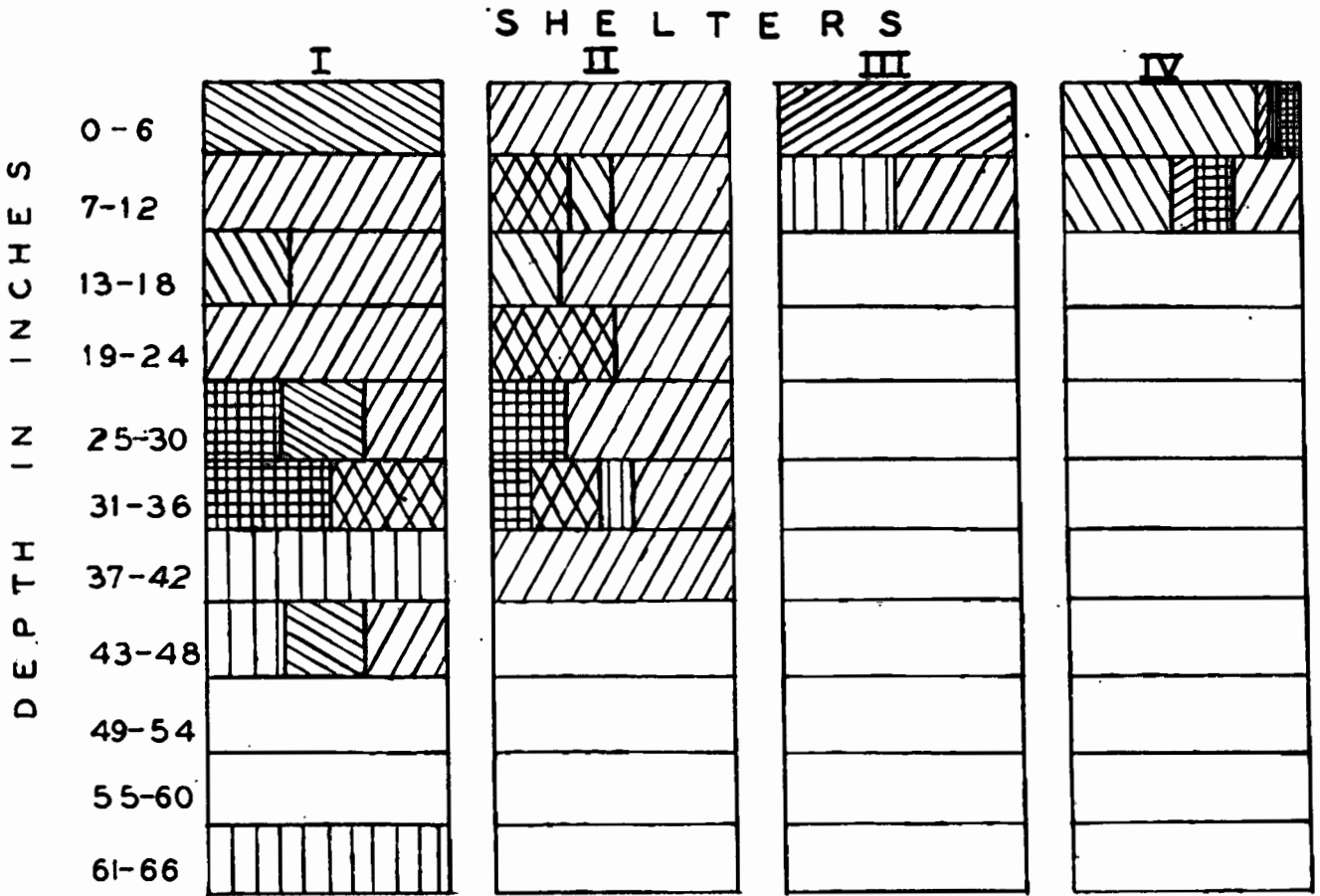
Since no pottery was present at this site, projectile point forms are considered the most important clues to the cultural relations of the various floor deposits. The flint knife types have not been determined sufficiently to permit any particularly valuable conclusions to be drawn from their distribution. Therefore, the existence of various cultural influences must be determined on the basis of projectile point types and supplemented wherever possible with evidence from the other artifacts and stratigraphic data.

Two major complexes can be defined in the Craig site on the basis of the obvious size break in the projectile point series. By referring to figures 3, 4, and 5, it may be seen that projectile point classification group VII is that of the small points, sometimes referred to as "microliths" or "bird points", which are probably arrow points. The first six classification groups include all of the larger and less finely made points commonly thought to be associated with atlatl projectiles. Table 2, page 19, shows the numerical relation between these to be 62.9 percent large points and 37.1 percent small points. Table 6, figure A, demonstrates the fact that the small points were found to be most abundant in the uppermost few inches of the deposit in each shelter. Correlated with the major culture horizons of Texas, the situation at this site is seen to be the same as that in numerous sites explored in Central Texas and West Texas. In Central Texas, Jackson has commonly found small projectile points in the upper layers of many middens and mounds which contain only large points in the lower portions of the deposits.²¹ In the Big Bend area of Texas, far to the west of the Craig

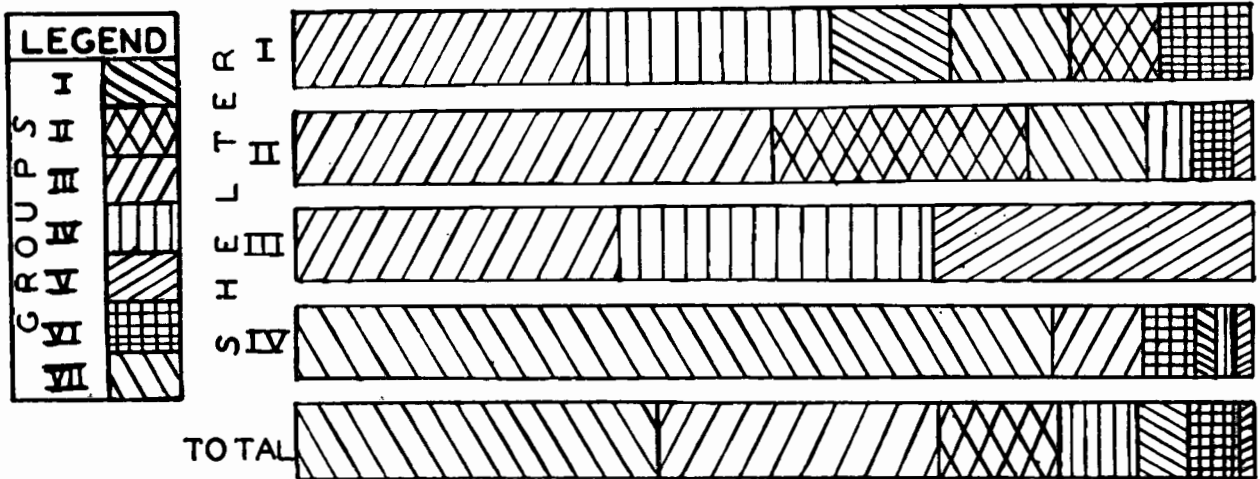
²¹Jackson, A. T., The Fall Creek Sites, University of Texas Publication No. 3802, 1938, p. 116. Dr. J. E. Pearce was the first to observe and report on this phenomenon in central Texas, "The Present Status of Texas Archaeology", Bulletin, Texas Archaeological and Paleontological Society, 1932, p. 46

Table 6

DISTRIBUTION OF PROJECTILE POINT GROUPS



A



site, Kelley and others have reported small projectile points overlying larger points in various sites, and Ray has reported the same situation from the Abilene region.²² Thus it is clear that the bow and arrow complex is present here and is more recent than the underlying atlatl complex.

A comparison of the various sub-groups of the small projectile points with published descriptions of related artifacts demonstrates the possibility of several tenuous correlations. The smallness of the series in this collection and the hazards of relating artifacts through the use of written descriptions and very small photographs do not permit more than general indications to be made of the cultural sources for the elements within the small projectile point complex. Table 7 shows the number of specimens found for each of the sub-groups of classification group VII. It may be noted that the maximum percentage of specimens within any one sub-group is 8.3 percent, indicating that no particular type of small point was dominant. Sub-group VII-A is comprised of five specimens which look very much like Sayles' Lipan Phase projectile points of the very small types, but probably have no relation to them for the artifacts commonly associated with them are absent here.²³ Sub-groups VII-B and VII-C, which total seven specimens, resemble only superficially Sayles' Wichita points.²⁴ Both Sayles²⁵ and Jackson²⁶ report the general occurrence of pottery related to that of the Hasinai region of East Texas with the supposed widespread but poorly defined

²²Kelley, J. C., The Association of Archaeological Materials with Geological Deposits in the Big Bend Region of Texas, Bulletin, Sul Ross State Teachers College, Vol. XXI, No. 3, 1940, p. 130. Ray, C. R., "Recent Archaeological Researches in the Abilene Section", Bulletin, Texas Archaeological and Paleontological Society, 1930, p. 59

²³Sayles, E. B., An Archaeological Survey of Texas, Medallion Papers, No. XVII, Gila Pueblo, 1935, pl. XVI, p. 61

²⁴ibid, pl. XXIV

²⁵ibid, p. 90

²⁶Jackson, A. T., op. cit., p. 110

Numerical Distribution of Small Projectile Points

Sub-Groups	Shelters			Totals	Percent of each
	I	II	IV		
VII-A	-	1	4	5	3.8
VII-B	1	-	5	6	4.5
VII-C	-	-	1	1	.7
VII-D	-	-	10	10	7.6
VII-E	-	1	4	5	3.8
VII-F	2	1	8	11	8.3
VII-G	-	1	1	2	1.5
VII-H	-	-	1	1	.8
VII-I	-	2	2	4	3.1
VII-J	-	-	2	2	1.5
	<u>3</u>	<u>6</u>	<u>38</u>	<u>47</u>	<u>35.6</u>
			(Unknown)	2	1.5
			Total	<u>49</u>	<u>37.1</u>

Table 7

Wichita type projectile points. The absence of pot sherds from the Craig site is evidently due to the fact that the Wichita influence was very slight, as shown by the very small number of artifacts found which might be assigned to this culture. The remaining sub-groups of small points contain the preponderance of such specimens and all may be duplicated in Central Texas collections. Jackson pictures specimens evidently identical with sub-groups VII^A-D through VII-I.²⁷ The distribution of sub-group VII-J can not be traced due to the lack of consideration given the small stemless projectile points in archaeological reports. Despite the fact that the bow complex is found overlying the atlatl complex in the Big Bend Region, the small projectile points from that area can not be identified with those found at the Craig site.²⁸ Therefore there is no reason to believe that either the Livermore or the Bravo Valley cultures are sources for any of the elements in this site. A very small percentage of arrow points have been reported from the Pecos River Cave Dweller area, between the Big Bend and the Edwards Plateau. Four percent of the projectile points from Murrah Cave are of this type.²⁹ Only about one percent of the points from Eagle Cave, in the same region, are of the small varieties.³⁰ The available data on the arrow points from the Pecos River area can not be used for correlation on the basis of types, and therefore no conclusions may be reached at this time on the relations between the Craig arrow complex elements and those of the region immediately to the west.

The 83 large projectile points making up 62.9 percent of the series are divided into six major divisions. (See Projectile Points, Chapter II) As in the case of the small point correlations, too few specimens of any

²⁷Ibid., pl. XVII, fig. 2, p. 91

²⁸Kelley, J. C., op. cit., pl. XX, figs. 4 and 5, p. 129

²⁹Holden, W. C., "Excavation of Murrah Cave", Bulletin, Texas Archaeological and Paleontological Society, vol. 9, 1937, p. 54.

³⁰Davenport, J. W., Archaeological Exploration of Eagle Cave, Langtry, Texas, Witte Memorial Museum, Big Bend Basket Maker Papers, No. 4, 1938, p. 16

one particular diagnostic form exist for the adequate determination of their cultural origins. The dominant group of the dart points is classification group III which contains 39 specimens or 29.6 percent of all of the projectile points. All of this group are expanding-stemmed with concave bases. Sayles duplicates seven of the sub-groups of group III in his description of Late Edwards Plateau projectile points.³¹ The one sub-group not figured by Sayles, III-B, is duplicated in Central Texas by Jackson, although he states that this type is more commonly found in Edwards County.³² Huskey found projectile points of this form most common in the middle and upper levels of mounds in the Nueces Canyon region in the vicinity of the Craig shelters.³³ Most of the sub-groups of this form of dart point seem to become less frequent west of the upper Nueces area of the Edwards Plateau, just as they tend to diminish in number to the east. They form six percent of the projectile points at Eagle Cave³⁴ and 22 percent at Murrah Cave,³⁵ and only 15 percent at Fate Bell shelter.³⁶ All types within this group are absent from the Big Bend area of Brewster County, with the possible exception of III-C, which may be more or less closely related to the typical Chisos dart point, or arrow point.³⁷ To summarize briefly, the dart points of classification group III seem to be typical of the Late Edwards Plateau culture, especially in the area of the upper Nueces River.

Classification group IV contains 11 specimens or 8.3 percent of the projectile points. These parallel-sided stemmed, notched base dart points are duplicated in part by Sayles' Round Rock type.³⁸ Huskey also reported

³¹Sayles, E. B., op. cit., pl. XII, p. 49 and pl. XIX, fig. d, p. 70

³²Jackson, A. T., op. cit., pl. XVI, p. 89

³³Huskey, V., "An Archaeological Survey of the Nueces Canyon of Texas", Bulletin, Texas Archaeological and Paleontological Society, 1935, pp. 107-108

³⁴Davenport, J. W., op. cit., p. 16

³⁵Holden, W. C., op. cit., p. 54

³⁶Pearce, J. E., and Jackson, A. T., op. cit., p. 74

³⁷Kelley, J. C., op. cit., pl. XX, fig. 3

³⁸Sayles, E. B. op. cit., pl. XIC, p. 55

points of this type from the Nueces area to the west of the immediate Round Rock area, but mentioned finding them low in the middens he explored.³⁹ Dart points of this type are apparently not found west of the Nueces area.

Dart points of the group I form have been found most numerous in the Pecos River shelters.⁴⁰ Only 5.3 percent of this type were found at the Craig site (seven specimens). They are evidently rare in other sites in this area. Huskey figures one similar to I-D as a middle level point in the Nueces Canyon region.⁴¹ They comprise about 10 percent of the projectile points found at the Eagle Cave site.⁴² Dart points similar to I-D make up 47 percent of the specimens from Fate Bell.⁴³ This type extends west into Brewster County as a definite complex, the Pecos River focus, which underlies the Chisos focus.⁴⁴

Group V contains only three specimens, 2.3 percent of the projectile points. This type of artifact with the parallel-sided stem and straight base has not been recognized as distinctive in any of the reports dealing with Central Texas, although they are figured by Jackson.⁴⁵ A few have been reported from the Pecos River shelters; five percent at Murrah Cave⁴⁶ and about one percent at Eagle Cave.⁴⁷

The projectile points of group II are 16 in number and make up 12.1 percent of the total. The three sub-groups drawn in figure 3 differ radically from each other, but a similar common form may be observed in archaeological material from the lower horizons in Central Texas.⁴⁸ A type very

³⁹Huskey, V., op. cit., p. 108

⁴⁰Sayles, E. B., op. cit., pl. XVIII, figs. d and e

⁴¹Huskey, V., op. cit., pl. 14, fig. 162, third specimen from the right

⁴²Davenport, J. W., op. cit., p. 16

⁴³Pearce, J. E., and Jackson, A. T., op. cit., p. 74

⁴⁴Kelley, G. C., op. cit., p. 148

⁴⁵Jackson, A. T., op. cit., fig. 18, p. 88

⁴⁶Holden, W. C., op. cit., p. 54

⁴⁷Davenport, J. W., loc. cit.

⁴⁸Pearce, J. E., "The Present Status of Texas Archaeology", Bulletin, Texas Archaeological and Paleontological Society, 1932, p. 46

much like II-A is reported from the middle of burnt rock middens in Llano County.⁴⁹ Sayles figures specimens identical with II-A and II-B as Abilene projectile points.⁵⁰ The only known occurrence of similar points west of the Nueces region is at Murrah Cave where they make up four percent of the projectile points.⁵¹

Stemless points of group VI total seven specimens and comprise 5.3 percent of the collection. No detailed correlations can be made at this time regarding either the horizontal or vertical range of these forms for they have too often been ignored or treated as unimportant knives. Isolated occurrences of specialized forms have been noted, however. Ray mentions the presence of small triangular dart points with beveling on the blade, similar to sub-group VI-A.⁵² The Gibson point of Ray is evidently identical with VI-D.⁵³ Both of these stemless points were found in north central Texas and usually lie at considerable depths below the surface. Sub-groups VI-B and VI-C are common over much of Texas. There is no evidence from the Craig site that stemless points, even of the "Folsom type"⁵⁴ are any older than any of the other dart points.

Artifacts other than projectile points are not sufficiently diagnostic to add much to the understanding of the culture complexes and elements present in the site. Shelter II was the only one which was dry enough to preserve any valuable wood or fiber artifacts or the designs painted on pebbles. It is entirely possible that such evidences were once present in greater numbers in other shelters, but have long since been destroyed.

⁴⁹Jackson, A. T., op. cit., p. 32

⁵⁰Sayles, E. B., op. cit., pl. X, p. 28

⁵¹Holden, W. C., op. cit., p. 54

⁵²Ray, C. N., "The Clear Fork Culture Complex", Bulletin, Texas Archaeological and Paleontological Society, no. 10, 1938, pl. 36 and p. 199

⁵³Ray, C. N., "The Deeply Buried Gibson Site", loc. cit., no. 12, pl. 48

⁵⁴Renaud, E. B., "The Folsom and Yuma Points as Known Today", loc. cit., no. 12, pl. 13, type 2-B.

If diagnostic wood or bone artifacts, such as bows, arrows or bison scapulae hoes, had been found at this site the correlation of the small projectile points with other sites where they occur would have been possible even though pottery, snub-nosed scrapers, and double-beveled diamond shaped knives were completely absent. It is possible that the small points found here without their usual associations may represent sporadic occupation of the site by nomadic or hunting groups which left none of their usual camp debris here other than the points. The presence of two short, broken sticks resembling bow ends, grinding stones of the single-handed variety, and oval bowl metates cannot be considered important in clearing up the picture, for while they are common in the South Plains horizon sites,⁵⁵ they are not diagnostic in themselves. Despite observable similarities already noted between the various small point forms found here and those described by Sayles from the Lipan and Wichita cultures, such suggestive relations cannot be considered acceptable as they are not supported by other evidence. No ethnological evidence exists for this area which would serve to connect the relatively late South Plains peoples' occupation of the shelters with any historic or proto-historic tribe known elsewhere in Texas. The absence of any European influences here further strengthens the idea that the small point complex here was not a part of the latest South Plains cultures. Following the McKern system of culture classification employed by Krieger,⁵⁶ the South Plains Phase belongs to the Playas Pattern of the "Agpo", or agriculture-pottery base. This site, however, does not relieve the uncertainty expressed by Krieger "whether this Playas pattern retained agriculture and pottery throughout its southward extension over central Texas."⁵⁷

⁵⁵Kelley, J. C., op. cit., p. 142

⁵⁶Krieger, A. D., "Notes on Texas Archaeology", Unpublished Manuscript, May, 1942

⁵⁷ibid, p. 4

In a broad way, the stated similarities between the elements of the large projectile point series and various cultural subdivisions can be corroborated by reference to the associated traits found in each suggested relation. The large group of expanding stem, indented base dart points form an entity, in the culture sense, which can be considered an aspect of the Central Texas Phase. This aspect, however, does not have the wide geographic extent postulated by Sayles, for the types of projectile points which he included in his late Edwards Plateau culture are at least in part limited in distribution to the immediate area of the upper Nueces. This area, defined by Krieger as the Nueces Canyons Aspect, represents a local development "intermediate geographically and culturally to the Trans-Pecos and Central Texas Phases."⁵⁸ Due to this intermediate position, the Craig site contains elements of the broad Central Texas block which reached their greatest development both to the east and to the west of the site. The Central Texas Round Rock type of projectile point, as previously mentioned, is present in small numbers here, but other diagnostic traits from the immediate eastern area are not numerous. The flint gouge common in the eastern part of the Central Texas block and the "net-sinkers" found in the Guadalupe River phase are not found here. However, the pitted manos, large percussion-chipped blades, and crude choppers of the general Central Texas phase are common.

The western part of the Central Texas Block developed numerous local types of artifacts which have been distributed into the upper Nueces area. Typical elements of the Trans-Pecos phase, especially of the Pecos River aspect, have penetrated here. The Pecos River types of projectile points already mentioned were accompanied in this site by other elements of the

⁵⁸ ibid, p. 10

complex, especially perishable materials. The sandal matting, basketry fragments, cordage, twisted leaves, and "quids" can be duplicated in the Seminole focus. The wooden projectile fragments, fire hearths and fire drills, are also closely related to the Pecos River aspect as are, possibly, the pictographs observed on the shelter walls. Leaf blades, incised stones, and painted pebbles further strengthen the evidence that the Pecos River influences were strong. Infant burials within the shelters, covered by metates and limestone boulders and slabs, and in one case, a bit of basketry, further support the connections. The bird bone beads, bone awls, and antler hafts are also significant. All of this evidence, however, is out of proportion, for it tends to emphasize the artifacts which of necessity cannot be observed from the open sites to the east. The small number of typical Pecos River projectile points would indicate that the strong relations with that area observed on the basis of traits mentioned above are actually no greater than relations with the area to the east. Kelley has determined that two aspects which most influenced the local development in the Craig site, the Pecos River and Round Rock cultures, are apparently contemporaneous.⁵⁹

The Big Bend aspect of the Trans-Pecos phase can also be demonstrated to be related to the Nueces Canyons aspect. The similarity in at least one type of projectile point has already been noted, and others have been observed by Kelley who summarizes saying, "there is good evidence for the close relationship of the late Edwards Plateau Culture and the Chisos focus."⁶⁰

The older section of the Central Texas Block, represented widely over Texas by the Abilene complex and the Clear Fork focus, is apparently present here in the attenuated form. Only projectile points, the relations of which

⁵⁹Kelley, J. C., op. cit., p. 147

⁶⁰ibid, p. 147

were demonstrated on page 66, belonging to this complex are present. The characteristic heavy gouges, core scrapers, and fist axes are absent.

As previously mentioned in reference to the stemless projectile point group relations, there is apparently no evidence of the Folsom-Yuma block here, although it is postulated as underlying and overlapping with the Central Texas block throughout much of Texas.⁶¹

To review briefly, using the McKern terminology, the first of the two major complexes belongs to the "Agpo" base and represents an undetermined aspect of the South Plains phase of the Playas pattern. The second and larger complex is identified with the Nueces Canyons aspect, with accretions from the generalized Edwards Plateau, Round Rock Pecos River, Chisos and Abilene (Clear Fork) foci, the Pecos and Chisos being elements of the Trans-Pecos phase, which with the Central Texas phase comprise the Balcones Pattern of the broad Hunting-Fishing-Gathering base.

Depth has been given to these correlations by reference to Kelley's data on the South Plains block (South Plains phase), the Central Texas block (Central Texas-Trans-Pecos Phases), and the here undetermined Folsom-Yuma block, which, in the McKern system, is a part of the early hunting base.

Absolute dates for the culture horizons mentioned cannot be determined from present evidence, but Kelley has assigned circa 1200 to 1800 A.D. as the date for the Bravo Valley aspect which he considers contemporaneous with the Wichita phase, both of which belong to the South Plains block.⁶² This date has been determined on the basis of cross-finds of pottery between Texas and the Southwest. As the Wichita phase is not present, the most that can be said about such a date is that it is suggestive of the age

⁶¹ibid, p. 143

⁶²ibid, p. 161

of the undetermined South Plains aspect found here. The date of 800 to 1400 A. D. has been tentatively given for the Chisos focus which is thought to be roughly equal in age to the late Edwards Plateau culture of the Central Texas block.

It is apparent, then, that the Craig site occupies a marginal position between Central Texas and the Pecos River areas both geographically and culturally, sharing with them a South Plains and an earlier Central Texas horizon.

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