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TEXAS ARCHEOLOGICAL SOCIETY

(Formerly Texas Archeological and Paleontological Society)

The Society was organized and chartered in pursuit of a literary and scientific undertaking; for the study of history, prehistory, and the major artifacts of man and the fossils representing the past floras and faunas of Texas; for the encouragement of the proper collection and preservation of such artifacts and fossils in museums and their study and classification and the publication of the results of researches incident thereto.

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DR. CYRUS N. RAY for more than a quarter of a century has devoted himself to the furtherance of Texas archeology and the Texas Archeological Society. His pioneer research into the archeology of the Abilene area is recorded in the numerous articles he has written for the *Bulletin*, and his enthusiasm and dedication to the Society is evident in his many years of service. He is a charter member of the Society, was Editor of the *Bulletin* from its founding in 1929 until 1947, was President from 1929 until 1948, has been President Emeritus since 1948, and a Fellow since 1952.

The society is deeply indebted to Dr. Ray, and it is with pleasure that this issue to the *Bulletin* is dedicated to him.

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Archeological Materials From the Northern Shore of Corpus Christi Bay, Texas

JAMES E. CORBIN

ABSTRACT

From 1957 to the present, the writer has made an archeological survey of the northern shore of Corpus Christi Bay, Texas. During this period, 16 campsites were located. With one possible exception, the McGloin Bluff Site, all are shell middens. Collecting from the surface of these midden areas produced well over 4,000 artifacts which are described in detail, and which are assignable to either the Rockport or Aransas Focus.

INTRODUCTION

The central portion of the Texas Gulf Coast, that area between the Brazos River and Corpus Christi Bay, has yielded archeological materials that can be assigned to one of the four development stages set up for Texas as a whole (Suhm, Krieger, and Jelks, 1954). Thus far the earliest stage, the Paleo-American, is known only from surface finds of certain dart point types, including *Plainview* and *Clovis*. The later Archaic Stage is represented by the Aransas Focus, the majority of the material coming from two excavated sites on Copano Bay (Campbell, 1947; 1952) and from surface collections near Corpus Christi (Campbell, 1956). The Rockport Focus has been recognized for the Neo-American and Historic stages, mainly from archeological surveys (Martin, n.d.; 1929; 1931; Potter, 1930; Sayles, 1935); from excavated Aransas Focus sites that were overlain by small Rockport components (Campbell, 1956); from surface collections near Corpus Christi (Campbell, 1956); and from an excavated Rockport Site on Live Oak Point (Campbell, 1958). Obviously, there are not a wealth of data from the central coast; and more material and information are needed before it is possible to have a good understanding of the prehistory of the area.

The purpose of this paper is to describe and evaluate archeological materials I have collected from the surface of 16 sites found in an areal

reconnaissance of the extreme southern portion of this central coastal area. This survey, a sporadic operation from 1957 to the present, covered an area between the city of Portland and the eastern edge of the southern tip of Live Oak Peninsula.

The physiographic features of the region are much the same throughout: short beaches backed by bluffs ranging from 12 to 18 feet high. The bluffs are usually composed of a white clay which is frequently capped by a four to 18 inch deposit of black, sandy clay. On the southern edge of Live Oak Peninsula, however, the black clay is replaced by wind-blown sand. Here the vegetation is mainly grasses and oak trees, whereas elsewhere (from Kinney Bayou to Portland) it is grasses and mesquite trees.

McGLOIN BLUFF SITE (41-SP-11)

McGloin Bluff is located on the southern tip of Live Oak Peninsula and faces south toward Corpus Christi Bay. The bluff runs east and west, and extends from just east of Harbor City to the base of Ingle-side Point. It is approximately 14 feet above sea level, and there is a short beach between the bluff and the waters of the bay. The eastern half of the bluff is covered with sand dunes that are 12 to 20 feet high. The main vegetation is grasses, with a few oak trees on the western section.

The site is approximately at the mid-point of the bluff; its western half is covered with dunes, but the eastern half is fairly exposed. There are two running springs located on the site. One is on the western extremity of the site and only started flowing freely after the recent (1961) hurricane Carla. A second and more reliable spring is located at the mid-point of the bluff, and the major portion of the site seems to be centered in this area. There used to be a third spring on the eastern edge of the site, but it apparently has not been flowing for the past 20 years.

I first visited the site early in 1957, after being told of an Indian "mound" in the area. What I found was a large site on a bluff which was dissected by a series of small gullies, the areas between the gullies giving the impression of mounds. No shell midden deposits can be seen anywhere in the vicinity; in fact, very little shell can be found on the site. At the time of the initial visit, potsherds and flint flakes were very numerous but now, after 150 collecting trips to the site, very few artifacts can be recovered. The collection was made entirely from the surface and to date consists of 66 stone and shell artifacts and 3,381 potsherds.

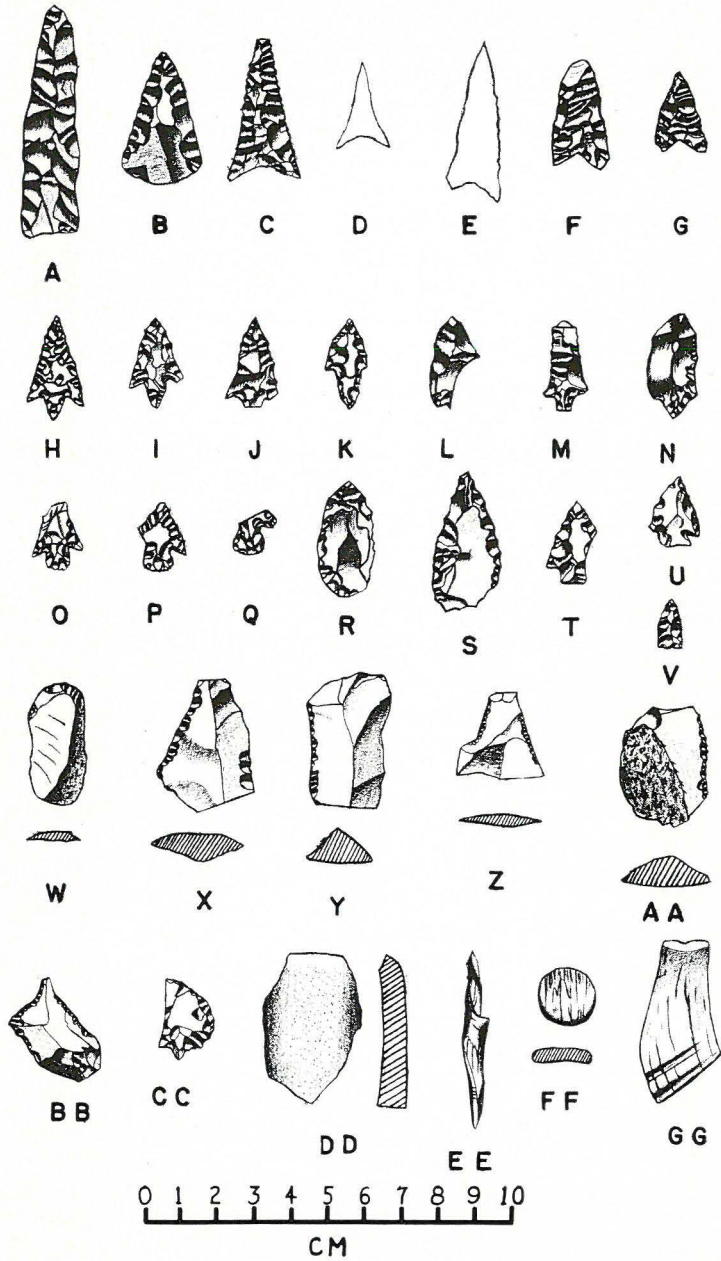


Fig. 1. Artifacts of stone and shell from the McGloin Bluff Site.

Projectile Points. Flint projectile points are represented by 27 specimens, seven of which are unidentifiable distal fragments. Of the 20 identifiable points, two can be classed as dart points. One of these (Fig. 1, A) falls within the range of the *Dart* type and has a blade that is alternately beveled to the left. The stem, barely discernible because of extremely small shoulders, is basally thinned. The other point, classified as *Catán* (Fig. 1, B), has a convex base and alternately beveled blade edges. These two specimens are the only suggestions of an Aransas Focus occupation. However, both types are thought to have survived into later times and therefore may be associated with the better represented Rockport Focus.

The remaining 18 specimens are arrow points, and almost all of these fall within the range of types associated with the Rockport Focus. The *Perdiz* type, which includes seven points, predominates. Four of these (Fig. 1, H-J) have blades with straight lateral edges, and one (Fig. 1, K) has a blade with convex edges. The stem of the latter specimen is longer than the blade. A sixth *Perdiz* (Fig. 1, M) has a blade with concave edges. The seventh (Fig. 1, N) point may be classified as a *Cliff-ton*, a crude *Perdiz*, or an unfinished point of either type. Three of the *Perdiz* are made from thin flakes, with complete flaking on one side and only minor flaking on the other. *Eddy* points (or *eddy* variety of *Scal-lorn*) are represented by three fragmentary specimens (Fig. 1, O-Q), all of which show evidence of having had short blades, strong barbs and bulbous stems.

Two triangular specimens with gently concave bases are classified as *Starr*. One (Fig. 1, C) has nearly straight lateral edges, while the other (Fig. 1, D) has concave lateral edges with slight serrations on the proximal two-third of these edges. Two other triangular points from the site are identified as *Young*. These (Fig. 1, R, S) are made from thin, essentially unifacially worked flakes.

Six additional arrow points do not fit into any of the recognized types and will, consequently, be described individually. One (Fig. 1, T) has a rectangular stem and shoulders which extend at right angles from the stem. The edges of the blade are straight and slightly serrated. Another small, crude point (Fig. 1, U) has an expanding stem with a straight base and small barbs formed by corner notches. The edges of the blade are straight. A small (1.4 cm. long) triangular point (Fig. 1, V) has a straight lateral edge. One side has a slight shoulder about halfway down the edge. Three triangular points (Fig. 1, E-G) have very deeply concave bases; one of these (Fig. 1, G) has essentially straight lateral edges, and the others have slightly concave blade edges.

Scrapers. End scrapers are represented by one small (3.4 cm. long and 1.3 cm. wide) specimen worked on one end (Fig. 1, W). Side scrapers, by contrast, include four examples (Fig. 1, X-AA), one of which (Fig. 1, X) is roughly triangular in outline and has two worked edges, one being concave, the other convex. A second specimen (Fig. 1, Y) is rectangular in outline (4.5 cm. long and 2 cm. wide) and is worked along one straight lateral edge. A third side scraper (Fig. 1, Z) is made from a thin, roughly triangular flake and is lightly retouched on two edges. The fourth specimen (Fig. 1, AA) is also rectangular in shape and is retouched along one straight lateral edge.

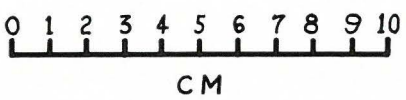
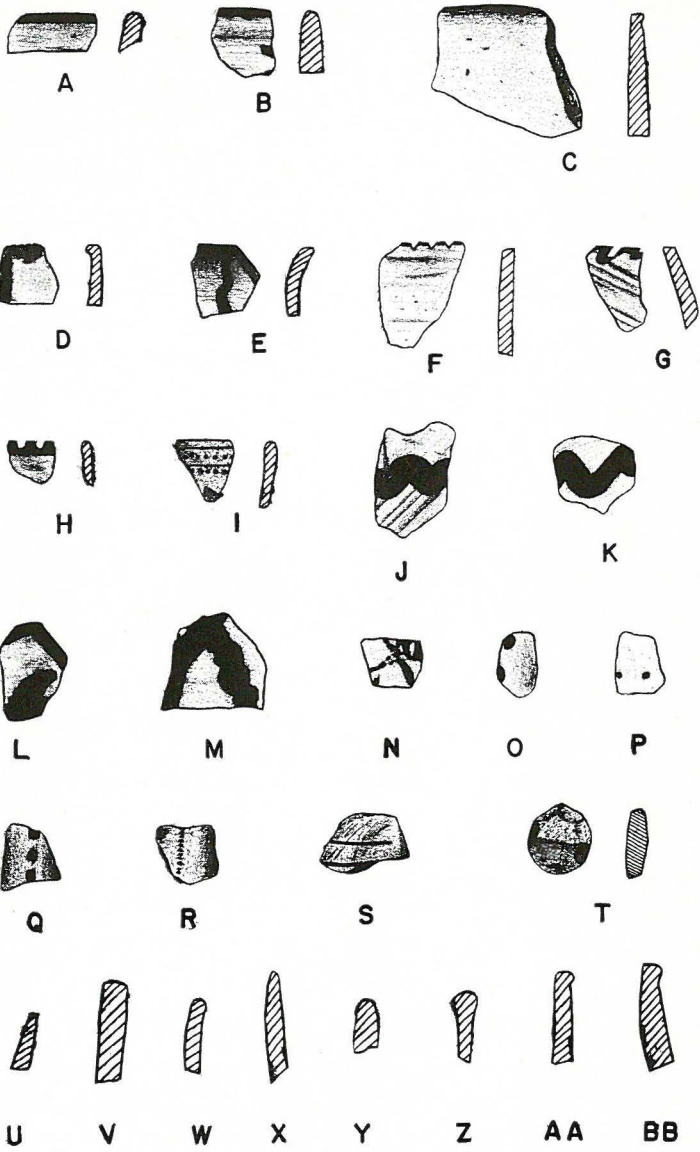
Gravers. One graver (Fig. 1, BB), made from a roughly triangular flake, was found at the site. It has two graver points, one of which is broken. One long worked lateral edge might have been used for scraping purposes.

Miscellaneous Worked Stone. Two pieces of worked flint cannot be identified. The first specimen (Fig. 1, CC) is roughly semicircular in outline, is worked on both faces, and has a small projection at one end. The second unidentified fragment (not shown) is D-shaped in outline, bifacially chipped, and has retouching along the convex edge.

One worked fragment of hard, gray sandstone (Fig. 1, DD) appears to be an incurvate rim fragment from a tubular stone pipe. The exterior surface is very well ground, and the interior only a little less so. Reconstructed, the interior diameter is approximately 8 cm. The fragment is .7 cm. thick at the rim and .8 cm. thick at the opposite end of the fragment.

Shell Artifacts. Although shell of any kind is scarce at the site, 30 shell artifacts were found. Twenty of these are small whelk shell columella fragments ranging from 2.5 cm. to 7 cm. in length. The ends of one undamaged columella (Fig. 1, EE) have been ground to very sharp points. Another type of shell artifact is a small disc (Fig. 1, FF) which shows heavy grinding along the edges. This specimen is 1.7 cm. in diameter and approximately .5 cm. thick. A roughly trapezoidal shell fragment (Fig. 1, GG) with a steep bit on the smaller end appears to be a fragment from the body of a scallop shell. The remainder of the shell artifacts are small, unidentifiable fragments.

Pottery. The many collecting trips to the site have resulted in a collection of 3,381 potsherds, not including a large number of exceptionally small and badly eroded pieces. The sherds are classified according to the types defined in *An Introductory Handbook of Texas*



Archeology (Suhm, *et al.*, 1954: 382-385); with nearly all falling within the *Rockport* series.

1) *Rockport Plain*. Rim sherds from *Rockport Plain* vessels number 139. These include 63 flat-lipped rims (Fig. 2, U, V), 11 of which have asphaltum coatings on both surfaces.* Only four have asphaltum on the exterior surfaces, and one has scoring on the exterior surface.

Sixty-five sherds are from vessels with rounded lips (Fig. 2, W-Y). Thirty-six of these have no asphaltum, but four have scoring on the interior surfaces. Asphaltum is found in 29 sherds, 17 having asphaltum on one side only. Of these 17, six have asphaltum on the exterior surfaces and five have asphaltum on the interior surfaces, with two of the former scored on the interior and one of the latter scored on the interior. One of these sherds is from a vessel whose internal diameter at the mouth was approximately 4 cm. It is not possible to determine which surface has been asphalt coated on six sherds.

Four additional sherds, three with asphaltum coatings, have beveled lips, but it is impossible to distinguish the interior from the exterior surfaces.

Two sherds have thickened lips (Fig. 2, Z). One of these has asphaltum and scoring on the exterior surface, the asphaltum extending about halfway across the lip. Vessels with V-notched lips are represented by five sherds.

2) *Rockport Black-on-gray*. Sherds of this type number 74, 32 of which are from vessel rims. Vessels which had rounded lips are represented by 24 sherds (Fig. 2, A, B). On all of these only the lip proper is painted. Four sherds are from vessels that had flattened lips (Fig. 2, C). On three of these just the flat part of the lip is painted. The lip of the fourth sherd (Fig. 2, D) is rolled to the interior and is lightly incised with parallel diagonal lines; it and the interior of the sherd are coated with asphaltum. On the exterior surface of the sherd a vertical, asphaltum painted line extends down from the rim.

One sherd (Fig. 2, E) is from a vessel with an outcurved rim. A wavy line of asphaltum runs vertically down from the rim. The interior surface of the sherd is coated with asphaltum and this extends up to the top of the lip.

* Suhm, Krieger, and Jelks (1954: 384) designate any *Rockport* ware bearing asphaltum as *Rockport Black-on-gray*. Herein, however, this type is restricted to those sherds having obvious designs.

Fig. 2. Potsherds from the McGloin Bluff Site. Rim profiles are oriented with their interior surfaces facing left.

Three sherds indicate different types of lip notching. One of these (Fig. 2, F) has a V-notched flat lip painted with asphaltum. A second flat lip (Fig. 2, G) is notched with diagonal crenelations and also painted with asphaltum. The only other rim sherd (Fig. 2, H) has U-shaped notches and the same style of lip painting as described above.

Asphaltum painted decorations appear on 42 body sherds. The motifs consist of various straight, wavy, dotted, and dashed lines on the exterior surfaces. Of these, 33 also have asphaltum coatings on the interior surfaces. Two of the latter have interior scoring associated with asphaltum coating, while another two have scoring, but no asphaltum, on the interior surface.

3) *Rockport Incised*. One sherd (Fig. 2, S) with two parallel incised lines can be classified as *Rockport Incised*.

4) *Rockport ware body sherds*. A total of 3,153 body sherds fall within the *Rockport* ware classification but cannot be identified with a specific type. Of these, 1,507 bear no asphaltum, but 125 do have scoring marks. Scoring is present on both sides of 32 sherds, and 93 sherds have scoring on one side only. Exterior scoring occurs on seven sherds, and 42 sherds have interior scoring. On the remaining 44 sherds it is not possible to tell on which surface the scoring occurs.

Sherds with asphaltum coating number 1,554. Of these 712 have asphaltum coating on the exterior surfaces and 601 have asphaltum on the interior surfaces. Asphaltum occurs on both surfaces of 241 sherds.

Scoring and asphaltum combinations are found on 90 sherds. Scoring occurs on both surfaces of 22 sherds, with six having asphaltum on the interior surfaces, seven having asphaltum on the exterior surfaces, and on seven sherds it is not possible to determine on which surface the asphaltum occurs. Of the sherds with both surfaces scored, two have both sides coated with asphaltum. One side only of 68 sherds has been scored.

Exterior scoring is present on ten sherds, with four having asphaltum on this surface and four having it on the interior. Asphaltum occurs on both surfaces of two of these sherds. Interior scoring is found on 21 sherds, ten having asphaltum on this surface and 11 having asphaltum on the exterior surface. It is not possible to tell on which surface the scoring is present on the remaining 37 sherds. Asphaltum occurs on the same surface as the scoring of 15 sherds, on the opposite surface on 16 sherds, and on both surfaces of six sherds.

Two sherds from the necks of bottles have punctations on the exterior surface. One of these (Fig. 2, R) has a single row of punctations

and asphaltum on the interior surface, and the other has a triple row of punctations.

5) *Incised-Punctated Sherd.* One *Rockport* ware rim sherd (Fig. 2, I) has a design consisting of alternating rows of incised lines and punctations, with the first incised line appearing just below the lip. This is followed by a row of punctations, an incised line, and another row of punctations. The punctations are rounded and seem to have been made with a bluntly pointed implement.

6) *Red slipped and red painted sherds.* A red slip appears on the exterior surface of one typical *Rockport* ware body sherd. Light scoring, clearly made before the vessel was slipped, occurs on the exterior surface. Another sherd with a white exterior has a thin film of red paint covering part of the surface.

7) *Worked sherds.* Two discs made from *Rockport* sherds (Fig. 2, T) show grinding on their edges and faces.

8) *Intrusive sherds.* Possible intrusive wares are represented by nine sherds. These are brown in color, and all are tempered with large white particles of unknown material. These may possibly be sherds from a vessel of *Leon Plain* (Suhm, *et al.*, 1954: Pl. 74, E), a type which is associated principally with the Central Texas Aspect. One of these is a rim sherd with a lip slightly rolled to the interior. Two other sherds have asphaltum coatings on the interior surfaces.

European Objects. European contact is indicated by a small blue glass bead. It is .3 cm. thick and .4 cm. in diameter. It is typical of 18th century European trade beads (Dee Ann Story, personal communication).

Conclusions. Analysis of the archeological materials from the McGloin Bluff Site indicates that only a *Rockport Focus* component is present. As noted previously, the two dart points need not be considered as evidence of an *Aransas Focus* occupation. The site seems to have been occupied mainly because of its fresh water and the food potential of the surrounding area. Of the few faunal remains found, fish bones predominate. (Until very recently, the shallow waters along this particular section of the coast were a favorite of trout, red and flounder fishermen.) The absence of oyster shells at the site probably indicates the absence of oyster reefs in the immediate area.

One of the more important findings made at the site is the red painted sherd. This sherd may answer a question that has been bothering

archeologists for sometime: Where is evidence of the red painted pottery that Gatschet (1891) describes for the historic Karankawa? Specifically, Gatschet writes (1891: 68):

Besides some rude attempts at wood carving a beginning of the plastic arts could be seen in the appliance of a paint, which was either red or black, and a clay producing a black color. With these they painted figures of animals and human faces upon their skins and upon pots and articles of wood. These paintings were far remote from any artistic finish and were but seldom seen.

It is my conjecture that this sherd is possibly part of that evidence.*

Identification of the Rockport Focus material from the McGloin Bluff Site is based on a comparison with specimens described in published works on the few excavated Rockport components located in the southern section of Texas coast. These materials were also compared with published trait lists for the Rockport Focus. The main value of the materials from this site is that they increase the number of artifacts that are needed to study the archeology of the area, and they also substantiate what is already known about the Rockport Focus. There is also the possibility that these materials represent the remains of late prehistoric and/or early historic groups in the area. The trade bead certainly indicates contact with Europeans.

INGLESIDE COVE SITE (41-SP-43)

Ingleside Cove is a small bay lying between Ingleside Point and the mainland. Just south of Kinney Bayou is the old fishing village of Ingleside, now shown on most maps as Ingleside on the Bay. The Ingleside Cove Site is located on the eastern shore of the cove approximately halfway between the settlement and the point. This site is a shell midden associated with the black sandy clay that comprises the top 12 to 18 inches of the low bluff around the cove. The shell midden occupies all but the top four to six inches of the black clay. The upper few inches contain, in the central section of the site, refuse material from a fairly recent historic occupation. The site is approximately 250 feet long and 25 to 30 feet wide at the present time. Before hurricane Carla the site was about 35 feet wider, and it was surely more extensive in the past.

I discovered the site on August 21, 1959, and collected the first archeological materials from the site at that time. I had very few arti-

* Recently, a complete vessel which was decorated with red paint and asphaltum was found eroding from a site near Corpus Christi (T. N. Campbell and Dee Ann Story, personal communication).

facts from the site before the hurricane, but as this section of the cove took a hard beating, a large number of specimens were deposited on the short beach and in the cove itself. The last collecting trip was made on April 20, 1962. Approximately 25 visits to the site were made from the time of discovery to the present. The collection to date consists of 46 flint and stone artifacts and 409 potsherds. Collecting was done on the beach and from the sides of the bluff.

Projectile Points. Of the 24 flint projectile points recovered from the site, seven are dart points, and another seven appear to be dart point fragments. Three of the dart points (Fig. 3, A-C) have triangular outlines and probably fit in the *Catán-Matamoros* range. All show basal thinning with two having convex bases and the other having a concave base.

The *Ensor* type (Fig. 3, D) is represented by one well flaked specimen that has slight shoulders and an expanding stem with a slightly concave base. A well worked leaf-shaped point (Fig. 3, E) may be classified as a narrow variation of the *Lerma* type. This point is thinned at the base, but it nonetheless has a fairly thick cross section. The remaining two dart points cannot be classified as to type. One (Fig. 3, F) has a slightly expanding stem with a straight base which had served as the striking platform of the original flake. Small bits of asphaltum, presumably used to help secure the point to the shaft, adheres to the stem. The other unidentified point (Fig. 3, G) has an expanding stem and a convex base. Slight shoulders are present, and the blade has convex edges which are bifacially beveled. This point is apparently reworked, as most of the stem and the central portions of both faces have a good patina, but the edges of the blade and tip do not.

The remaining ten points are arrow points, one of which has the stem missing and, consequently, cannot be identified as to type. Four of the points (Fig. 3, H-K) are classified as *Perdiz*, three as *Fresno* (Fig. 3, L, M), one (Fig. 3, N) as *Young*, and one (Fig. 3, O) possibly as *Scallorn*. Two of the *Perdiz* points have slightly concave blade edges, and the third has convex lateral edges. The fourth is a basal fragment of a point made from a thin flake worked principally along the edges of one face. All of the *Fresno* points have slightly convex lateral edges and straight bases. Two have serrated edges (Fig. 3, L), and the other (Fig. 3, M) is unifacially beveled on both lateral edges of the blade. The *Young* point is worked on one face only, and the striking platform has not been removed.

Scrapers. Two oval flakes (Fig. 3, P, Q) with retouching on one end

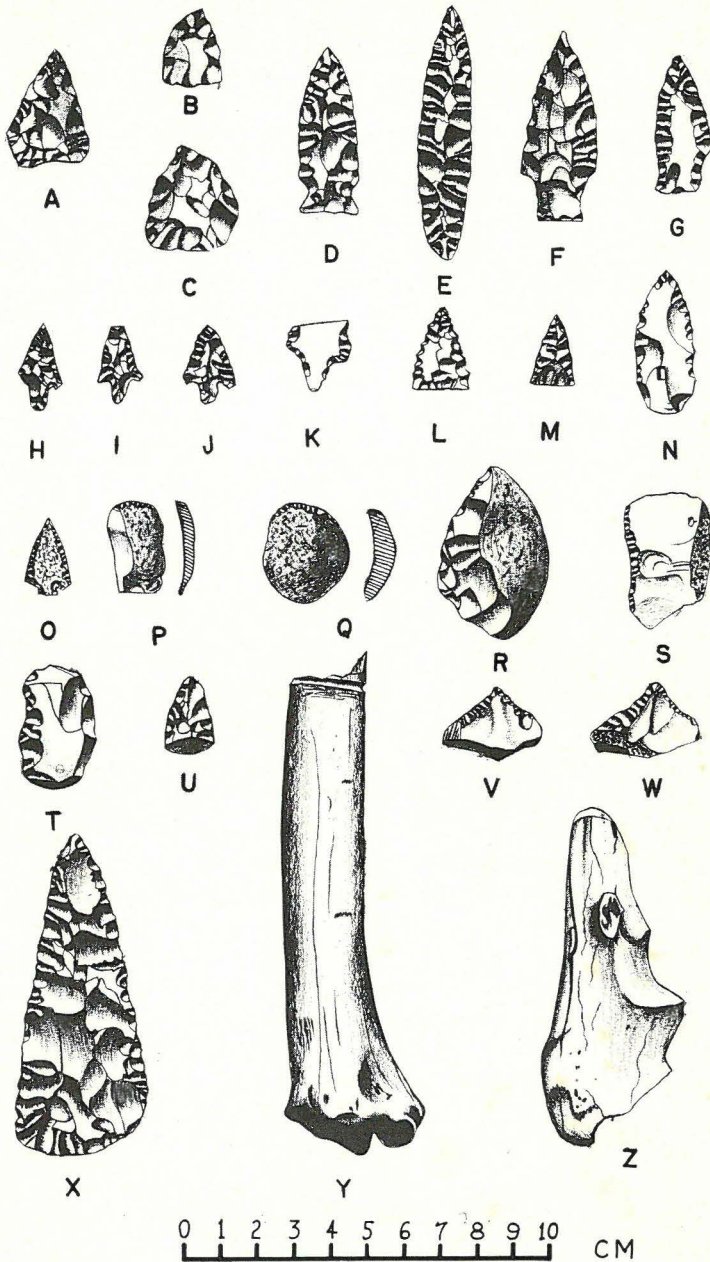


Fig. 3. Artifacts of stone and bone from the Ingleside Cove Site.

are end scrapers. The original cortex is present on the convex surface except along the worked edges. The side scraper category (Fig. 3, R-T) contains 14 specimens. These are made from a variety of flakes, varying considerably in size and having concave to convex edges.

Gravers. Three engraving tools (Fig. 3, V, W), two of which are made from thin flakes, were found.

Drill. One tip fragment of a drill (Fig. 3, U) shows extensive use.

Knives. One well worked specimen and the fragment of another are classified as knives. The complete specimen is triangular in outline and has lightly serrated edges (Fig. 3, X). The form of the fragmentary knife cannot be determined.

Cores and Flakes. Five large cores and five small cores were found at the site. Flakes of various sizes, shapes, and thicknesses number 132.

Shell Artifacts. A flat ovoid piece of shell shows heavy grinding on its edges and is the only definite shell artifact found. It is approximately 1.5 cm. in diameter and .5 cm. in thickness. Four badly eroded whelk columella were also found, but are not certain artifacts.

Worked Bone. Two pieces of bone show some modification. One (Fig. 3, Y) is a severed fragment of a deer long bone. The other artifact (Fig. 3, Z) is a flaking tool made from a deer ulna.

Pottery. The collection of potsherds consists of 409 specimens, exclusive of a number of very small and badly eroded pieces.

1) *Rockport Plain.* Eighteen rim sherds represent *Rockport Plain*. Eight sherds (Fig. 4, O, P) are from vessels that had rounded lips, two of which have scoring on the interior surfaces. Seven sherds, one of which (Fig. 4, D) is apparently from a vessel that had been repaired with asphaltum, represent vessels with flattened lips. Two of these have scoring on the interior surface and asphaltum on both surfaces. Three sherds are from vessels with lips beveled to the exterior (Fig. 4, R); one has scoring and asphaltum on both surfaces.

2) *Rockport Black-on-gray.* This type is represented by 12 sherds, six of which are rim sherds. Two sherds are from vessels with rounded lips, and only the lip proper is painted. One of these (Fig. 4, A) is from a vessel that has been repaired with asphaltum. Vessels with an internal lip overhang are represented by two sherds, one of which (Fig. 4, E) has the lip and the interior surface painted with asphaltum. The

other has only the lip painted. One sherd (Fig. 4, C) has an extended lip overhang, with the lip painted and the exterior surface scored. The remaining rim sherd (Fig. 4, B) has a V-notched lip that is painted with asphaltum.

Rockport Black-on-gray body sherds number six. Five of these (Fig. 4, H-J) have portions of wavy line designs on their exteriors and asphaltum coatings on the interiors. The other sherd (Fig. 4, K) has a portion of a straight line on the exterior surface.

3) *Rockport ware body sherds*. This series includes 379 specimens, 220 of which have no traces of asphaltum. Five sherds (Fig. 4, N) are fragments of vessels with thick, rounded bases. Lacing holes for repairing broken vessels are present on two sherds (Fig. 4, L). Scoring occurs on both surfaces of eight sherds and one surface of 29 sherds. Of these 29, four have the scoring on the exterior, 17 on the interior, and on eight it is not possible to tell on which surface the scoring occurs.

Sherds with asphaltum coatings number 158. Asphaltum is present on the exterior surface of 52 sherds, with scoring appearing on this surface on two sherds and the interior surface on ten sherds. The interior surface of 34 sherds is coated with asphaltum. Scoring is present on the interior of three of these, on the exterior surface of one, and on both surfaces of two. On 19 sherds it is not possible to determine on which surface the asphaltum is present. One of these has scoring on the same surface as the asphaltum and the other has it on the opposite surface. Asphaltum occurs on both surfaces of 53 sherds, of which eight have scoring.

One *Rockport* ware body sherd (Fig. 4, M) is unique in that it has an inlaid design on the exterior surface. The design, probably part of a larger motif, consists of four rather evenly spaced indentations that have been inlaid with asphaltum. The indentations appear to have been made before firing. One edge of the sherd shows mending of a crack with asphaltum.

Fire hardened clay lumps, which are common in all the sites except McGloin Bluff, were quite numerous at this site. These lumps are of random shapes and sizes and show varying degrees of firing. Their colors range from buff to red and dark brown to black.

European Objects. Although no European materials were found that could be linked with the *Rockport* material, a number of artifacts representing a late European occupation were collected from the beach below the central part of the midden. Seven sherds, three of which are of Spanish or Mexican origin and not datable, one coin, and an old-

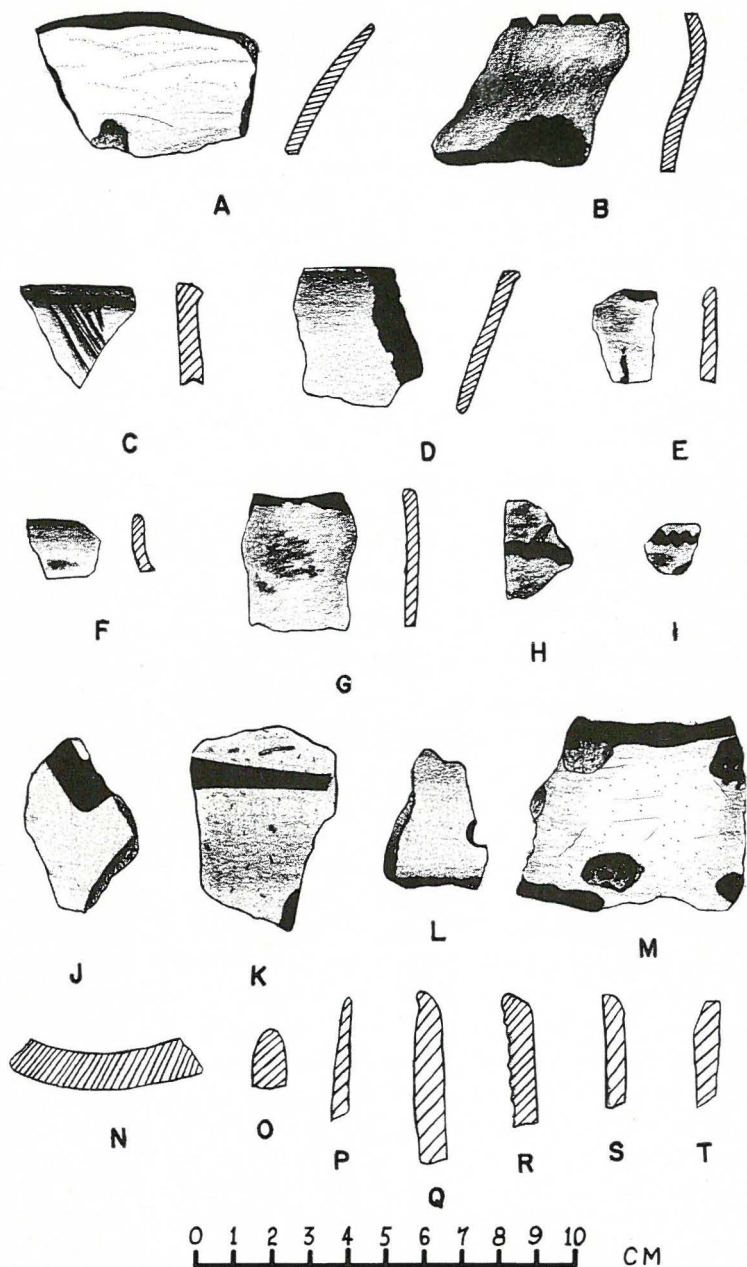


Fig. 4. Potsherds from the Ingleside Cove Site. Rim profiles are oriented with their interior surfaces facing left.

style clay marble represent this occupation. The coin is a United States quarter dollar, dated 1894, from the Philadelphia mint. The four remaining sherds, probably china of European manufacture, and the marble perhaps date at approximately the same time.

Conclusions. The archeological materials from the Ingleside Cove Site indicate that a Rockport Focus component is present. The midden deposit, however, is shallow and no stratigraphy is in evidence. No artifacts, with the exception of the *Ensor point*, are definitely assignable to the Aransas Focus. All other dart points found are types thought to have survived into the Neo-American period. The site was probably occupied because of the food potential of the surrounding area. Shell refuse, large mammal bones, fish bones, and rodent bones, in that order of frequency, can be identified in the faunal remains from the site.

The inlaid sherd represents a new decorative technique for this section of the Texas coast; in fact, this appears to be the first sherd of this type reported in Texas. However, a larger sample of this mode of decoration is needed before its full significance can be determined.

THE WINDY HILL SITE (41-SP-42)

Approximately 200 yards southeast of the mouth of Kinney Bayou a shell midden deposit is eroding from a bluff. The midden material occupies all but the top few inches of the black clay deposit which comprises the upper part of the bluff. Near the center of the midden and about 100 yards from the edge of the bluff is a small mound about 30 yards in diameter. Fragments of burned bone, shell and flint flakes can be collected from the gopher tailings on this elevation. This feature probably represents midden materials capping a small natural knoll.

I have not collected archeological materials from the site, but five dart points have been collected by the owners of the land, and these were given to me. Two of these may be classified as *Pedernales* points (Fig. 5, A, B). Both of these points have convex blade edges; one is barbed and the other is shouldered. The tip of the larger specimen has been reworked. A third point, identified as *Kinney* (Fig. 5, C), has a wide, lanceolate shape, convex lateral edges and a concave base. One small triangular point (Fig. 5, D) with convex, alternately beveled edges and a straight base is classified as a *Matamoros* point. The fifth point (Fig. 5, E) has a long, thin blade with convex edges and slight shoulders. The stem is badly damaged and a portion of one edge appears to have been reworked. It cannot be identified with any recog-

nized type. From the little evidence available, it seems probable that an Aransas Focus component is present at this site.

THE KINNEY BAYOU SITES

Kinney Bayou empties into the northeast side of Ingleside Cove, and meanders in a northeasterly direction to the outskirts of Ingleside. Two shell midden sites, one on the northwestern shore and another on the southeastern shore, are located on the bayou.

Kinney Bayou Site I (41-SP-39)

This shell midden lies buried in the bank on the northwestern edge of the bayou and extends from the mouth of the bayou to a point about 300 yards upstream. The midden, marked by J. E. Pearce on the U.S. Army Tactical Map, Corpus Christi Quadrangle, in July of 1930, is associated with a black soil which overlies a white caliche. The old University of Texas site number is 77B2-14.

Of the 11 worked stone artifacts collected from this site, three are identifiable as dart points, while another five are tip, medial, and basal fragments from dart points or knives. One point (Fig. 5, F) has convex blade edges, small shoulders, and a slightly expanding stem. The base of the stem has been damaged and it is not possible to determine its original form. Another dart point (Fig. 5, G) has a damaged base, but may be a *Matamoros* type. The edges of the blade are convex and are bifacially beveled. The base was thinned by the removal of several large flakes from one face. The third point (Fig. 5, H) has a triangular blade with straight edges and small barbs. Its stem is wide, has parallel edges and a slightly concave base.

Knives are represented by a single fragment of a fairly large triangular specimen (Fig. 5, I). The steeply beveled base is slightly concave, and the edges of the blade are convex. The tip of this specimen has been broken off. The only drills found at the site are two heavily used tip fragments. Chipping debris collected from the surface includes cores, three small and one large specimen, and 41 miscellaneous flint flakes, some of which contain flake scars that suggest use wear.

Before the hurricane, only one small, badly eroded sherd had been found at this site. On the last collecting trip in December of 1961, however, eight sherds, one of which is a *Rockport Plain* rim sherd, were recovered. These were all found within a few inches of each other and appear to be from the same vessel. No asphaltum or scoring is present on the sherds.

From the few archeological materials collected, it is difficult to determine much about the site. There is not enough evidence to say definitely which components are present, but very probably peoples of both the Rockport and the Aransas foci used the site. The size of the midden indicates that this was a favorite camping spot for a long period of time.

Kinney Bayou Site II (41-SP-40)

This site is located on the opposite shore and approximately 30 yards northeast of Kinney Bayou I. Unlike the other sites in the area, this one is not associated with the dark soil near the surface. Low bluffs border the bayou on this shore, and archeological debris is eroding from the bluffs three or four feet below the contact of the black soil and the white caliche. Material can also be seen eroding from the sides of three drainage ditches that have been cut through the site.

All of the six projectile points—four of which are essentially complete—can be classified as dart points. One of the fragments is from a straight based, side notched point; the other fragment (Fig. 5, J) is the lower half of a rounded base point, possibly a *Refugio*. Two of the complete points (Fig. 5, K, L) have blades with convex edges and expanding stems with convex bases. Slight shoulders are present on both specimens. One of these (Fig. 5, L) is made of fossil wood. Another dart point (Fig. 5, M) has a triangular, beveled-edge blade with one straight and one slightly convex lateral edge. The sixth point (Fig. 5, N) has a triangular blade with convex edges. Shoulders are present, but the base of the expanding stem has been damaged.

The other chipped stone artifacts recovered include a basal fragment of a triangular knife, three side scrapers, one ovoid scraper (Fig. 5, O) of fossil wood, a core and ten miscellaneous flint flakes. In addition, a piece of sandstone and a fragment of limestone may represent abrading stones, but both are too heavily weathered for positive identification.

Three conch (*Fasciolaria papillosa* Sowerby) columellae have been ground diagonally on one side of the anterior end to form gouges. Two of these gouges are badly weathered, but the third (Fig. 5, U) still has a sharp cutting edge. The remainder of the artifacts collected from the site are a piece of worked bone (Fig. 5, W), apparently a medial fragment of a bone awl, and numerous fire-hardened clay lumps of various sizes.

All indications point to an Aransas Focus occupation of the site, as none of the artifacts can be attributed to the Rockport Focus. As for

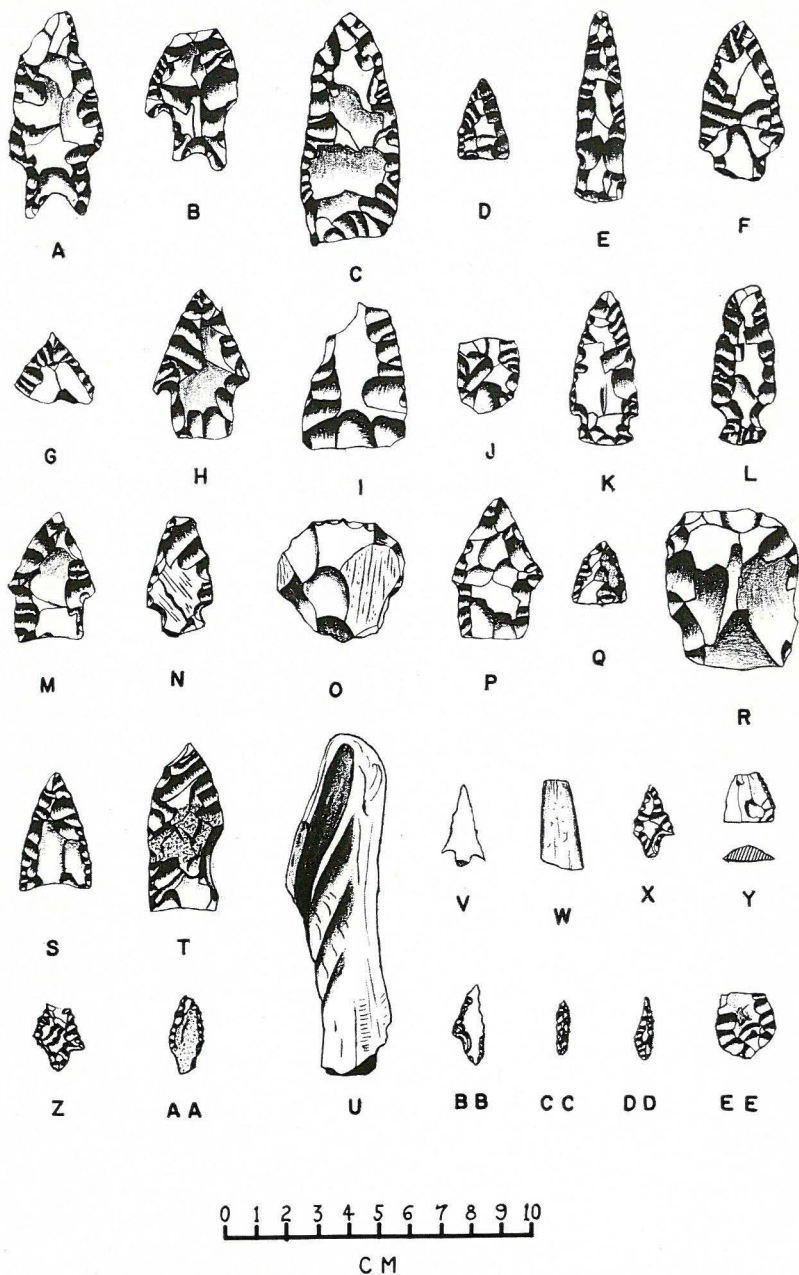


Fig. 5. Artifacts of stone and shell from the Windy Hill Site, the Kinney Bayou sites, the Ramirez Site, and the Brown sites.

faunal remains, shell predominates, but a few fragments of burned bone were found.

THE RAMIREZ SITE (41-SP-38)

About 300 yards west (inland) from Kinney Bayou Site I is a plowed field that contains two shell middens. The field runs north and south, and the middens are located at each end of the field, being separated from one another by about 30 yards. I collected only a fragment of an unidentifiable arrow point, one *Rockport* ware body sherd, and several lumps of fire-hardened clay from the northern side.

The southern midden yielded two dart points, a flint gouge, a knife fragment, and some fire-hardened clay lumps. One of the dart points (Fig. 5, P) has a triangular blade with straight edges; slight shoulders are present and the broad stem has straight, parallel edges and a straight base. The other specimen (Fig. 5, Q), a small triangular point, has convex edges and a straight base. It is unifaceally beveled on both edges and the base, and the striking platform is still in evidence at the base. The plano-convex gouge (Fig. 5, R) is identifiable as the *Clear Fork* type, although the base is broken.

Judging from the material collected, it seems that two components are represented: a *Rockport Focus* component at the northern midden and an *Aransas Focus* component at the southern midden. The artifact sample, however, is quite small and the identifications are very tentative.

THE LA QUINTA SITE (41-SP-35)

An old fishing resort named La Quinta is located on Corpus Christi Bay about two and one-half miles south of the town of Gregory. On December 26, 1961, I found a small shell midden eroding from a low bench about 14 feet below the contact zone of the black soil and white clay. In a survey of the area made three years earlier, no evidence of this midden was observed. Probably the recent hurricane Carla is responsible for exposing the midden, which covers an area of approximately 25 square yards. I collected nine lumps of fire-hardened clay, nine flint flakes, and a medial portion of a dart point or knife. The depth at which the material is eroding would seem to indicate a fairly early occupation site.

THE BROWN SITES (41-SP-26 through 41-SP-34)

The road from La Quinta to Gregory, the road from Gregory to

Portland, and the strip of coast from La Quinta to Portland bound a roughly triangular shaped section of land. All this area, except for a narrow strip bordering the bluffs, is under cultivation. Springs are fairly numerous along this part of the coast, and about a mile south of Portland a small creek empties into the bay. The first survey of this area was made in 1958, and at that time I found five shell middens eroding from the black clay layer. A second survey was made of the area between the creek and La Quinta in December, 1961, and four more sites were found.

Brown Site I (41-SP-26)

This site consists of a shell midden eroding from the black clay layer exposed in the side of a large drainage ditch. No artifacts were collected, but shell refuse, bone fragments, flint flakes, and fire-hardened lumps of clay were recovered from the edges of the ditch.

Brown Site II (41-SP-27)

Listed on University of Texas maps under the old number of 77B2-18, this site covers an area of about 50 square yards. Most of the cultural debris, however, has been moved down onto the beach area from an extensive gully that dissects a large part of the site. Material was collected in November, 1958 and in December, 1961, and includes a small group of artifacts (see below), charred bone, charcoal, and fire-hardened clay lumps. In addition, several fire hearths were observed.

One arrow point of the *Perdiz* type was the only projectile point collected. It (Fig. 5, V) has concave blade edges and strong barbs, but most of the stem is missing. Each of two small triangular flint flakes has fine retouching along the lateral edges. Three closely associated whelk columella "awls" were found eroding from the deposit, still *in situ*.

Pottery is represented by 15 sherds, one of which is from a *Rockport Plain* vessel rim. Another sherd, from the neck of a bottle, has traces of asphaltum coating on the exterior surface. Six of the body sherds have scoring marks on the interior surfaces.

It seems probable that only a Rockport Focus component is present at this site.

Brown Site III (41-SP-28)

About 14 feet below the contact zone of the black clay and white clay, I found a small shell midden eroding from a low bench. Two dart points, one small side scraper, one core, 17 fire-hardened clay lumps,

and ten miscellaneous flakes were collected. One dart point (Fig. 5, S), classified as *Tortugas*, is triangular in outline, has a concave base and convex edges that are alternately beveled on the left. The other point (Fig. 5, T) has a lanceolate outline with a concave base and strongly resembles the *Plainview* type, but lacks grinding on the basal edges. The scraper is made from a thin, triangular flake, and only one edge has been worked.

Brown Sites IV, V, VI (41-SP-29, 30, and 31)

These are a series of very small shell middens washing out from the black clay layer. They probably represent occupations by several small groups for short periods of time. Fire-hardened clay lumps, flint flakes, and burned bone fragments are mixed with the shell refuse.

Brown Site VII (41-SP-32)

Just east of the small middens described above, and in the same black layer, is a fairly extensive shell midden. The site covers an area of about 40 square yards and is dissected by a large gully. Most of the materials from the site have eroded down to the beach area via the gully.

One arrow point, a side scraper, and 11 miscellaneous flint flakes were collected from the surface of this site. The arrow point (Fig. 5, X) is of the *Perdiz* type and has slightly convex, serrated edges and light barbs. The majority of the flaking was done on one face, with only light retouching occurring on portions of the opposite face. The scraper (Fig. 5, Y) is made from a small rectangular flake and has only one worked edge.

A total of 26 body sherds represent *Rockport* wares. One rim sherd with a rounded lip is from a *Rockport Plain* vessel. Fire-hardened clay lumps occurred at this site, but were not as numerous as at other sites.

Brown Site VIII (41-SP-33)

This small shell midden is also weathering out of the black clay layer. Burned bone, flint flakes, and fire-hardened clay lumps and shell refuse can be seen on the surface. A pile of refuse, mainly bone, was eroding from one part of the site when I discovered it, and the remainder of this accumulation was excavated at the time. The pile contained various skeletal fragments of a deer and two drumfish ear bones. Pieces of burned bone and whelk shell which had previously eroded from this particular spot were also collected.

Projectile points are represented by five specimens, all of which are identifiable as arrow points. Two of them are fragmentary: one is part of a stem and the other the tip of a blade. One of the three remaining specimens is a *Perdiz*. The tip of this point (Fig. 5, Z) is missing, but the blade appears to have had straight, lightly serrated edges and small barbs. Another arrow point (Fig. 5, AA) has a blade with convex, serrated edges and slight shoulders. A portion of the stem and the tip of the blade are missing. The remaining arrow point, or small knife (Fig. 5, BB), has an asymmetrical blade and only one shoulder.

Two drills, both slender bi-pointed specimens, were found at the site. One (Fig. 5, CC) is rod-shaped, with parallel edges and a lenticular cross section. The other (Fig. 5, DD) has a proximal end that tapers to form very slight shoulders and a possible stem. Both are similar to the drills found at the Indian Island and Webb Island sites (Campbell, 1956: Pl 1, J; Pl. 3, NN-PP) on the southern side of Corpus Christi Bay.

Rockport Focus pottery is represented by 45 sherds, three of which are rim fragments from vessels of *Rockport Plain*. The rim sherds have flat lips, while one of the body sherds has scoring marks on the interior surface, and another has scoring on the exterior surface. The latter sherds also shows evidence of having come from a vessel that was mended with asphaltum.

Brown Site IX (41-SP-34)

Approximately 50 yards east of Brown Site VIII, another small midden is eroding from the black deposit. Like the other Brown sites, burned bone, burned whelk shell, fire-hardened clay lumps, and other cultural debris are weathering out from the midden. One arrow point, one whelk columella drill, and 15 *Rockport* ware body sherds were collected from the site. The arrow point (Fig. 5, EE) is the basal half of a point with a rounded base, possibly of the *Young* type.

SUMMARY AND GENERAL CONCLUSIONS

The materials collected in this survey have been described and evaluated. Since extensive excavations are not likely to be carried out in this area in the near future, I feel that this material has value in adding to our basic knowledges of the cultural complexes involved in the prehistory of the central Gulf Coast. From observations made while living in the area, I am of the opinion that unless extensive excavations are carried out within the next five to six years, a very large amount

of valuable archeological material is going to be lost to the rapid development that is taking place on the Texas Gulf Coast. It does not seem wise to rely solely on the work done in the past as, to my knowledge, only seven sites have been excavated in this area. Of these, five have been described in published archeological reports.

Three of the four culture stages recognized in Texas are identifiable in the material from this survey. The Aransas Focus of the Archaic Stage is fairly well represented by three sites (Windy Hill, Kinney Bayou II, and Ramirez), and the Neo-American Stage is well represented by the large amount of material (*Rockport Plain* and *Rockport Black-on-gray* sherds; projectile point types *Perdiz*, *Fresno*, *Young*, and *Starr*) assignable to the Rockport Focus. Materials that can be attributed to the Historic Stage are almost non-existent, although one site, McGloin Bluff, did yield a glass trade bead.

The materials attributed to the Aransas Focus substantiate what is already known about the complex. It appears that the three sites containing only Aransas Focus artifacts are on the fringe of the distribution of certain projectile point styles. Here the orientation for styles is directed for the most part towards central Texas. The collections from Webb Island (Campbell, 1956), on the opposite side of Corpus Christi Bay from my survey, contain a greater number of dart points more commonly found associated with Falcon and Mier Focus material to the south.

The rest of the sites involved in the survey can, for the most part, be attributed to the Rockport Focus. The large sample of material collected verifies the association of traits with the southern coastal area (*Starr* and *Fresno* points, tiny end scrapers, bi-pointed flint drills, and shell discs) and central Texas (*Perdiz*, *Scallorn*, and *Young* points). Additional cultural ties are suggested by the occurrence of the three arrow points (Fig. 1, E-G) with the deeply indented bases. These also occur in the Brownsville area, but as of yet have not been associated with any particular focus. The large sample of Rockport potsherds substantiates what we already know, as well as adding to our knowledge. Incised pottery is very rare, indicating that this area is on the periphery of the distribution of that decorative technique. The red painted sherd is some evidence of the pottery reported by Gatschet, and a new decorative technique is hinted at by the presence of the asphalt inlaid sherd.

Observations made during the survey may help shed light on two problems—the origin of the asphaltum used in the decorating of Rockport Focus pottery and the origin of the fire-hardened clay lumps—

which have been of concern to coastal archeologists. It seems probable that the asphaltum was picked up by prehistoric peoples in its natural state on the local Gulf shores. Today natural asphaltum can still be collected on the beaches, sometimes in very large quantities. Authorities working with the problem of keeping the Padre Island beaches free of asphaltum believe that it floats across the Gulf from tar pits and seeps on the coast of the Yucatan Peninsula. The asphaltum arrives on the Texas beaches in a soft enough state to have been applied immediately to the pottery; or it could have been collected, allowed to harden, and then remelted when later use was necessary. The problem may be resolved by collecting sufficient samples from the beaches and comparing them chemically with samples taken from archeological sites. It seems quite possible that the source discussed above will prove to be the same one the prehistoric peoples of the area used.

As for the second problem, all the evidence points to open fires built on the surface as the major explanation for the fire-hardened clay lumps. Several times I have found these lumps eroded from black, ashy areas along with charcoal, burned bone, and burned shell. Recently, I observed a modern camp fire being destroyed by erosion, and clay lumps identical to those collected in archeological sites were eroding out from this hearth. The lumps were darker in color and harder near the center of the hearth, getting lighter and softer towards the perimeter of the burned area. The color of the lumps seems to be determined by the amount of oxygen that can reach the clay while the fire is burning.

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Ingleside, Texas

Archeological Excavations at the Boy Scout Rockshelter (41TV69), Travis County, Texas

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ABSTRACT

A rockshelter, located near Austin, Texas (Travis County), was excavated by members of the local archeological society in 1960-1961. It contained a thin, buried occupation zone which yielded a relatively small number of artifacts. Projectile points indicate the occupation to have been pure Central Texas Aspect, possibly both Austin and Toyah foci. Several flint artifacts were discovered showing definite burin treatment.

INTRODUCTION

During the fall of 1959 members of the Travis County Archeological Society examined a rockshelter in the local Boy Scout camp area for evidence of aboriginal occupation. Although the shelter floor showed disturbance by present-day campers, several flint flakes were found suggesting a much earlier occupation. Additional flakes and two projectile point fragments from a small test pit confirmed the surface indications. On the basis of these finds the society decided a controlled excavation would be worthwhile. Excavation was begun February, 1960 and continued more or less regularly through succeeding weekends. The dig was concluded January, 1961.

ACKNOWLEDGMENTS

This report is offered as partial payment of the debt the society owes to the many persons who gave of their time and skills to help the members learn something of the science of archeology. Especially appreciated was the help and interest received from T. N. Campbell, J. F. Epstein, T. W. McKern, and E. L. Lundelius of The University of Texas; W. W. Newcomb, Jr., and Dee Ann Suhm of the Texas Memorial Museum; and E. B. Jelks of the Texas Archeological Salvage

* Travis County Archeological Society Report Committee.

Project. All were most gracious in repeatedly interrupting their busy schedules to help the society whenever called upon. In addition, special thanks go to E. Mott Davis, Research Archeologist of The University of Texas. Dr. Davis' many days at the site working and instructing others, and his never failing encouragement and contagious enthusiasm, sparked the project to completion.

LOCATION

Site 41TV69 is located in the southwestern portion of Travis County, about three miles northwest of the city of Austin. The shelter in which the site lies is located on the north bank of Bull Creek, about one-quarter mile upstream from the juncture of the creek with the Colorado River. About two miles south of the mouth of the creek, Tom Miller Dam impounds the river to form Lake Austin (Figs. 1, 2).

The site is on the property of the Tom Wooten Boy Scout Camp, main summer camp for the Sunrise District of the Capitol Area Council. The shelter is located in a steep cliff face, about 60 feet above the present level of Bull Creek. This creek is now flooded by backwaters from Lake Austin, and is reported to be about 10 feet deep where it flows past the site.

DESCRIPTION OF THE AREA

The area is made up of rolling hills interlaced with eroded gullies and massive limestone outcrops. It is about one mile west, on the up-thrust side, of the Balcones Escarpment and has a mean elevation of about 800 feet.

This is part of the watershed of the Colorado River, and the outstanding topographic features are the waterways eroded through the soft limestone hill cores. Most of the gullies and valleys are normally dry, supporting streams of surface run-off only during heavy rains. Several more or less permanent streams—one of the largest being Bull Creek—do exist, however. This creek is now drowned by the backwaters of Lake Austin and, as a result, is deep and relatively slow moving. During early times, however, it probably was shallow and fast flowing and, judging from present displays, must have been capable of generating torrents during heavy storms. Under such conditions the creek could be expected to become very erosive, particularly on soft limestone. The results are evident: deeply cut gaps through the hills and cliff-like stream banks. In certain of these cliff faces soft formations sandwiched between harder limestone layers permitted deep undercutting

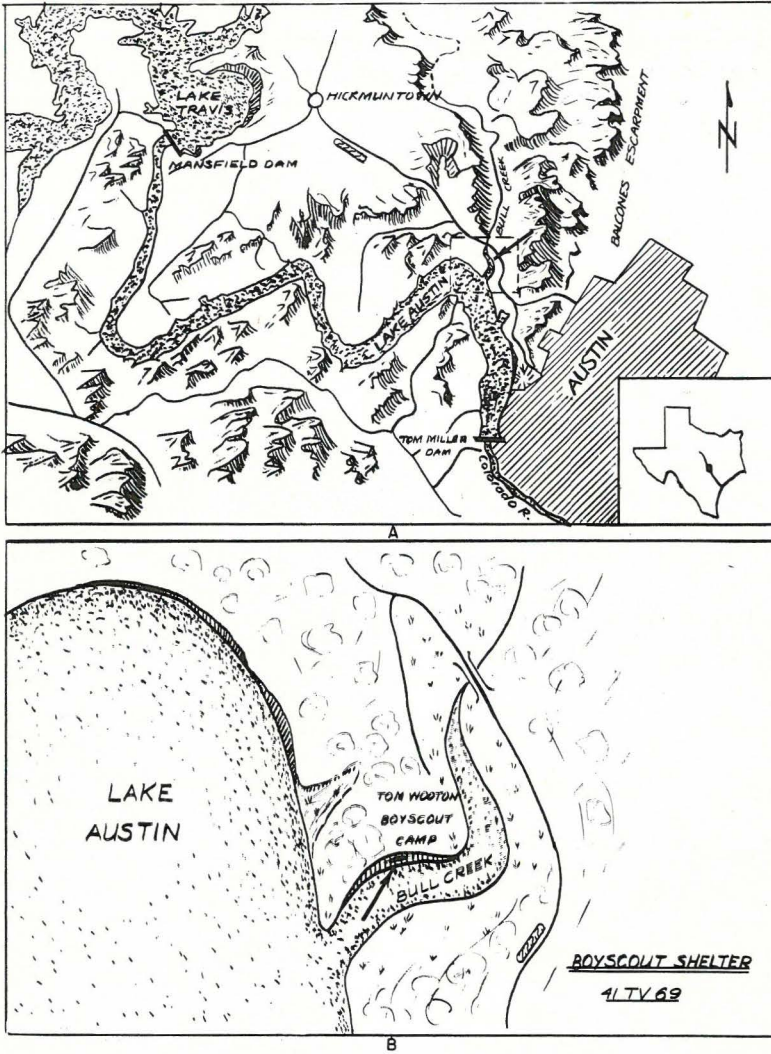


Fig. 1. Boy Scout Shelter. A, General location. B, The shelter and immediate environs.

of the rock. The results are rockshelters of the kind making up the present site.

Geologically this is an area of sedimentary deposits laid down during the Cretaceous period, later uplifted along the Balcones fault and, since that time, eroded into the characteristic maze of hills and valleys. The surface consists of a thin calcareous clay mantle with scattered

small areas of flint pebbles and wind blown sand—and limestone fragments, large and small, in great abundance.

The predominant formation throughout the area is the Austin limestone. These massive beds are interrupted at times with marl and thin lenticular deposits of flint.

The 25–35 inches of rainfall per year normally recorded for this area enforces rather firm limits on the growing season. Most of the rainfall is concentrated in the winter months, November-January, with a secondary amount falling in March-April. The low rainfall in the summer and fall, coupled with the hot summer temperatures (90–100° F.), limits vegetation to that adaptable to semi-arid conditions. This and the sandy soil with little or no humus present make agriculture a marginal enterprise. There is no evidence to suggest that these conditions were much different in aboriginal times.

Many foods grow wild here today and were doubtless available in earlier times: pecans, walnuts, acorns, hackberry, cactus, grapes, and wild plums are in evidence. The hills and valleys must also have provided excellent opportunities for hunting game: doves, quail, turkey, deer, rabbits, opossums, squirrels, racoons, and bobcats are reported as still present in the area. Evidently fish, mussels, water plants, and other foods were also available from the creeks and river.

DESCRIPTION OF THE SITE

This is a typical central Texas rockshelter in appearance (Figs. 2, 4). The shelter is actually in two parts: a small section about 35 feet long, at the eastern end of the ledge and a larger section on the west end. The smaller part is relatively narrow, about 10 feet wide, has an uneven rocky floor and scanty roof protection. Although a small test pit did turn up several flint chips, this section was not considered worth excavating.

The main interest was concentrated on the larger, western section of the shelter. This area measures about 85 feet long. It is approximately 14 feet deep, from front to back wall at floor level, and about 10–12 feet deep at ceiling height. The shelter floor is slightly lower in the middle than at either end, and in most places slopes gently from the rear wall toward the edge. For practical purposes, however, the surface of the shelter fill is level. The surface of the floor deposit is a hard, clay-like, crust relatively free of dust. It is also without vegetation under the roofed part, although the ledge at each end of the shelter and the talus slope in front is covered with bushes and small trees.

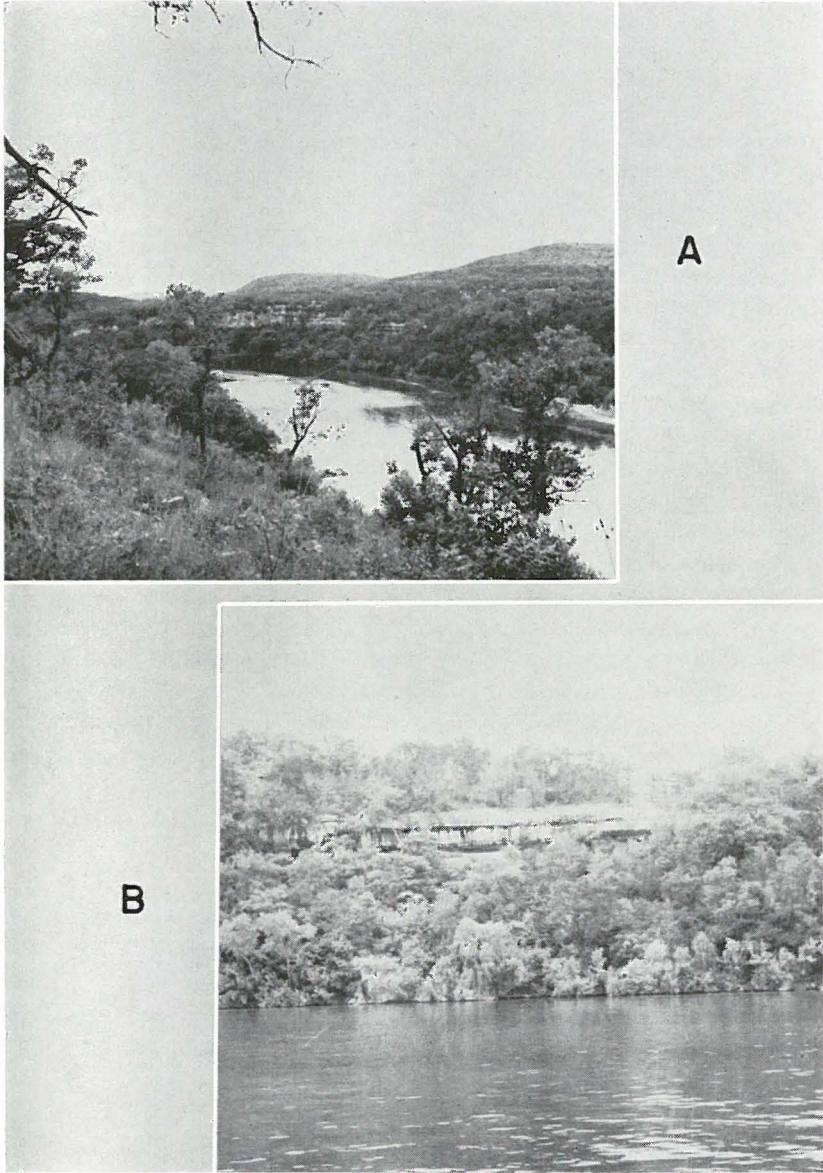


Fig. 2. A, Distant view of shelter, looking west. B, View of shelter from across Bull Creek.

The wall of the shelter contains several small lenses of marl-like rock and, towards the eastern end, the erosion of some of the material has formed a convenient, waist-high shelf. The wall and ceiling show evidence of several slow, water seepages. In some places on the ceiling, seepage has resulted in rather short, heavy stalactites. In addition, thin, curtain-like stalactitic formations occur on the wall. There is, however, no evidence that water flow into the shelter was ever more than the present seepage.

Along the outer edge of the floor deposit are several large block-like limestone boulders. The shape and position of these stones indicate that they are pieces of a once larger projection over the shelter. Other similar boulders are in evidence in the rather low talus slope between the cliff face and creek bank. As a guess, these rocks, if put back in place, would extend the roof outward by five to 10 feet. Several of the fallen rocks along the edge of the shelter contain erosion pits, an inch or more deep, worn there by water dripping from the roof. This, and the extent to which the present edge of the cap rock has been weathered, lead to the belief that the rock falls are quite old.

The boulders that rim the shelter provide a sort of curb protecting the shelter fill from damage by erosion from rain or surface water. In fact, beyond the evidence of a few small potholes and campfires of modern origin, there was no indication of any appreciable damage to the shelter deposit by natural or human activities. Scout camp officials were questioned regarding earlier excavations or artifacts found in the shelter. Replies indicated that the site was essentially undisturbed and that no artifacts had been collected from it.

EXCAVATION

Horizontal control was established by laying out a base line near, and approximately parallel, to the outer edge of the shelter. This line was marked by stakes at five foot intervals and a grid system of five foot squares developed from it. Although the long axis of the shelter is east-northeast, the base line, for convenience, was designated east-west. All squares are identified by the coordinates of the southeast corner, such as N30-E140 (Fig. 3).

A datum point located near the outer edge of the shelter was assumed to be at an elevation of 100 feet. The elevation of the top of each stake was measured by means of a transit and referred to the datum point. The elevation of ground level at each stake was also recorded.

Initial plans were to establish a vertical control system through

excavation by six inch levels. However, after several squares were dug using this method, it was apparent that finer control was sometimes necessary because the occupation zone in places was very thin. Where this occurred the squares were excavated in two or three inch levels.

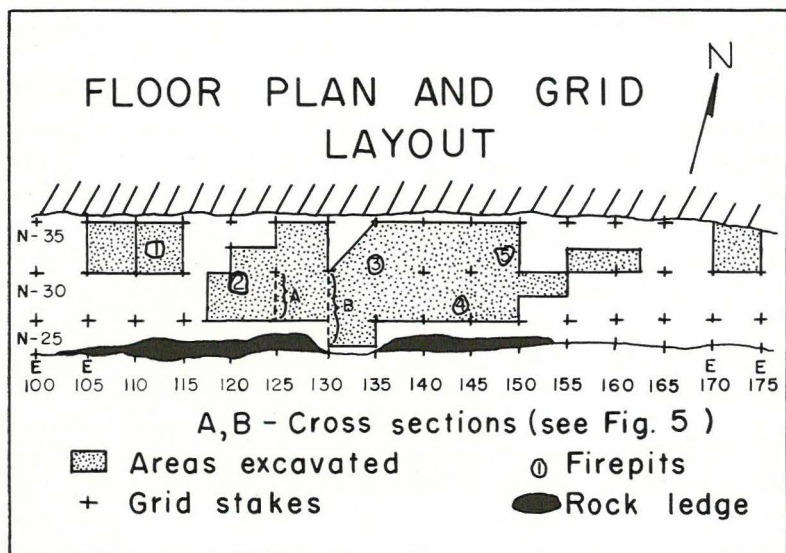


Fig. 3.

In some instances it was necessary to use small hand picks to loosen the compacted soil. Generally, however, soil was loosened and removed by shovel and trowel. All material was screened through a one-third inch mesh screen. Objects of interest were placed in sacks properly identified as to square and level. All artifacts were later washed, labeled, and catalogued for future reference. A total of 16 squares was excavated, most to a depth of about 20 inches below the surface, although several reached 30 or more inches in depth. Most squares were refilled as soon as digging was completed to avoid developing hazards for the scouts who continued to use the shelter as a part of their trailways.

Field notes were kept for each day's work and reports were made of the findings in each level of all squares. Sketches were made of special features. Soil conditions and strata exposed in the faces of many squares were also noted and sketched.

STRATIGRAPHY

The stratigraphy of the site was difficult to unravel because of the unevenness of the original floor, shallowness of the deposit, and the presence of several boulders at critical locations. In general the deposit in the back of the shelter was too shallow for much differentiation of strata. Some demarcation was possible in the front half, however. Two typical profiles are shown in Figure 5.

The bulk of the shelter fill was made up of a light brown, fine, sandy soil; probably wind blown from dried flood deposits along the nearby creek bank. Where this material received infusions of lime, as from water oozing from the back wall of the shelter or from the presence of a lot of lime fragments (roof spalls), it developed a caliche-like character. Layer 6 (Fig. 5) is believed to have been formed in this manner.

The early inhabitants of the shelter built their fires on, or in the floor deposit; or—by scooping firepits through the deposit—on the underlying bedrock. The result, a burned area filled with ashy soil and charcoal, is evident as Layer 5. Apparently, ash and charcoal from the fireplaces were moved toward the back wall—possibly by the wind or by the inhabitants as they cleaned out the hearths for succeeding fires. Whatever the cause, the result was a loose, gray, ashy stratum (Layer 3) between the fireplaces and back wall of the shelter. Succeeding deposition of a light, wind blown (?) soil (Layer 4) eventually covered these fireplaces. Capping most of the lower layers (6 through 3) was a compact, yellow, caliche-like mantle (Layer 2) containing many small fragments of limestone. This material was probably formed by the action of lime in the same manner as Layer 6. In fact, layers 2 and 6 may denote two wet periods separated by a dry interval as indicated by layers 3, 4, and 5. Layer 2 was somewhat more compact than 6; however, this may be due to its being nearer the top of the deposit and therefore subjected to more compaction by years of foot traffic through the shelter. The surface layer, i.e., the present floor of the shelter, was a thin, smooth, brown, compact soil (Layer 1). Occasional pit-like outlines (Fig. 5, item 7) were noted in the profiles. The material within these outlines was loose, coarse, dark brown soil. These pits are believed to be relatively modern.

The stratigraphy can be simplified by classification into three zones (Fig. 5):

Zone 1, bottom of the deposit, rested on rock and consisted of a caliche-like material which contained numerous limestone fragments. This zone occurred from two to 36 inches below the surface. Because of the irregularity of the shelter floor,

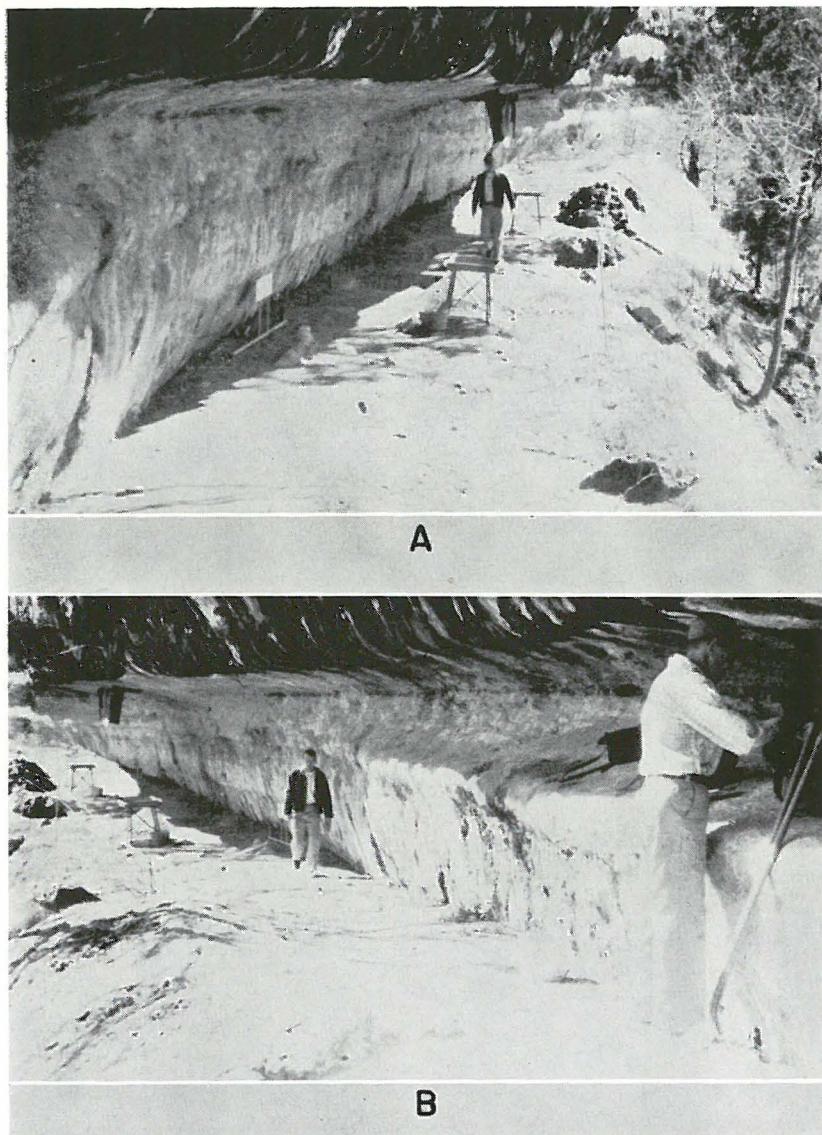


Fig. 4. Excavation of Boy Scout Shelter. A, Main shelter looking east. B, Main shelter, looking west.

its thickness could not be determined, but it probably ranged from several inches to several feet. This apparently was the surface upon which the first occupation took place. No artifacts were recovered from this zone.

Zone II, the middle part of the deposit, rested on *Zone I* and was the occupation zone. Its depth varied from two to 20 inches below the surface, and it was from one to 10 inches thick. A loose, sandy, tan colored soil, it was stained gray with ash in places, and was made up principally of layers 3, 4, and 5. *Zone II* contained numerous mussel and snail shells, fragments of small bones, and localized concentrations of charcoal flecks. Several fireplaces and most artifacts were found in this zone.

Zone III includes the surface layers which rested on *Zone II*. This was a thin zone of light brown soil capped by a hard compact crust. A few artifacts and flakes were found in this zone, but, because of probable disturbance to this part of the deposit, may be intrusive from *Zone II*.

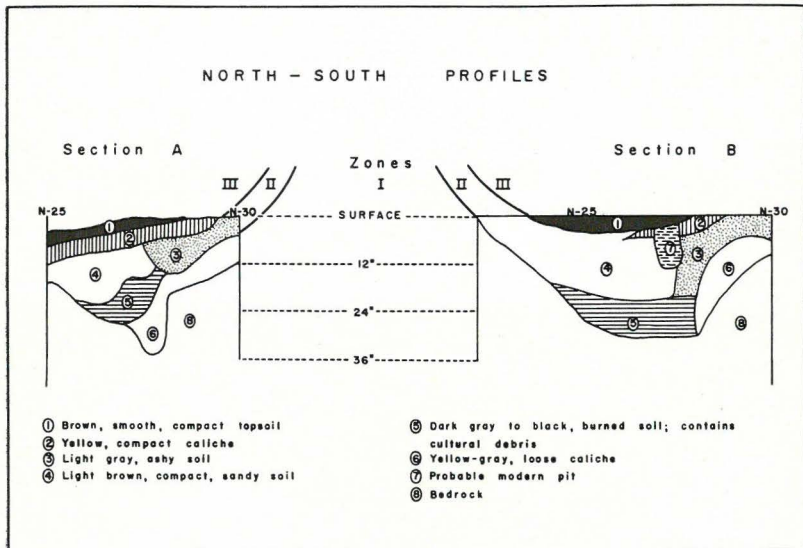


Fig. 5. North-south profiles along E125 and E130.

OCCUPATIONAL FEATURES

The only recognizable features in the shelter fill were a number of firepits or hearths. In all cases these were shallow, unlined, saucer-like depressions, surrounded by burned earth and filled with charcoal and ash stained soil. Five of these pits can be described as follows (Fig. 3):

Pit No. 1 was found in Layer 3, six inches below the surface, and was covered by a large flat rock (probably roof fall). The pit was rectangular in outline, about 18 x 13 inches, and four inches deep at the center. It was filled with fine charcoal and ashy soil. No shell, bone or artifact was associated with this feature.

Pit No. 2 occurred in Layer 4, five inches below the surface. This pit was a shallow, saucer-shaped depression about 12 inches in diameter and two inches deep. It contained only ash-stained soil and charcoal fragments

Pit No. 3 was found 12 inches below the surface, in Layer 4. The pit was oval 12 x 15 inches, and three inches deep. It was filled with soft, dark gray soil which contained bits of charcoal and flint. Numerous snail and mussel shells, some of them burned, were found in this pit.

Pit No. 4 occurred in Layer 3, 12 inches below the surface. The pit was shallow and saucer-shaped (about 12 inches in diameter), and was filled with dark, loose earth. Flint chips, bone fragments, a utilized flake, flint scraper, and two points (*Perdiz* type) were found in the same level as the firepit and within two feet of it.

Pit No. 5 was encountered six inches below the surface, in Layer 5. This was shallower than the other pits, was roughly triangular in shape, and was approximately two feet on each side. It was surrounded with ashy soil containing many bone fragments. One arrow point (possibly *Eddy* type) was found near this pit.

A number of other fireplaces were found in the shelter; some of these, however, were on, or so near to the surface that they are considered to be modern. In several instances this was confirmed by nearby finds of bottle caps, glass fragments, 22 caliber cartridge cases, etc. Several other possible hearths were noted as rather vague areas of ash or fire darkened earth, but were too poorly defined to be considered as firepits.

The number of artifacts (152) recovered from the site was not large. A shell concentration one foot below the surface, in Square N25, E145. Here 19 mussel shells were found lying almost end-to-end in a slightly curved east-west alignment. Near the west end of this line of shells was a small pocket of 25 snail shells and one 8-inch bone awl (Fig. 9, A, A'). Also found in this area were 17 small rodent and fish bones, and a smooth pebble-like limestone nodule about 3 inches in diameter. There were no indications of use—i.e., polish, scratches, impact scars, etc.—on the pebble. No explanation can be offered for this assemblage, although the shell arrangement indicates an intentional array rather than an accidental grouping.

DESCRIPTION OF THE ARTIFACTS

The number of artifacts (152) recovered from the site was not large (see Table 1). In addition, horizontal and vertical distributions were made relatively meaningless by the narrowness of the shelter floor and the shallowness of the deposit. Two general observations are possible: (1) most artifacts were found in the central part of the shelter, and (2) the artifacts showed no significant groupings either by type or location.

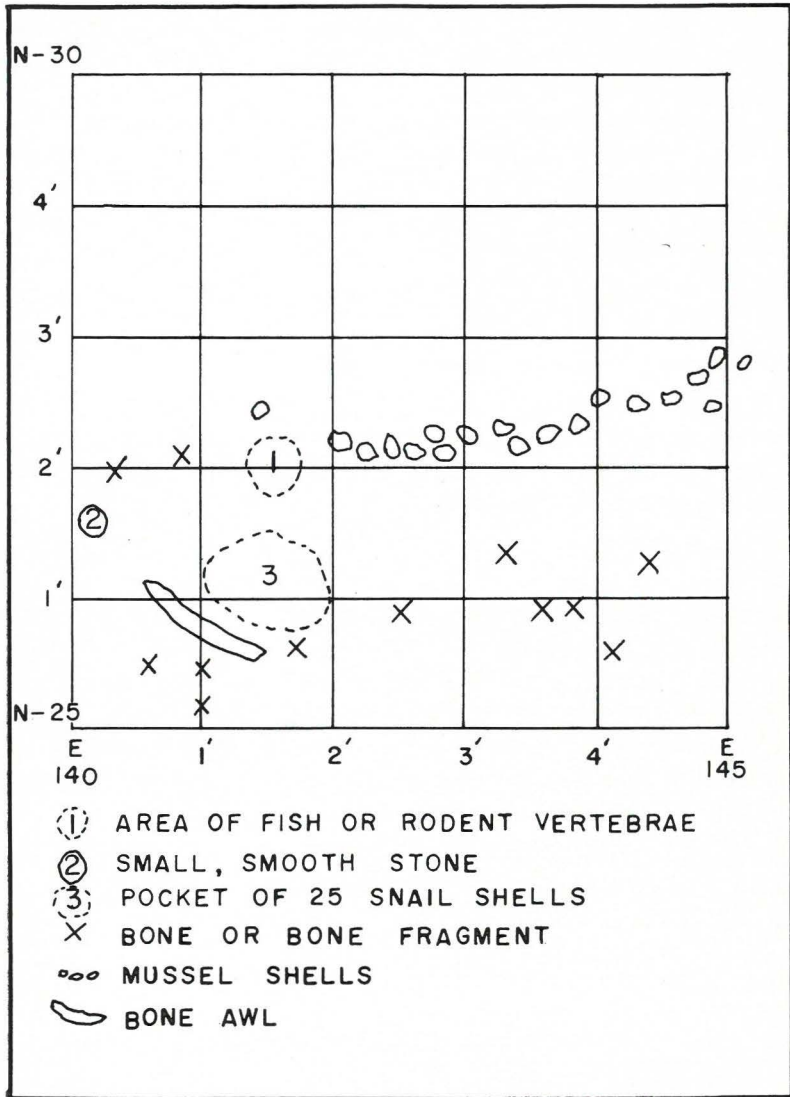


Fig. 6. Concentration of refuse in Square N25, E145.

ARROW POINTS

A total of 24 flint arrow points was found. Seven of these were too fragmentary for identification, although two blade sections had sharply serrated edges. The remaining 17 points were classified as follows:

Unidentified (Fig. 7, M, N). Two points are considered to fall outside the limits of known types. One, Fig. 7, N, is a small point with a thin, square stem. It measures 2.5 cm. long and .8 cm. wide. The stem may be broken, in which case this point is probably the *Perdiz* type; if unbroken, it may be the *Alba* type. The second point (Fig. 7, M) is asymmetrical and has been worked only along the edges. The stem is pointed, very small and off-center. It also suggests the *Perdiz* outline. It measures 2.2 cm. long (incomplete) and 1 cm. wide.

Perdiz (Fig. 7, I-L). This group is represented by six points, all of which are characterized by contracting stems and thin, barbed blades. Average length is 3.4 cm.; average width is 1.5 cm.

Cliffton (Fig. 7, G, H). Two points have been placed in this group. One (Fig. 7, H) is a typical *Cliffton* point, but the other (Fig. 7, G) is somewhat questionable and may be a variant of *Perdiz*. Average length is 3.5 cm.; average width is 2.3 cm.

Alba (Fig. 7, O-P). The two points of this type are characterized by parallel-sided stems and strong shoulders. They average 3.3 cm. long and 1.8 cm. wide. Both are somewhat similar to—and may be a variant of—the *Scallorn* type. Dee Ann Suhm and Edward B. Jelks (personal communication) consider these points to fit the *Eddy* classification better than the *Alba* type. On the other hand, the bulbous or slightly expanded stems ascribed to *Eddy* points by Suhm (1957: 228) are not evident. The *Eddy* point, according to Suhm, belongs largely to the Central Texas Aspect, to both the Austin and Toyah foci.

Scallorn (Fig. 7, Q-T). The five points in this group all have the expanded stem, straight base, corner notches, and prominent shoulders typical of this type. They average 3 cm. in length and 1.5 cm. in width.

According to Suhm (1960: 83) and Jelks (1962: 84-85), the Toyah Focus is characterized by the *Perdiz* and *Cliffton* arrow point types, while the *Scallorn* arrow point type is the major diagnostic of the Austin Focus. Suhm, as noted above, has further suggested that *Eddy* may be a transitional type.

DART POINT

Only one point (Fig. 7, F) identifiable as a dart point was found in the shelter. Critical portions of the stem and shoulders are missing so that classification is questionable. It has, however, tentatively been identified as *Uvalde*. This fairly crude point was found in the test hole

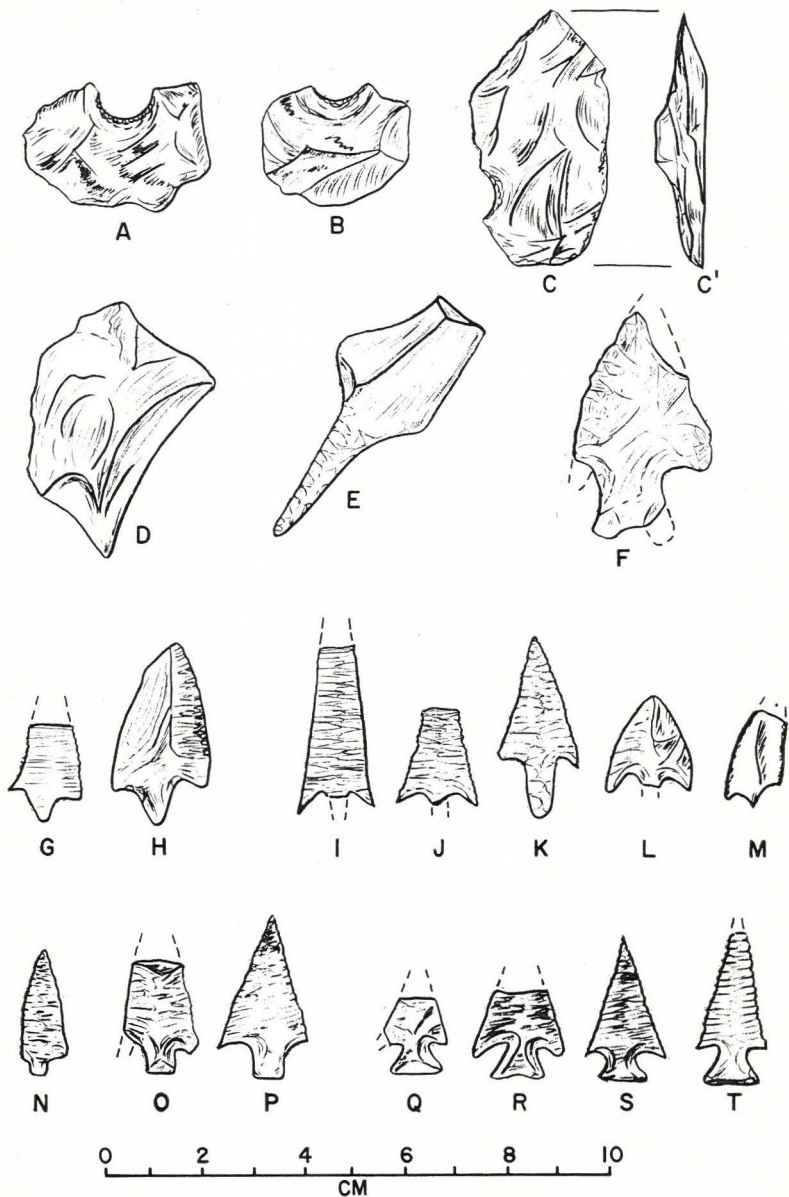


Fig. 7. Points, Spokeshaves, Utilized Flake, Drill, and Gouge. A, B, Spokeshaves. C, C', Gouge-Spokeshave. D, Utilized flake. E, Drill. F, Dart point (*Uvalde?*). G, H, *Cliffton* points. I-L, *Perdiz* points. M, Unidentified points (possibly *Perdiz*). N, Unidentified point (possibly *Alba*). O, P, *Alba* points (or possibly *Eddy* points). Q-T, *Scallorn* points.

dug just prior to excavation. It measures 7.5 cm. in length and 2.7 cm. in width.

TABLE 1
Artifacts from the Boy Scout Shelter

<i>Artifact</i>	<i>Number found</i>	<i>Artifact</i>	<i>Number found</i>
Arrow points		Knives, identified	22
Fragmentary	7	Knives, fragments	17
Unidentified	2	Scrapers	2
<i>Perdiz*</i>	6	Gouges	3
<i>Clifton</i>	2	Choppers	6
<i>Alba (or Eddy?)</i>	2	Hammerstones	3
<i>Scallorn</i>	5	Grinding Stones	1
Dart point, <i>Uvalde?</i>	1	Worked flakes, knives	5
Drill	1	Utilized flake	37
Spokeshaves	2	Worked flint, miscellaneous	12
Graver	1	Burins, definite and probable	10
Saw	1	Bone awls	2
		Worked? mussel shells	2
		Total	152

* Projectile point types follow those described in Suhm, Krieger, and Jelks (1954).

DRILL

Only one drill (Fig. 7, E) was found. It is a relatively small flake drill. The stem is about 3 cm. long and .8 cm. wide. The base is unworked and still contains much of the cortex of the original nodule. Over-all length is 5.5 cm.

This drill corresponds to those previously described for the Central Texas Aspect (Miller and Jelks, 1952; Suhm, 1959). It differs from the usual Edwards Plateau Aspect drill in that it is smaller and does not have a shaped base.

SPOKESHAVES

Two spokeshaves (Fig. 7, A, B) were found. They are small flakes, unworked except for a semicircular notch in one edge. The notches are uniformly 1.2 cm. wide; one is 1.2 cm. deep, the other about .6 cm. deep. A small snub-nosed gouge (Fig. 7, C, C') also contains a spokeshave notch on one side. It is very similar to those described above. All appear to have been ideally suited for the smoothing of arrow shafts.

GRAVER

One very small (2 cm. long and .8 cm. wide) fragment of flint with a needle-like point lightly worked along one edge is classified as a graving tool.

SAW

A rectangular flake is identified as a saw because of a series of seven serrations which form a saw-toothed edge at one end (Fig. 8, J, J'). It measures 4.2 cm. in length and 2.5 cm. in width.

KNIVES

The knives from this site, with only two exceptions, can be divided into four main groups as follows:

Form I (Fig. 8, A). Represented by seven artifacts, this form is similar to *Young* arrow points. It is characterized by a rather small blade and a rounded base. The average length is 3.8 cm., the average width is 2.4 cm.

Form II (Fig. 8, B) is represented by three specimens. These are similar to Form I except that the bases are straight or only slightly convex. They are generally a little larger and thicker than *Fresno* points. Average length is 3.8 cm., while the average width is 2.4 cm.

The particular specimen (Fig. 8, B) illustrating this group is especially interesting. This knife was found broken in two pieces. The fragments were found at approximately the same depths but about five feet apart, in adjoining squares. Both pieces must necessarily be of the same age and both were found in similar surroundings, yet, one section was completely patinated and the other was essentially free of any surface alteration. This provides a striking example of the unreliability of patina as an indicator of age.

Form III (Fig. 8, C) includes seven specimens which have the same general shape as Form I. However, all of these knives are slightly larger and considerably heavier. The lengths average 4.5 cm., the widths 3 cm.

Form IV (Fig. 8, D) is represented by three knives. Specimens in this group have much the same shapes as Form III knives, but they are larger and heavier. With an average length of 4.8 cm. and an average width of 3 cm., they probably fall into the general range of *Abasolo* dart points.

Besides these forms there are 17 unidentifiable fragments, and two blades which do not fit the above classification. The first of these unclassified blades (Fig. 8, E) is lanceolate in shape and rather wide for its length. The blade is formed from a curved flake and is unworked on

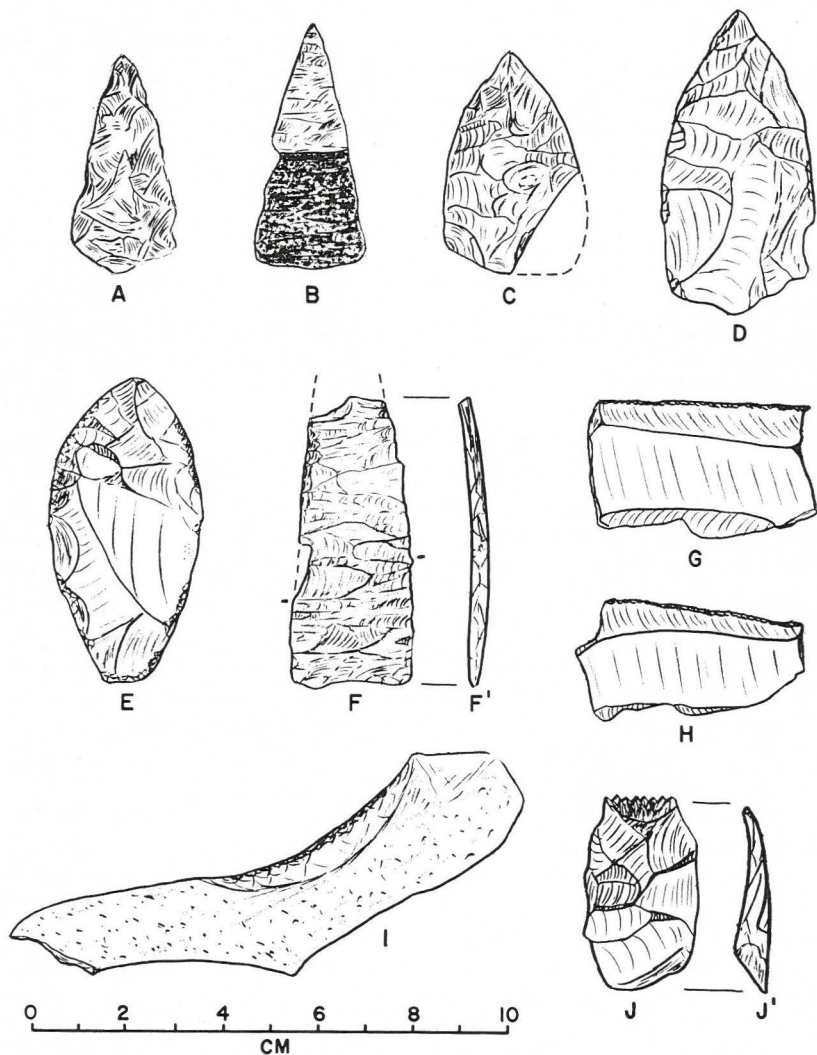


Fig. 8. Cutting and Scraping Tools. A, Knife Form I. B, Knife Form II. C, Knife Form III. D, Knife Form IV. E-F', Miscellaneous knives. G, H, Flake knives. I, Scraper. J-J', Saw. Dashes along edges of F indicate the extent of basal smoothing.

one face, except for small sharpening flakes around the edges and thinning of the bulb of percussion at the distal end. The other side shows percussion flaking over the entire face. This specimen is 6.5 cm. long and 3.1 cm. wide. The second unclassified knife (Fig. 8, F, F') is a long, slightly curved blade which is flaked on both sides. The edges near the base are ground smooth. The base is straight and also appears to have been smoothed. Workmanship is fairly crude, although the blade is thin (maximum thickness .4 cm.).

Six of the knives have part of the original striking platform, or cortex, on the base (all forms represented); and two others have cortex on portions of one or both faces.

SCRAPERS

Only two scrapers, both characterized by unifacial flaking, were found at the Scout Shelter. The first of these (Fig. 9, J) is a cortex flake worked only along one edge. This scraper has one feature not common to central Texas forms: one slightly convex edge has a small, rounded projection about 1.6 cm. wide at the base and about .6 cm. in length. At present no published reference to this peculiarity has been found. However, J. W. Greer has found this type at sites on the Llano River in Llano County, where it was associated with dart point fragments (*Nolan, Travis, and Marshall*) and one *Scallorn* arrow point.

The second scraper (Fig. 8, I) is made from a narrow and thick cortex flake. One edge is worked into a slight concavity. This scraper measures 11.3 cm. long, 2.7 cm. wide, and 1.7 cm. thick.

GOUGES

Three biconvex gouges with chisel-like edges were found. One (Fig. 9, G, G') is rectangular (6.3 cm. long and 3.5 cm. wide) with rounded, oppositely beveled ends. Another (Fig. 9, H, H') is circular, but has a straight scraping edge. It measures 4.5 cm. by 4 cm. The third (Fig. 7, C, C') is a "snub-nose" gouge and has one circular and one pointed scraping edge. It is 5 cm. long and 2.5 cm. wide. This latter specimen also has a small (1 cm. by .5 cm.) spokeshave notch worked into one edge.

CHOPPERS

Six bifacially worked nodules were found, each having one edge that was probably used for cutting or chopping. These are relatively small compared with those found in central Texas burned rock middens.

All have portions of the cortex still present. The average diameter is 5.5 cm.

HAMMERSTONES

Three hammerstones were found. Two of these are simply small flint nodules about 7 cm. in diameter. The third, also of flint is probably half of a small core which has been greatly worn by weathering or stream action. It measures 6 cm. long, 4 cm. wide, and 3 cm. thick. This piece was later possibly used as a burin (see L-41 under burins).

GRINDING STONES

There was only one identifiable mano fragment found during the excavation. This is of fine-grained sandstone, ground smooth over one face and along its edges. The fragment is too small, however, to show distinct grinding facets.

Other stones possibly used as manos include three broken quartz pebbles and a smooth, hard limestone pebble. These stones all show smooth areas, but actual grinding surfaces cannot be identified.

FLAKE KNIVES

This group is composed of five thin flakes unifacially worked along one edge, as if to sharpen or strengthen the cutting edges. Two such knives are illustrated in Figure 8 (G, H). The remaining three artifacts have cortex covering the unworked edges. While some of these flakes could have been used as scrapers, their sizes (1.2 to 5 cm. in width, 2 cm. in length, and 3 cm. in thickness) suggest use as small cutting implements.

UTILIZED FLAKES

Thirty-seven flakes were found which fit into this category. Thirty-six of these have slight marginal flaking, but are otherwise unaltered. This flaking differs from that of the flake knives in that the knives appear to have been intentionally flaked while these seem to be simply random use scars. Most of these are fairly thick (.3 to .8 cm.) cortex flakes ranging from 4 to 8 cm. in length. They would have been useful for small cutting or scraping operations.

Another utilized flake seems to have been designed for use as a drill. It has been crudely fashioned by removing two chips from a flake in order to prepare a pointed blade about 1 cm. long. Very small scars, apparently from use, appear on alternate edges of the shaft. Work-

manship does not compare with the drill described earlier and the piece was therefore assigned to the utilized flake classification.

WORKED FLINT

Twelve additional pieces of worked flint of unknown use were recovered. These could have been included in the utilized flake group except that they are too thick to be generally classified as flakes. They probably were used for a variety of cutting, scraping, and chopping tasks.

BURINS

Ten specimens were found indicating the burin technique. Seven of these were examined and reported on by J. F. Epstein, archeologist for the Department of Anthropology, The University of Texas (see below). In summary, Dr. Epstein identified one single spall burin, one double spall burin, and one secondary spall; also three possible burins and one possible secondary spall. Specifically he states:

Specimen TV69/L-10 (Fig. 9, C). A single stroke burin made from the lower portion of a crude lamellar flake having a prepared, but unfaceted striking platform. The lower portion of the flake (opposite the bulbar end) had apparently been used as a scraper, and shows use scars, but no intentional unifacial flaking. A single burin spall had been removed from this end. The burin shows considerable wear at its tip, on the burin facet. The scraping edge, which intersects the plane of the burin facet, does not, however, show use in the immediate area of the burin point.

Specimen TV69/L-1 (Fig. 9, F). This is a broken, bifacially worked artifact, probably a knife. The artifact broke across its width. The break surface was used as a striking platform to remove two burin spalls, one from each edge of the piece. One spall was about 2 cm. long. The spall removed from the other edge had a length of 4 mm. This edge shows multiple battering, in an attempt to remove a spall. Obviously the attempt failed. Since the edge on which the long spall had been removed seems to be poorly suited for a burin point, and besides no wear is indicated, it would seem that the burin technique had been used here to obtain a burin spall for possible use, rather than to make a burin out of a broken blade.

Specimen TV69/L-13 (Fig. 9, D). This is an excellent example of a secondary burin spall. (Secondary spalls are the product of resharpening a burin.) It does not appear to have been used. Length 2.5 cm.

Specimen TV69/L-9. This may be a very large secondary burin spall. If it is not, then it is an exceptionally thick flake that comes from a narrow core with a prepared (unfaceted?) striking platform. This core, if it was such, had a width of about 1.5 cm., and the flake was removed from its end, rather than by working around it as in the production of a polyhedral core.

Specimen TV69/L-1. This piece is probably a burin, but it is difficult to be certain. The specimen is an initial cortex flake that had broken. This break surface was used to remove one, or possibly more very short spalls between 4 and 6 mm. in length. The point formed shows no indications of use, but the flint is a poor grade, and would not show wear clearly anyway.

Specimen TV69/11. This is a specimen of mottled pinkish flint, and a fragment of cortex is still retained on one flat surface. One convex edge has been converted to a scraper. This piece has a sharp point produced by two unworked edges that meet each other at a right angle. It is impossible for me to determine how these edges and point were produced. They are flat enough to resemble burin facets, but there is no negative bulb of percussion visible at the point. No wear is visible at the point either. This effect can be produced by simply stepping on a piece of flint.

Specimen TV69/L-6. This is a flake which shows just a small section of cortex. It has a sort of mottled purplish color. One edge is rather wide, and relatively flat, and appears to have been produced by removing a large spall from the flake. This wide flat edge was then used as a striking platform to remove a short spall down along the other edge. In other words this seems to be an angle burin or a *burin bec de flute*. The tip formed by these two burin strokes has broken along one side. This piece shows what seems to be fine wear facets. I know of no other way of explaining the technique used (which I view as intentional) to produce the point.

General Comment. There is no question that the burin technique and burins appear at this site. Since the site apparently contains only Central Texas Aspect material, it is of special importance. At present, I have no positive evidence that the burin technique continued past the Archaic period, and into more recent times. If the data from this shelter can prove without question that the entire occupation is Central Texas Aspect, then we will know that burins persisted into very recent times here in Texas. In terms of our present conception or misconception, this would be rather extraordinary.

After receiving this report all remaining likely artifacts and flint chips were re-examined and three additional possible burins were found. These are:

Specimen L-21. This appears to be a small core (4.5 cm. in diameter) with a small beak-like projection which has a triangular cross section. On a flat side of this beak a flake has been removed, evidently to sharpen the edge. Use marks are visible over most of the edge.

Specimen L-41. This is kept from a listing as definite only because use marks are not visible. It is made from a piece of worn or weathered flint which may originally have been a hammerstone. One flake, 1.3 cm. long and 1 cm. wide, was removed from the edge opposite the hammered end, thus forming a striking platform for the second flake (1.8 cm. long and .5 cm. wide).

Specimen L-44 (Fig. 9, E). This is a secondary burin spall which

measures 4 cm. long and 1.6 cm. wide and from which at least two spalls had previously been removed. The spall shows considerable wear at the tip; two extremely narrow scars (.7 cm. long), which may have been produced by use, are evident.

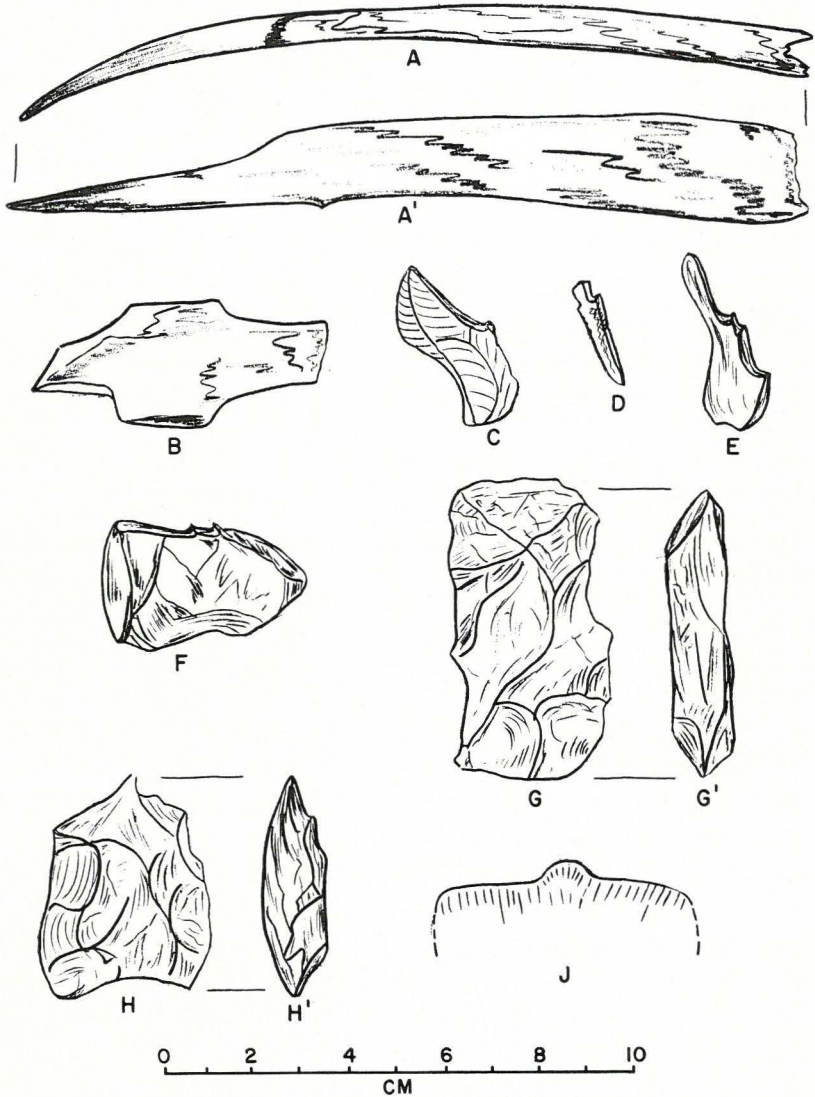


Fig. 9. Worked Bone, Burins, Gouges, and Scraper. A, B, Bone awls. C, Single spall burin. D, E, Secondary burin spalls. F, Knife? fragment showing burin technique. G-H', Bifacial gouges. J, Scraper.

PIGMENT

Two small fragments of white chalk were found in the main occupation area. These possibly were utilized as a source of white paint although there was no direct evidence of such use, and they are not entered in Table 1.

WORKED SHELL

Two mussel shells are classified as possible artifacts. The first of these is a small rectangle (3.3 cm. \times 3.1 cm.) of shell which appears to have been intentionally shaped. The edges, however, have not been smoothed and some doubt is thereby cast on its origin. The second shell, 4 cm. in diameter, is complete, except for a hole (1 cm. in diameter) near the hinge of the shell. A. T. Jackson (1938) has suggested that such holes served for hafting, or for stringing and use as rattles. Fundaburk and Foreman (1957) have suggested that similarly drilled shells were used as spoons in the southeastern United States.

BONE TOOLS

Bone tools are represented by two, possibly three, awls. The first of these (Fig. 9, A, A') is a 21.7 cm. long section of bison rib with a pointed and smoothed distal end. The proximal (articular) portion of this bone has been removed, but otherwise unmodified. The second (Fig. 9, B) is a pointed fragment, 6.5 cm. long, of bone (bison?). This piece has been smoothed over most of its surface, but whether this is a worked or weathered surface cannot be determined. The third specimen is a very small, pointed fragment of bone. The point may have been fashioned intentionally or may simply be fortuitous—the size and condition of the fragment make it impossible to tell.

HISTORIC ITEMS

As would be expected in a camping area, a number of historic items were found during the excavation. These include a scattering of 22 cartridge cases (7), nails (3), glass fragments (about 25), bone buttons (2), rusty metal fragments (2), and a musket ball. This last item is an almost perfect sphere of lead, having only one small round, flat spot, presumably where the sprue material was cut off after molding. The ball measures 0.535–0.528 inches in diameter and weighs 14.57 grams. Because of its nearly perfect sphericity and almost unmarred surface it is obvious that the ball has never been fired. None of the

historic items can be linked with the Indian occupation (they are not listed in Table 1).

REFUSE

Occupational refuse was found throughout the excavation. This includes flint flakes, cores, chunks of flint (bluish-black), flint pebbles, burned limestone fragments, ash, and lumps of baked earth. Mussel and snail shells were abundant, especially in the lower layers of the shelter fill.

Many animal bone fragments were also found, especially toward the front of the shelter. Several of these contained scratches or cuts probably produced by removing flesh from the bones. Animals represented include bison, deer, birds, small mammals, fish, turtles, and snakes. Judging by the number of bones found, deer seems to have been the favored food.

CONCLUSIONS

This excavation was undertaken principally to give the Travis County Archeological Society members an opportunity to practice archeological field work. Much of the excavation was carried out under the supervision of professional archeologists, and all of it was done with a sincere effort by the members to do a real workman-like job.

The excavation ran its course routinely to disclose what appears to be a pure Central Texas Aspect site. An element of more than usual interest was introduced, however, with Dr. Epstein's identification of burins and burin spalls. This site provides apparently the first evidence that the burin technique was in use up to relatively recent times.

Three questions bear heavily on the evidence of the burin finds: first, is the site affiliated with the Central Texas Aspect? Second, is there any evidence of an earlier occupation? Third, can the burin material be intrusive? Considering the questions in the order given: (1) The identification of the Central Texas Aspect appears to be sound. The artifacts closely follow the trait list given in *An Introductory Handbook of Texas Archeology* (Suhm *et al.*, 1954). More significant, perhaps, authorities such as Suhm, Jelks, and Davis agree with this identification. (2) There is no evidence considered as indicating occupation earlier than the Central Texas Aspect. Approximately 85% of the area available for occupation was excavated to sterile caliche or bedrock. This area included almost all of the shelter suitable for occupation. In this area only one dart point was found. This point is too

incomplete for positive identification, but it is tentatively classified as the *Uvalde* type. Dart points are not considered to be a basic trait of the Central Texas Aspect; however, they are not uncommon in these sites. Jelks (1953), for example, reports 148 arrow points and 16 dart points in the Blum Shelter, and yet identifies the site with the Central Texas Aspect.

There remains the third question: whether the burins could be intrusive. This, of course, cannot be answered with absolute certainty. Some strong likelihoods, however, can be indicated. In the first place, the burin material was all found in the surface to 18 inch zone, with most examples coming from six to 12 inches below the surface. This corresponds to the depth of most of the other artifacts. Also, it seems unlikely that all of the burins (10 specimens) would be intrusive. Certainly no modern campers brought these items to the shelter, for to an untrained eye they appear to be just flint flakes. They are not the stuff that intrigues the casual amateur collector.

It is unfortunate that burins have not previously been observed in association with arrow points, or other known Central Texas Aspect material. In view of the other considerations, however, it is believed that the use of the burin technique has been demonstrated to have existed in the Central Texas Aspect. The results of this excavation suggest that a re-examination of flint flakes, etc., from known Central Texas Aspect sites might be profitable. Possibly the use of burins in relatively recent times could thereby be confirmed.

The relatively small number of artifacts recovered (140 specimens) makes it difficult to assign this site to a particular focus within the Central Texas Aspect. The presence of the *Perdiz* and *Clifton* arrow point types, as well as the bone awls, suggest the Toyah Focus. On the other hand, the presence of *Scallorn* arrow points and the absence of pottery indicate the Austin Focus. Since the artifacts were found without stratification, the site may indicate neither Austin nor Toyah, but an intermediate culture. In any event the occupation appears to fall within the Central Texas Aspect and, judging by the absence of trade goods, before historic times.

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Austin, Texas

Test Excavations at the Youngsport Site: A Stratified Terrace Site in Bell County, Texas*

HARRY J. SHAFER

ABSTRACT

Limited test excavations made between 1960 and 1962 at the Youngsport Site in Bell County, Texas have revealed, in part, a previously unreported Archaic dart point sequence for the central part of the state. The objects recovered, primarily chipped stone tools, are briefly described and a new dart point type, termed *Gower*, is provisionally defined.

INTRODUCTION

Between 1960 and 1962 the author and Tom Gibson undertook test excavations at the Youngsport Site in Bell County, Texas. The archeological potential of the site was apparent in the large number and diverse types of dart points which had been collected from the surface. Even more importantly, a number of stratified occupational zones have been exposed in an erosional ditch which has cut through portions of the site (Fig. 1). Although the excavations were quite limited—they were restricted to weekends and holidays—the new stratigraphic data obtained seem to justify a brief report. It must be made clear, however, that this paper is offered only as a preliminary progress report.

PREVIOUS WORK IN THE AREA

To date, the only archeological investigation in the immediate vicinity consists of a preliminary survey of the proposed Stillhouse Hollow Reservoir area on the Lampasas River in the southern part of Bell County (Johnson, 1962). This survey, conducted by the Texas Archeo-

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logical Salvage Project of The University of Texas, was completed in the spring of 1962.

Other work in the surrounding area includes testing in Belton Reservoir sites to the north (Miller and Jelks, 1952), as well as excavations at several similar sites in Travis County to the south (Kelly, 1961; Suhm, 1955), and the Buchanan Lake sites to the west (Jackson, 1938).

SITE LOCATION

The Youngsport Site is situated in the southwestern corner of Bell County, well into the eastern limits of the central Texas hill country (Fig. 1, C). The site lies buried in the second terrace of a spring-fed creek, a few hundred yards above the creek's confluence with the Lampasas River (Fig. 1, A).

SITE DESCRIPTION

Occupational debris in the bank and in the cultivated fields shows that the site extends along the north bank of the creek for some three hundred yards (Fig. 1, A). An erosional gully, about 50 feet long, 20 to 25 feet wide, and 16 to 20 feet deep, has cut into the approximate center of the site and exposed stratified occupational zones. These zones extend to a depth of at least eight feet below the surface.

NATURAL SETTING

The western part of Bell County borders the eastern edge of the Edwards Plateau, known locally as the Texas hill country. It consists of rolling limestone hills covered principally with juniper ("cedar") and live oak. Ranching constitutes the chief industry; the little farming practiced in this vicinity is restricted to the river bottom lands or to terraces near the river.

The principal fauna of the area includes the armadillo, cottontail and jack rabbits, skunk, opossum, ringtail cat, raccoon, white tail deer, and fox. Major flora consists of juniper and oak in the uplands and pecan, willow, bur oak, sycamore, and cottonwood along the streams.

EXCAVATION

An extensive excavation was not feasible and the work was limited to small scale testing of the strata exposed in the ditch and along the creek bank (Fig. 1, B). This approach proved worthwhile since a number of artifacts were obtained from each of the strata observed (Fig.

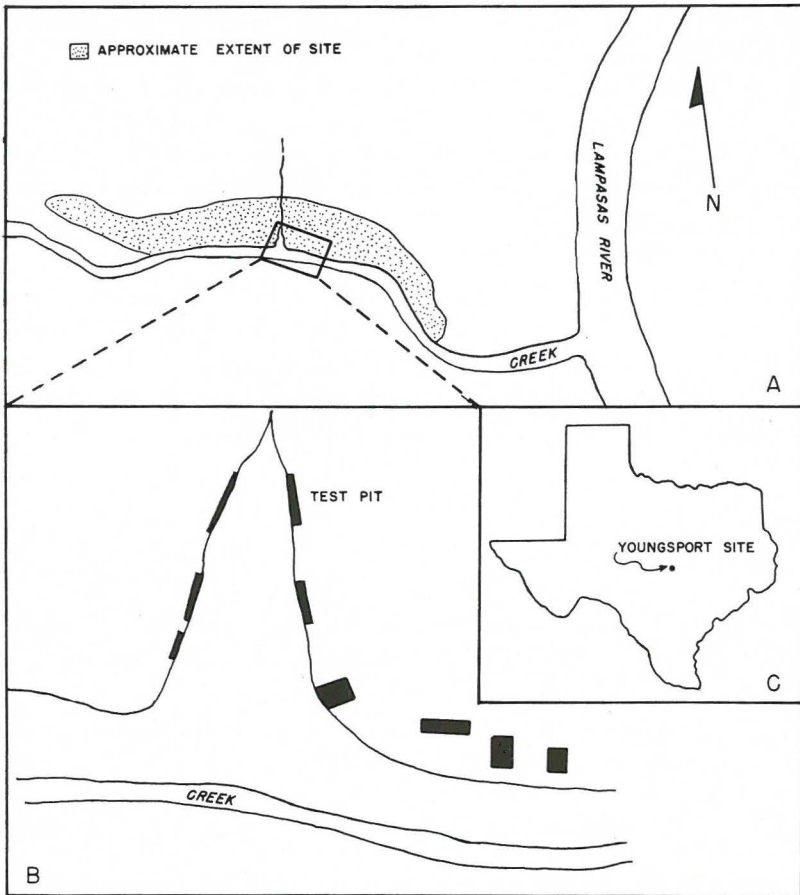


Fig. 1. Youngsport Site. A, Site setting. B, Location of test pits. C, General site location. Not to scale.

2 and Table 1). Great care was taken to locate artifacts *in situ*, and those found on the surface are not—with one exception—included in this report. On the other hand, this method of testing made it impossible to recognize possible differences in the horizontal distribution of the projectile points within the respective zones, and it did not yield information on the transition—if it existed—between the zones.

STRATIGRAPHY

A number of superimposed zones, most of which contained cultural

debris, were exposed in the erosional ditch which had cut into the site (Figs. 1 and 2). The nine strata recognized in this exposure are as follows (they are designated from top to bottom because of the preliminary nature of the excavations):

Stratum 1 was the plow zone which consisted of a black gumbo soil intermixed with some cultural debris. This layer had been considerably disturbed by cultivation. In the areas tested, it was thin or absent and none of the artifacts described herein can be attributed to it. In other parts of the site, however, *Stratum 1* reached a maximum thickness of 18 inches.

Stratum 2 was a black compact soil mixed with a few burned rock fragments (most of which were small), flint chips, bone scrap, snail and mussel shells, and artifacts—principally *Ensor* and *Montell* points—attributed to a late Edwards Plateau Aspect occupation.

Stratum 3A was a small lens of ashy black soil mixed with cultural debris. It averaged about six inches in thickness. The amount of refuse nonetheless was considerably more numerous than in *Stratum 2*. *Stratum 3A* contained a larger number of snail and mussel shells, flint chips, burned rocks, bone fragments, and artifacts of the Edward Plateau Aspect, especially *Marshall* points.

Stratum 3B, the most concentrated occupational layer, consisted of a gray soil mixed with burned rock, snail and mussel shells, bone fragments, flint chips, and artifacts of the Edwards Plateau Aspect. *Pedernales* was the major dart point type recovered from this stratum.

Stratum 4 was a yellowish clay mixed with cultural debris and artifacts of the Edwards Plateau Aspect. Although moderately rich, this zone was, in places, rather thin.

Stratum 5 was a relatively sterile yellow clay which showed signs of occupation only in the upper and lower fringes. Only one artifact (a *Bulverde* point) was found in the upper part of this zone. This suggests that the little cultural material in *Stratum 5* is intrusive, having worked in from above and from below.

Stratum 6 was a yellow clay containing cultural refuse and artifacts of an early Archaic period not usually included in the Edwards Plateau Aspect. Snail shells were particularly abundant in *Stratum 6*.

Stratum 7 was a culturally sterile zone of yellow clay.

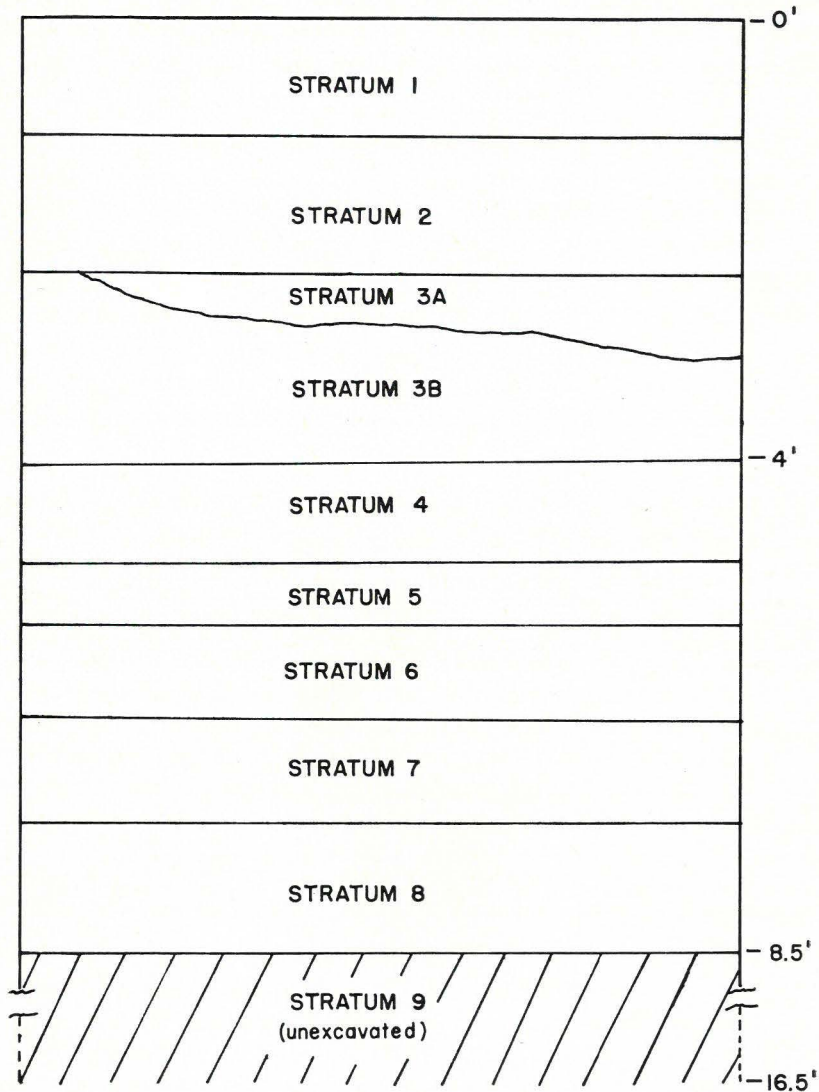


Fig. 2. Generalized profile of the stratigraphic zones exposed in west wall of the erosional ditch.

Stratum 8 was a yellow clay mixed with cultural debris and artifacts of an early, undefined Archaic complex. Snail shells were numerous in this layer, but many of them were fragmentary.

Stratum 9 was a sterile yellow clay which showed no evidence of occupation in that portion exposed in the ditch. It extended to at least 16.5 feet below the surface. No testing was carried out in this zone.

DESCRIPTION OF THE ARTIFACTS

PROJECTILE POINTS

Of the 176 artifacts recovered from the excavations, 129 can be classified as projectile points; more specifically as dart points. No arrow points have yet been found at the site. By referring to *An Introductory Handbook of Texas Archeology* (Suhm, *et al.*, 1954), 103 of the dart points have been identified as to type. The types recognized, a provisional new type (*Gower*), and the unidentified points are described below.

Bulverde (Fig. 5, A-E). Five specimens are classified as *Bulverde*. Four of these occurred in *Stratum 4* and one in the upper portion of *Stratum 5*. All seem to fall within Johnson's Variety 2 *Bulverde* points (Johnson, *et al.*, 1962: 19-20). Since they occur with *Nolan* and *Travis*, it is possible that this long and narrow stem variety is earlier than the wider and shorter stemmed forms (Johnson's Variety 1). If so, the latter would be expected to occur mainly with *Pedernales* points, the former (Variety 2) with *Nolan* and *Travis* types.

One of the *Bulverde* points (Fig. 5, A) from Youngsport has been made into a burin. The two complete *Bulverde* points are 8.3 and 6.1 cm. long, 3.2 and 2.8 cm. across the shoulders, 1.5 and 1.6 cm. across the base of the stem, and .8 and .7 cm. thick, respectively.

Castroville (Fig. 3, I-K). A total of ten *Castroville* points were recovered from the site, nine from *Stratum 3B* and one from *Stratum 2*. Found mainly with *Pedernales* and *Marshall* points, they are characterized by broad expanded stems and pronouncedly barbed shoulders. One *Castroville* point (Fig. 3, J) shows considerable reworking, as the end of the blade has been refashioned, perhaps to serve as a knife, and one shoulder has been rechipped to make a burin.

The more complete *Castroville* points are between 6.1 and 6.2 cm. long, 2.7 and 3.9 cm. across the shoulders, 2 and 2.3 cm. across the base of the stem, and .7 and .9 cm. in maximum thickness. The remainder were probably very similar in size.

Ensor (Fig. 3, E, F, H). This type is represented by seven specimens, all of which are from *Stratum 2*. They occurred principally with

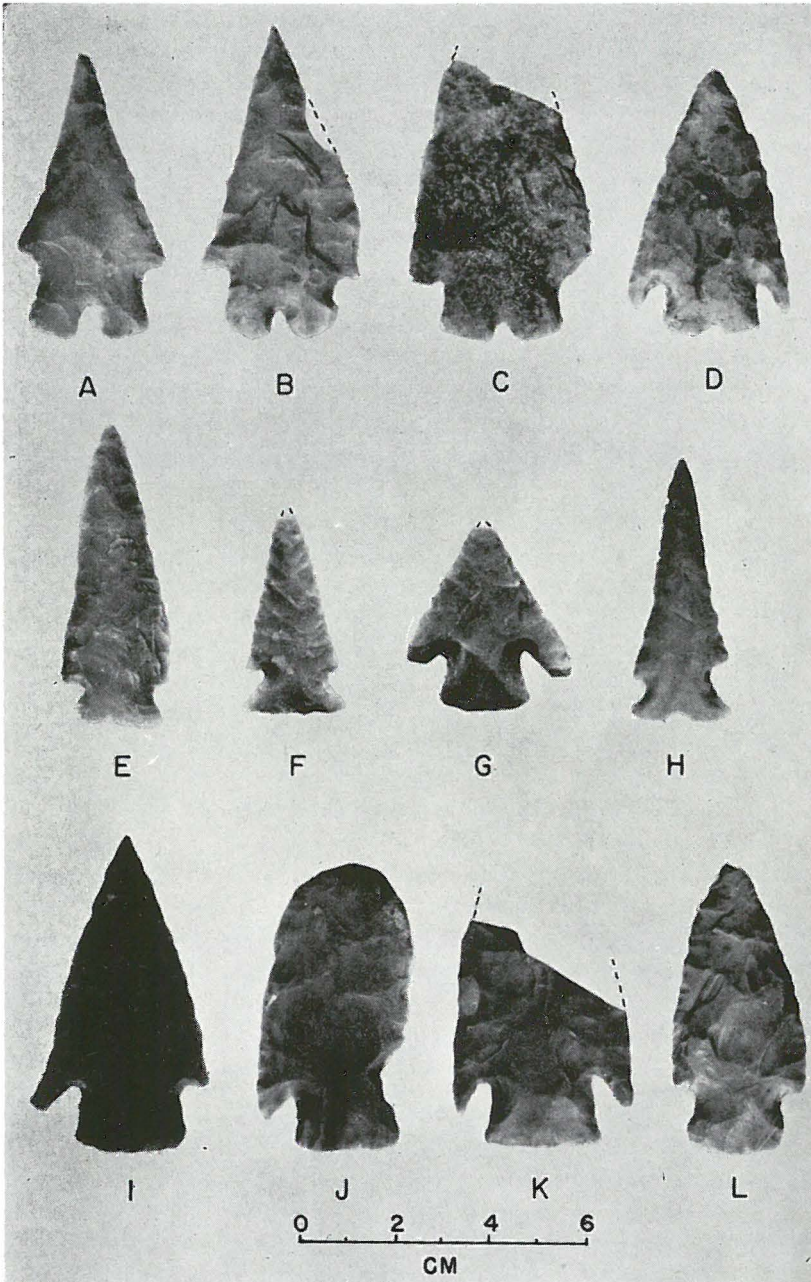


Fig. 3. Dart Points. A-D, Montell. E, F, H, Ensor. G, Marcos. I-K, Castroville. L, Williams.

Montell points. Two variations can be recognized, although both have the typical *Ensor* side or corner notches. The only difference is that one variety (which includes five specimens) has a straight base (Fig. 3, E, F), while the other (represented by two specimens) has a V-shaped notch in the base (Fig. 3, H). Both forms have previously been included in the *Ensor* type (Miller and Jelks, 1952; Johnson, *et al.*, 1962). There is considerable variation in the length of the *Ensor* points, with a range of 4 to 6.4 cm. The maximum widths are between 2 and 2.3 cm., and the maximum thickness between .5 and .8 cm.

Gower (Fig. 7, A-E). The name *Gower* is suggested for a group of crudely made, indented base points, all of which were found in Stratum 8. Represented by five specimens, these points have very short, parallel-edged stems, and markedly concave bases. The basal indentation of the *Gower points*—as well as those termed *Gower variants*—has been produced by the removal of a single (?) flake which left remnants of a scar around the edges of the basal concavity. This scar usually appears on only one side of the point, and is sometimes lightly retouched. The blade is generally short, has convex edges, and weak, rudimentary shoulders. The dimensions for the complete specimens are 3.4 to 3.9 cm. in length, 1.8 to 2.4 cm. in width, and .5 to .8 cm. in maximum thickness. The stems are 1 to 1.4 cm. long and about 1.6 cm. wide; the basal concavity varies from .3 to .6 cm. in depth.

The stratigraphic position of these points suggests that they are fairly early, although the workmanship and general style seem to indicate close affiliations with Archaic points. In many ways they look like very crude *Pedernales* points.

In addition to the above there are nine dart points which appear to be related to the *Gower* type, but which have certain morphological features setting them apart. For the present these specimens are described as variant *Gower* points, but it is possible that they will eventually be included as formal varieties of *Gower*, or set up as distinct types. All were also found in Stratum 8 and they include:

(1) Variant A (2 specimens). These points are larger than those described above but, with the exception of somewhat more pronounced shoulders, have very similar outlines (Fig. 7, F). The stem is short, has slightly convex lateral edges, and an indented base. The blade is roughly triangular in outline and has convex lateral edges which, because of the crude workmanship, are rather sinuous. The maximum width varies from 3.1 to 3.3 cm.; the stem is .9 to 1.2 cm. in length

and the maximum thickness is uniformly .7 cm. The total length of the one complete specimen is 5.2 cm.

(2) Variant B (1 specimen). This fragmentary point (Fig. 7, G) appears to be the basal portion of a lanceolate-shaped form. The base is only slightly indented and the workmanship is fair. The maximum width of the surviving portion of the blade is 2.4 cm., the maximum thickness is .6 cm., and the basal concavity is .2 cm. deep and 2.1 cm. across.

(3) Variant C (1 specimen). Although very crudely made, this fragment (not illustrated) closely resembles the other *Gower* points, especially Variant B. One lateral edge of the stem is straight, the other is convex. The blade is narrow and lacks distinct shoulders. The basal indentation is fairly pronounced, measuring .3 cm. deep. The stem is 1.9 cm. wide and 2 cm. long, while the blade has a maximum width of 2.1 cm. The estimated length is 7.5 cm.; it appears to be the longest point found in Stratum 8.

(4) Variant D (1 specimen). This very poorly made basal fragment (Fig. 7, K) is from a roughly leaf-shaped point. The indentation in the base is .5 cm. deep, the width across the base 2.3 cm., the maximum width of the blade 3 cm., and the thickness 1 cm.

(5) Variant E (1 specimen). One point (Fig. 7, H) resembles the *Pedernales* type, but a careful examination of its features, as well as its stratigraphic occurrence, indicates a closer relationship with the *Gower* points. The stem is roughly rectangular and the base is slightly indented. The workmanship is rather poor. The stem is 1.1 cm. long and 1.2 cm. wide; while the blade is 5 cm. long, 2.4 cm. wide, and .8 cm. thick.

(6) Variant F (3 specimens). Two of three points included in this variant (Fig. 7, I, J) have slightly expanding stems and rounded basal tips or ears. One of the expanded stem forms (Fig. 7, I) has a deeply concave base, smoothed stem edges, and slight, unbarbed shoulders. The second point (Fig. 7, J) is much like the above, except that it is somewhat smaller and more fragmentary. The third specimen (not illustrated) is similar to the *Pedernales* type, except that the lateral edges of the stem are well smoothed. The stem of this point is 1.2 cm. and 1.7 cm. wide; the basal indentation is .4 cm. in depth. The maximum blade width is 2.5 cm., the maximum thickness is .7 cm., and the total length is 5 cm.

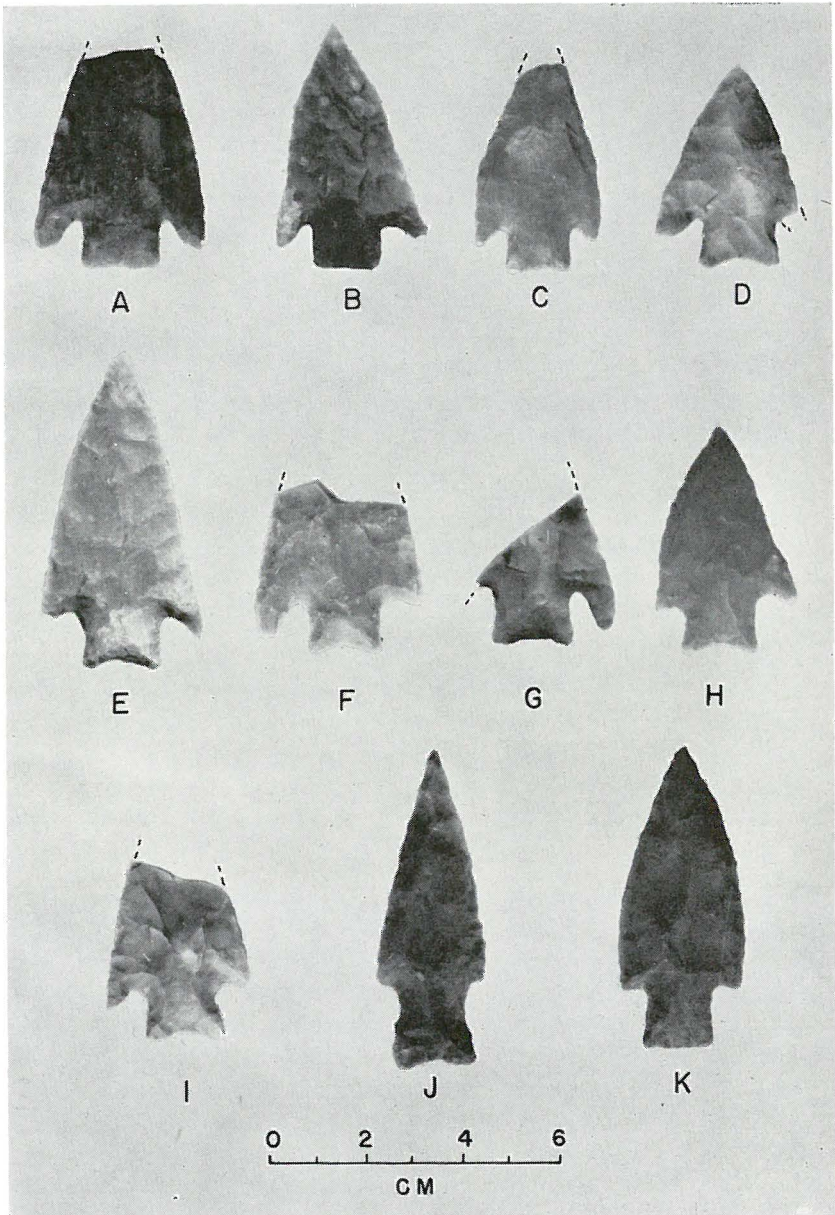


Fig. 4. Dart Points. A-I, Marshall. J, Uvalde. K, Lange.

Lange (Fig. 4, K). Two possible *Lange* points were found in Stratum 3B, along with *Pedernales*, *Castroville*, and *Marshall* points. Both have somewhat narrower stems than those illustrated by Suhm, Krieger, and Jelks (1954: Pl. 97), and consequently they are only tentatively assigned to this type. The one complete *Lange* point is 6.3 cm. long, 2.5 cm. wide across the shoulders, 1.5 cm. wide across the base of the stem, and .7 cm. thick.

Marcos (Fig. 3, G). Only one specimen, from Stratum 2, can be classified as a *Marcos* point. It was found with *Montell* and *Ensor* points, and could possibly be a variation of the latter type. It measures 4 cm. in length, 3.5 cm. across the shoulders, 2 cm. across the base of the stem, and .6 cm. in maximum thickness.

Marshall (Fig. 4, A-I). Fifteen *Marshall* points were found in the excavations, eight in Stratum 3A and seven in Stratum 3B. All those from Stratum 3A possess fine secondary chipping—sometimes producing fine serrations—along the blade edges, while only one of the *Marshall* points from Stratum 3B exhibits this feature. The base of each point is slightly concave, and all have pronouncedly barbed shoulders. These points are between 4.3 and 6.6 cm. in length, 2.6 to 4 cm. across the shoulders, 1.4 to 1.7 cm. across the base of the stem, and .5 to 1.3 cm. in maximum thickness.

Montell (Fig. 3, A-D). Fourteen *Montell* points were recovered from Stratum 2, where they were apparently associated with the *Ensor* and *Marcos* types. The complete specimens are between 5.5 and 6.6 cm. long, 3 and 4 cm. across the shoulders, 1.9 and 2.5 cm. across the base, and .5 and .7 cm. thick.

Morrill (Fig. 6, B). Only one *Morrill* point is recognized in the collection. It was obtained from Stratum 6, and appears to be closely associated with *Wells* points. This particular specimen is almost identical to one illustrated by Suhm, Krieger, and Jelks (1954: 107, S). It is 6.5 cm. long, 2.3 cm. in maximum width, and .9 cm. in thickness. The stem, which is 2.5 cm. long, is almost the same length as the blade. Interestingly, five of the six points from Stratum 6 (Fig. 6, A-D), including two *Wells* and the one *Morrill*, are characterized by long and slender, roughly rectangular stems.

Nolan (Fig. 6, H, I). The two *Nolan* points found at the site occurred in Stratum 4, along with *Travis* and *Bulverde* points. It is surprising, since it is a major point type to the south and west, that more *Nolan* points were not found at the Youngsport Site. The two

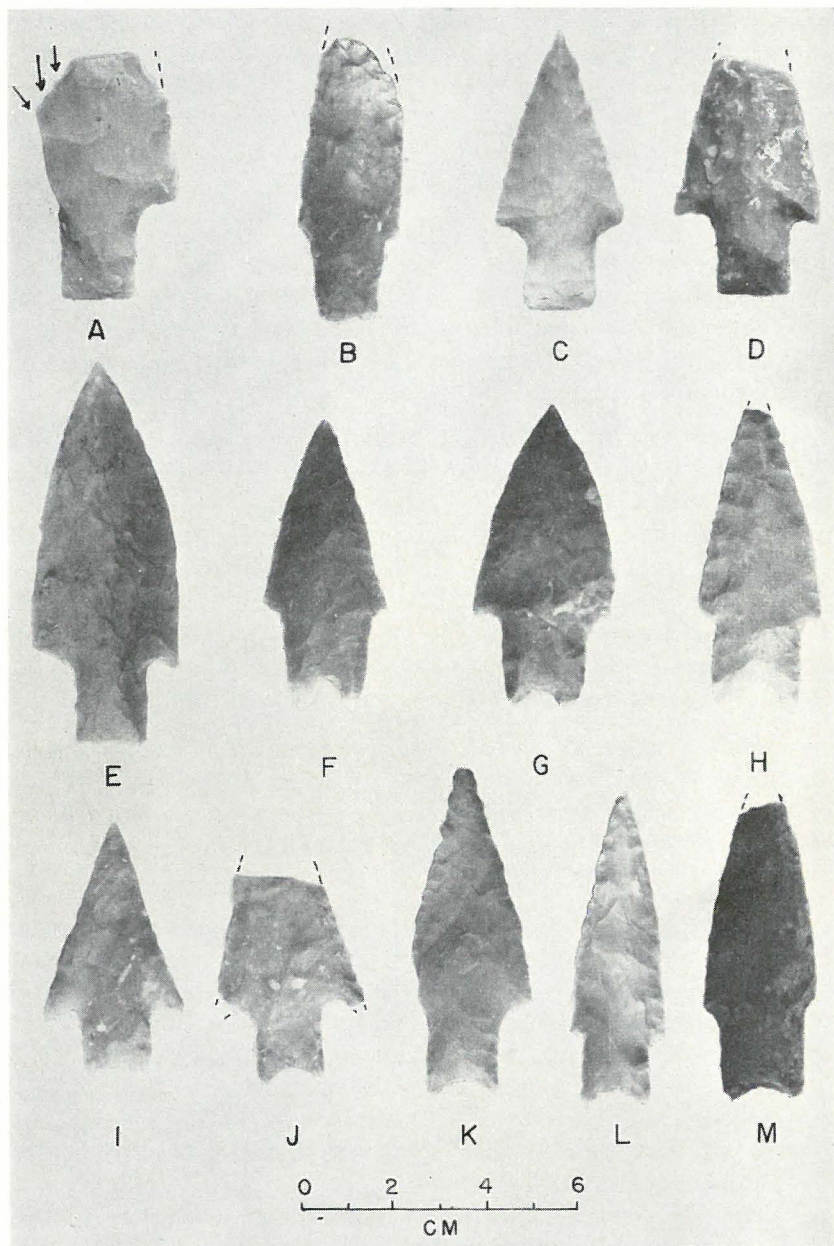


Fig. 5. Dart Points. A, *Bulverde* with burin (arrows show direction of blows). B-E, *Bulverde*. F-M, *Pedernales*.

recovered are between 3.1 and 2.3 cm. across the shoulders, and 1.8 and 1.6 cm. across the base of the stem, and .9 and .6 cm. thick, respectively. The one complete *Nolan* is 7.1 cm. long.

Pedernales (Fig. 5, F-M). Represented by 41 specimens, *Pedernales* is by far the most common type found at the site. All were obtained from Stratum 3B, which also yielded *Castroville*, *Lange*, *Marshall*, *Uvalde*, and *Williams* points. They are between 5.1 and 8.4 cm. in length, 2.1 and 3.2 cm. in width across the shoulders, and .6 and 1.1 cm. in maximum thickness.

Travis (Fig. 6, F). One *Travis* point was recovered from Stratum 4, along with *Bulverde* and *Nolan* points. It measures 5.6 cm. long, 2.5 cm. across the shoulders, 1.7 across the base of the stem, and .9 cm. in maximum thickness.

Uvalde (Fig. 4, J). One point identifiable as the *Uvalde* type was found in Stratum 3B. It is 6.6 cm. long, 2.2 cm. across the shoulders, 1.8 cm. across the base of the stem, and .8 cm. in maximum thickness.

Wells (Fig. 6, A). Two long, contracting stem points, identified as the *Wells* type, were recovered from Stratum 6. They were found with a *Morrill* point and appear to date from a fairly early Archaic period. The one complete example has a total length of 6.7 cm. and a stem length of almost 3 cm. The shoulders on both are about 2.2 cm. wide, and the maximum thickness varies from .7 to .9 cm.

Williams (Fig. 3, L). This type is represented by one specimen which was found in Stratum 3B. It measures 6.1 cm. long, 2.7 cm. across the shoulders, 2 cm. across the base of the stem, and .6 cm. in maximum thickness.

Unidentified Dart Points. Twelve projectile points fail to fit any of the known types, and are not numerous enough to justify establishing, even tentatively, any new types. Five are from Stratum 3B, two from Stratum 4, three from Stratum 6, one from Stratum 8, and one from the surface.

Two small fragmentary expanding stem points with convex bases were found in Stratum 3B. They have short barbs and broad stems. The blade is incomplete on both specimens, but appears to have been triangular in outline. Both points are similar to the *Castroville* type, but are notably smaller in size. Maximum width of the stem is 2.5 cm., average stem length 1 cm., maximum width of the blade is 2.7 cm., and the average thickness is .7 cm.

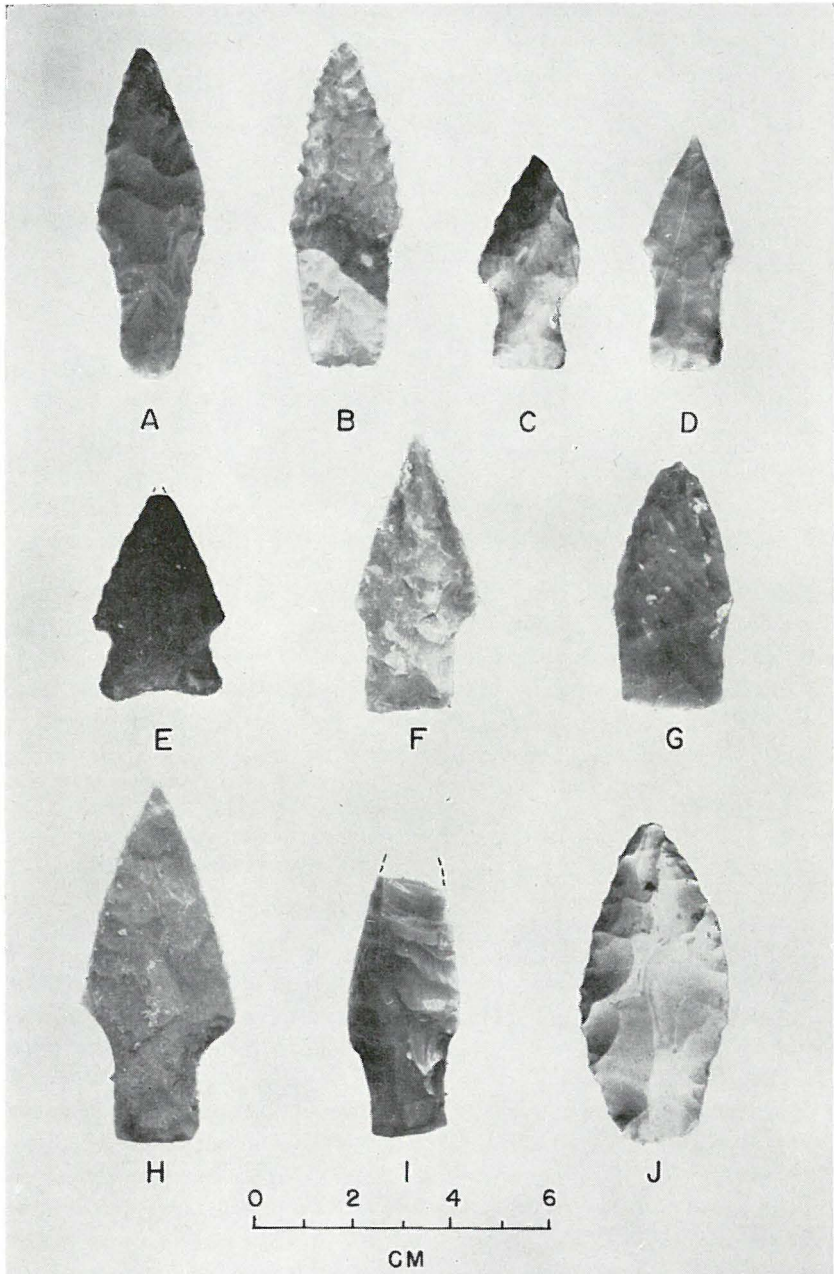


Fig. 6. Dart Points. A, Wells. B, Morrill. C-E, G, J, Unidentified. F, Travis. H, I, Nolan.

An additional two points from Stratum 3B have faintly convex bases and roughly rectangular stems. The blades are triangular, weakly shouldered, and have slightly convex lateral edges. The crude, essentially unifacial chipping is one of the most distinctive features of these points; otherwise, they resemble the *Travis* type. The average stem width is 1.6 cm., average stem length 1.5 cm., average blade width 2.3 cm., average thickness .8 cm., and the range in total length is 5.5 to 5.8 cm.

A large bulbous stemmed point is the only other unidentified point from Stratum 3B. Although fragmentary, the blade is distinguished by large, but barbless, shoulders and convex blade edges. Maximum width across the stem is 2 cm., length of the stem 1.7 cm., maximum blade width 3.8 cm., and thickness .8 cm.

Illustrated in Fig. 6, J is a leaf-shaped point found in Stratum 4. It is worked primarily on one face, has a slightly convex base and a contracting stem. The blade possesses extremely weak shoulders, convex blade edges and is lanceolate in outline. The workmanship is rather poor. This point is 6.5 cm. long, 3 cm. in maximum width, and .6 cm. in maximum thickness.

A complete dart point with a broad rectangular stem and faint smoothing on the lateral edges of the stem was found in Stratum 4. The blade has very slight shoulders and convex edges. The stem and, to a lesser extent, the workmanship suggest the *Scottsbluff* type. This point (Fig. 6, G) is 5 cm. long, 2.5 cm. across the shoulders, 2.3 cm. across the base of the stem, and .9 cm. thick.

Two small dart points from Stratum 6 (Fig. 6, C, D) are characterized by long, roughly rectangular stems, and small triangular blades. In some respects they are like *Carrollton* points, but they are smaller and lack the basal smoothing of *Carrollton*. They are 4.2 and 4.7 cm. long, 2.1 and 1.8 cm. wide across the shoulders, and .8 and .7 cm. thick, respectively.

A small expanding stem dart point (Fig. 6, E) was found in Stratum 6. The base is concave and the blade is short and triangular with small barbs. This point bears some resemblances to both the *Frio* and *Edge-wood* types, but cannot be classed as either. It measures 4.2 cm. long, 2.7 cm. across the shoulders, 2.5 cm. across the base, and .7 cm. in maximum thickness.

The one unidentified point (not illustrated) from Stratum 8 is a crudely made specimen with a more or less rectangular stem and a convex base. The blade has moderately strong barbs, with one straight lateral edge and one convex lateral edge. The stem is 2 cm. wide, 1.8

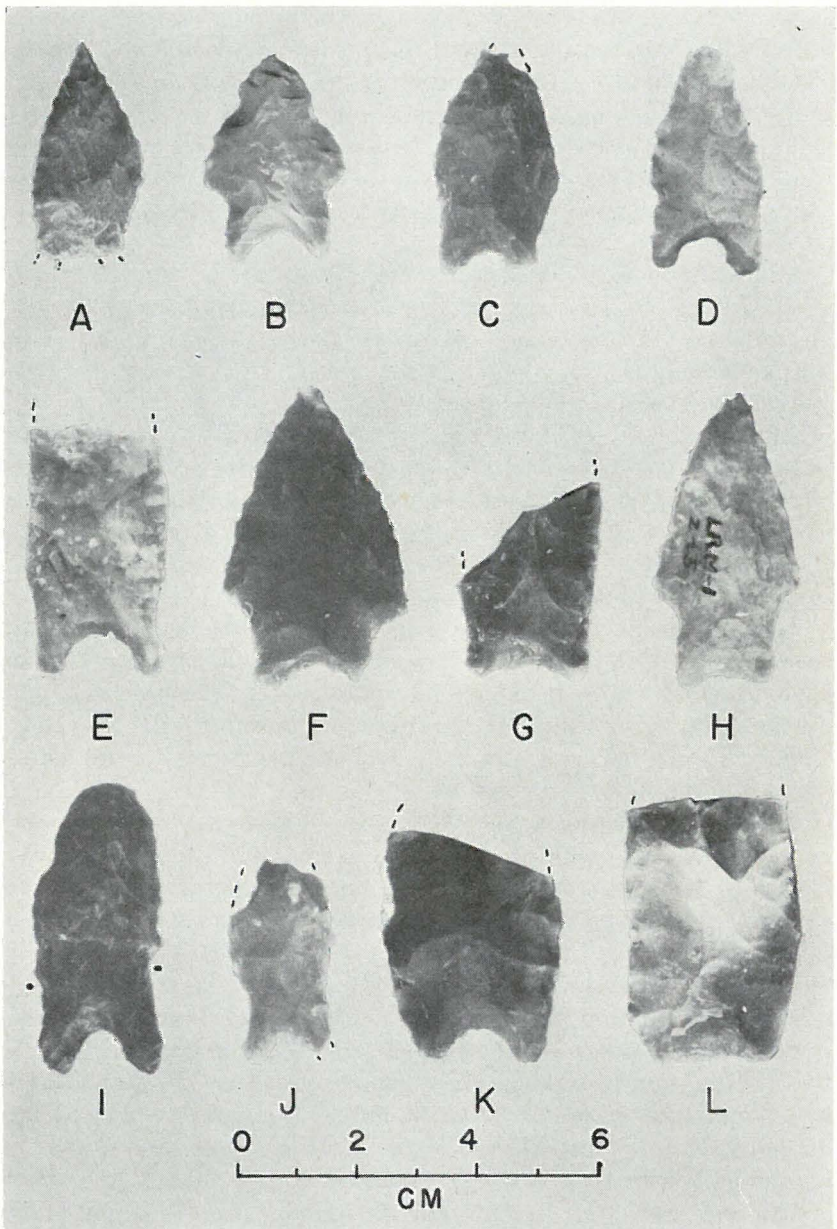


Fig. 7. Dart Points and Knife from Stratum 8. A-E, Gower. F, Gower, Variant A. G, Gower, Variant B. H, Gower, Variant E. I, J, Gower, Variant F. K, Gower, Variant D. L, Lanceolate knife with a slightly concave base. Dots on I indicate extent of stem smoothing.

cm. long; the blade is 3.8 cm. wide and 1 cm. thick; and the total length is 7.3 cm.

The last unidentified point, found on the surface,* is a long and slender, rectangular-stemmed specimen (Fig. 8, E), which in outline is somewhat like the *Bulverde* type. In size, however, it is similar to what Suhm, Krieger, and Jelks (1954: 396-399) have termed spear points. The workmanship is very good, with the blade exhibiting neat parallel flake scars. The blade has straight edges and prominent, but not barbed, shoulders. The edges of the stem are parallel and the base is essentially straight. This specimen is 11.2 cm. long, 3 cm. across the shoulder, 2 cm. across the base of the stem, and 1 cm. in maximum thickness.

DRILLS

Five artifacts classed as drills were found in Stratum 3B. Three are apparently reworked projectile points, one *Pedernales*, one *Marshall* (Fig. 8, C), and one unidentified (Fig. 8, D). The remaining drills have simple expanding stems (Fig. 8, A, B). All are bifacially worked and the drill shafts appear lenticular in cross section. One (Fig. 8, B) has traces of the nodular cortex on one face of the stem and across the base. The opposite face of this same specimen has retained portions of the bulb of percussion. The two complete shafts (Fig. 8, A, D) are both about 4.5 cm. long.

KNIVES

The thirteen artifacts identified as knives can be sorted into three major groups on the basis of variations in their outlines. The most common form—ten examples—has a lanceolate outline and a concave (Fig. 7, L) or convex base (Fig. 9, A, B, E). These specimens are comparatively short and percussion chipped, several possibly by the billet technique. Two of the lanceolate knives are very crudely made and notably thicker than the others. These knives average 8.1 cm. long, 5 cm. in maximum width, and 2.4 cm. in maximum thickness. The eight better made specimens, by contrast, average 6.2 cm. long, 3.7 cm. in maximum width, and 1.5 cm. in maximum thickness. Seven of the lanceolate knives are from Stratum 3B, one from Stratum 2, and two from Stratum 8.

* Although from the surface, this specimen is included because of its uniqueness. The other points from the surface duplicate those found *in situ* and, consequently, are not considered.

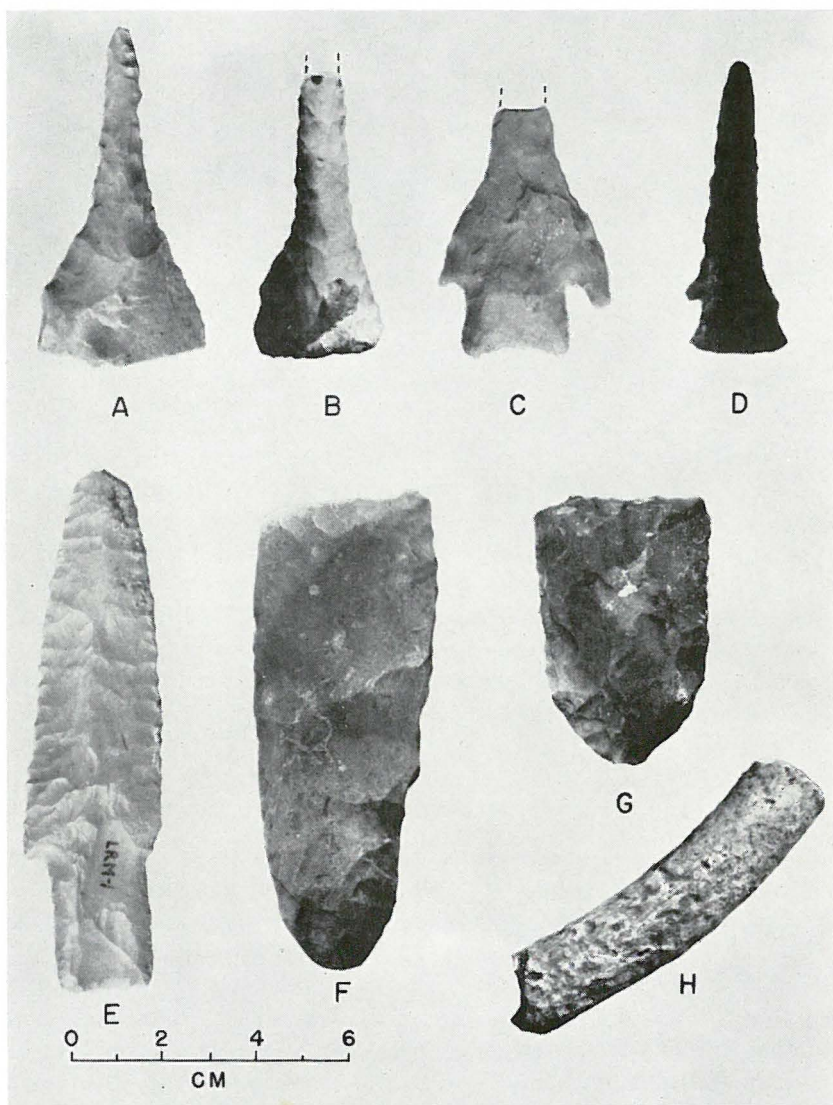


Fig. 8. Drills, Large Stemmed Point, Gouges and Worked Antler. A-D, Drills. E, Large, unidentified stemmed point. F, G, Gouges. H, Cut and smoothed deer antler.

A second knife form, represented by two specimens, consists of large flakes retouched primarily on one face (Fig. 9, C). Both appear to have been hastily fashioned from large hammerstone flakes. The largest example is 11 cm. long, 4.1 cm. in maximum width, and 1.4 cm. in

maximum thickness. One was found in Stratum 3B, the other (Fig. 9, C) in Stratum 4.

The third knife type, known from one complete specimen (Fig. 9, D), is a straight-based triangular form. It is by far the best made knife found at the site, and has broad, shallow flake scars which suggest the billet percussion chipping technique. The lateral edges have been retouched so that this knife appears somewhat lenticular in cross section. It was found in Stratum 3B, and is 11.3 cm. long, 5.2 cm. across the base, and 1 cm. in maximum thickness.

SCRAPERS

A total of twelve scrapers, including three distinct types and two unidentifiable fragments, were recovered from the Youngsport Site. One type, a convex side scraper, is made from flakes retouched primarily along one edge. Six of these were found, four in Stratum 3B, one in Stratum 6, and one in Stratum 8. The three complete examples range from 4.8 to 7.4 cm. in length, 4.3 to 5 cm. in maximum width, and .6 to 1.6 cm. in maximum thickness.

The second group of scrapers consists of two specimens from Stratum 3B which are chipped only on one end (Fig. 10, A). Both are made from rather thick flakes and do not evidence any intentional shaping. The bit edge on both is rather pronounced.

Two flakes chipped along most of their edges constitute the third type of scraper (Fig. 10, B). One of these has been fashioned from a billet flake, the other from a hammerstone flake. One was found in Stratum 3B, the other in Stratum 6.

Two additional flakes appear to have been used as scraping tools, but both are too fragmentary to classify further. One was found in Stratum 3B, and one in Stratum 8.

CHOPPERS

Two large flint nodules with percussion chipping on one or both faces were recovered from Stratum 3B. One of these (Fig. 10, C) has a very neat cutting or chopping edge, while the other specimen is quite crudely made. The proximal ends of both are unaltered and retain the nodular cortex.

CLEAR FORK GOUGE

Two artifacts, one from Stratum 6 and one from Stratum 8, can be identified as Clear Fork Gouges. One specimen (Fig. 8, F) is bifacially

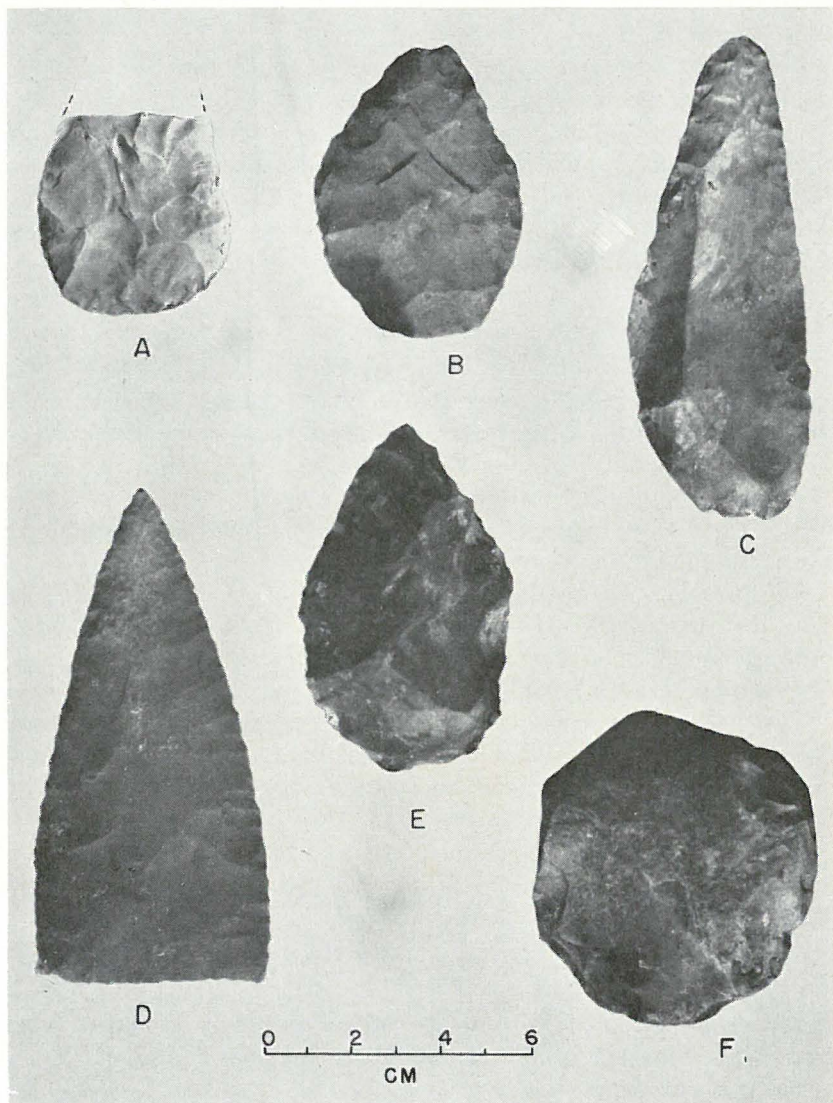


Fig. 9. Knives and Hammerstone. A, B, E, Rounded base knives. C, Large flake knife. D, Triangular, straight base knife. F, Hammerstone.

chipped and plano-convex in cross section. It has a slightly concave bit which has been produced by the removal of several small flakes and which shows considerable wear from use. The distal end is somewhat

tapered. This specimen is 10.3 cm. long, 4.1 cm. across the bit, and 1.5 cm. in maximum thickness.

The second gouge (Fig. 8, G), obtained from Stratum 6, is worked mainly on one face, and is plano-convex in cross section. It exhibits much poorer chipping than the first gouge, and a prepared striking platform is still visible at one lateral edge. The bit is straight and shows very slight wear. The distal end does not taper as much as that of the other gouge, but it has been thinned, possibly to facilitate hafting. This specimen is 6 cm. long, 3.8 cm. across the the bit, and 1.8 cm. in maximum thickness.

HAMMERSTONES

Three more or less spherical flint nodules, presumed hammerstones (Fig. 9, F), were found in Stratum 3B. All appear to have been exhausted cores which were re-utilized. The diameters range from 7 to 8.6 cm.

MANOS

Four manos or handstones were recovered. One, an unshaped quartz cobble, was found in Stratum 2. Three others, all shaped by pecking, occurred in Stratum 3B. One of these is of quartz, one of limestone, and one of granite.

MISCELLANEOUS STONE

Two rectangular shaped artifacts of an unidentified soft stone (slate?) occurred in Stratum 3B. Both are broken, but show some signs of having been intentionally smoothed on the edges. The use of these objects is unknown.

BONE AWLS

Three pointed bone artifacts or awls were recovered from Stratum 3B. One has been worked from a limb bone, while the other two were worked from unidentifiable splinters.

DEER ANTLER

A deer antler artifact (Fig. 8, H) has been intentionally cut and smoothed, and possibly served as a handle. A small hole, 1.7 cm. deep and 1 cm. in diameter, has been drilled in one end, probably for hafting an artifact such as a drill. The antler measures 8.1 cm. long and 2 cm. in maximum diameter. It was found in Stratum 4.

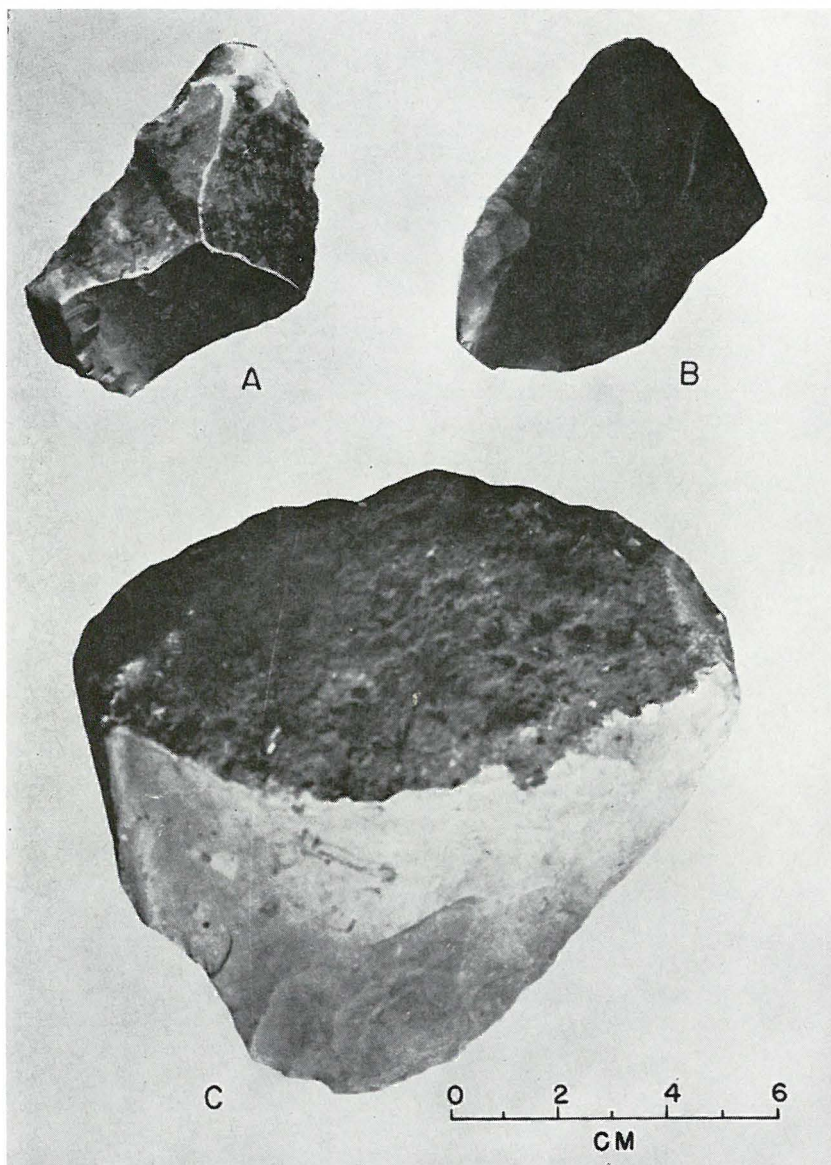


Fig. 10. Scrapers and Chopper. A, End and side scraper. B, Utilized flake scraper. C, Chopper.

SUMMARY AND COMPARISONS

The most significant findings made at the Youngsport Site deal principally with the relative stratigraphic occurrence of certain dart point types. With few exceptions, the other artifacts did not reveal meaningful distribution patterns. This point sequence can be summarized as follows:

TABLE 1
Provenience of Artifacts

Artifact	Stratum							Surface	Totals
	2	3A	3B	4	5	6	8		
Dart point types									
<i>Bulverde</i>	..	..	..	4	1	..	..	..	5
<i>Castroville</i>	1	..	9	..	..	..	..	..	10
<i>Ensor</i>	7	..	..	..	..	..	..	..	7
<i>Gower</i>	..	..	..	..	..	..	5	..	5
<i>Gower Variants</i>	..	..	..	..	..	..	9	..	9
<i>Lange</i>	..	..	2	..	..	..	..	..	2
<i>Marcos</i>	1	..	..	..	..	..	..	..	1
<i>Marshall</i>	..	8	7	..	..	..	..	..	15
<i>Montell</i>	14	..	..	..	..	..	..	..	14
<i>Morrill</i>	..	..	..	..	..	1	..	..	1
<i>Nolan</i>	..	..	..	2	..	..	..	..	2
<i>Pedernales</i>	..	..	41	..	..	..	..	..	41
<i>Travis</i>	..	..	..	1	..	..	..	..	1
<i>Uvalde</i>	..	..	1	..	..	..	..	..	1
<i>Wells</i>	..	..	..	..	..	2	..	..	2
<i>Williams</i>	..	..	1	..	..	..	..	..	1
Unidentified									
dart points	..	..	5	2	..	3	1	1	12
Drills	..	..	5	..	..	..	..	..	5
Knives	1	..	9	1	..	..	2	..	13
Scrapers	..	..	8	..	..	2	2	..	12
Choppers	..	..	2	..	..	..	..	..	2
Clear Fork Gouges	..	..	..	..	..	1	1	..	2
Hammerstones	..	..	3	..	..	..	..	..	3
Manos	1	..	3	..	..	..	..	..	4
Misc. stone	..	..	2	..	..	..	..	..	2
Bone artifacts	..	..	3	1	..	..	..	..	4
Totals	25	8	101	11	1	9	20	1	176

1. The earliest period of occupation yet recognized at the site occurred only in Stratum 8 and is characterized almost exclusively by

rather crudely made, indented base points. These are provisionally termed *Gower* and *Gower* variants. The only other possibly distinctive artifact is the Clear Fork gouge which was found in strata 8 and 6 (one specimen in each).

2. Stratigraphically above Stratum 8 and separated from it by a sterile yellow clay (Stratum 7) was an occupational zone, Stratum 6, which is characterized by long, narrow, stemmed points, including types *Morrill* and *Wells*.

3. Above Stratum 6 is a relatively sterile clay (Stratum 5) which yielded only one artifact, a *Bulverde* point. It is quite probable that this specimen is intrusive from the layer above, Stratum 4, where *Bulverde* points were more numerous.

4. Overlying Stratum 5 was a moderately rich cultural zone (Stratum 4) which contained dart point types *Bulverde*, *Travis*, and *Nolan*.

5. Above Stratum 4 was the richest cultural zone (Stratum 3B) encountered by the test excavations. It yielded six different dart point types (*Castroville*, *Lange*, *Marshall*, *Pedernales*, *Uvalde*, and *Williams*), although the *Pedernales* points were by far the most common. Other classes of artifacts were also relatively more numerous in this zone and the full significance of their presence is difficult to ascertain. It might be noted, however, that manos appear for the first time, and that all the drills were obtained from this zone.

6. Stratum 3A, a localized zone above Stratum 3B, produced only *Marshall* points. No other artifacts were obtained from this lens.

7. The most recent occupational zone sampled, Stratum 2, yielded principally *Montell* and *Ensor* points; minor forms include one *Marcos* and one *Castroville*.

The above dart point sequence in many ways agrees very closely with that recently reported by Johnson, Suhm, and Tunnell (1962: 118-123) for the Canyon Reservoir area, Comal County, Texas. Stratum 4 at the Youngsport Site corresponds very favorably with their Early Archaic period, while Stratum 3B coincides with their Middle Archaic period and Stratum 2 with their Late Archaic. Their Transitional Archaic period, provisionally distinguished by *Darl* points and a small, unnamed expanding stem form, is not present at the Youngsport Site. Also, unlike the Canyon Reservoir sites, there was no suggestion of a time difference between *Ensor* and *Montell* points. Perhaps Stratum 2 represents mixed refuse from several occupations.

While concurring with the Canyon Reservoir data, the findings at the Youngsport Site suggest some additions and refinements. In the first place, there now seems to be enough information to temporally

place the *Castroville* and *Marshall* types: Both apparently first appeared in the Middle Archaic period and survived into early Late Archaic times. Although less well represented, and hence more tenuous, the occurrence of *Lange* and *Williams* points seems to indicate that they belong principally to the Middle Archaic time period.

Perhaps the most important information obtained at the Youngsport Site concerns the two occupational zones underlying the *Nolan*, *Travis*, and *Bulverde* types. Comparable data were not found at the three Canyon Reservoir sites, although the Crumley Site in Travis County (Kelly, 1961) did yield a few apparently similar indented base points (tentatively termed "Crumley") from the deepest levels. No zone similar to Stratum 6, which is distinguished by *Wells* and *Morrill* points, has yet been reported from other sites in central Texas.

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The Wolfshead Site: An Archaic-Neo-American Site in San Augustine County, Texas

LATHEL F. DUFFIELD

ABSTRACT

The Wolfshead Site, a multi-component site in the McGee Bend Reservoir area in eastern Texas, was excavated by a crew of the Texas Archeological Salvage Project in November and December, 1960. The data recovered suggest that the site was first occupied by a group who made *San Patrice* and other types of dart points with some Paleo-Indian attributes. Later, a group that made expanding stem and/or side-notched dart points lived on the site. During the latter part of this period, a sand-tempered pottery was utilized. Still later, groups who made contracting stem dart points and expanding stem arrow points camped there briefly. The data from the Wolfshead Site, plus that from other sites in this area of Texas, provide a projectile point sequence which may serve as a chronological guide for further work in the area.

INTRODUCTION

In the fall of 1960 the Texas Archeological Salvage Project investigated five sites in the upper part of the McGee Bend Reservoir area, located in eastern Texas on the Angelina River. One of these, the Wolfshead Site, is the subject of this report. Wolfshead is a multi-component site containing archeological remains of both Archaic and Neo-American cultures, as well as artifacts attributed to transitional Paleo-Indian-Archaic peoples.

Except for a cursory survey conducted by Gus Arnold in 1939 (Arnold, ms.), the River Basin Surveys' work at McGee Bend constitutes the only archeological research that has been undertaken in this part of eastern Texas. The salvage operations began in 1948 when Robert L. Stephenson made a survey of the reservoir. He discussed the 80 sites that he discovered in terms of the Caddoan area classification system in use both then and now for northeastern Texas (Stephenson, 1948). In 1956 and 1957, nine McGee Bend sites were excavated, and

once analysis of these sites was under way it became clear that they were related not only to the Caddoan archeological area adjoining on the north, but also to the Galveston Bay Focus adjoining on the south. Despite these relationships, however, it was apparent that much of the McGee Bend material is actually rather unique and that the classifications of archeological complexes in current usage for the Caddoan and Galveston Bay areas are not applicable at McGee Bend.

In an attempt to clarify problems that had arisen from the excavations of 1956 and 1957, additional excavations were undertaken in 1960 by the Texas Archeological Salvage Project under the provisions of Memorandum of Agreement No. 14-10-0333-657 between The University of Texas and the National Park Service. These excavations were supervised by the writer under the general direction of Edward B. Jelks.

Most of the work of the 1960 season was concentrated on the Wolfshead Site, where projectile points and other artifacts representing three sequential periods were found. The earliest period is characterized by *San Patrice* type dart points and by dart points of Paleo-Indian typological affinity. Most representative of the second period are expanding stem and side-notched dart points as well as plain, sand-tempered pottery. Small *Gary* type dart points, expanding stem arrow points, and the same plain sandy pottery found in the second period are the major traits of the third period.

Because they possess both Paleo-Indian and Archaic typological attributes, *San Patrice* points have heretofore been assigned to a hypothetical transitional position between the Paleo-Indian and Archaic stages (Webb, 1946). At the Wolfshead Site, the placement of *San Patrice* points in a transitional Paleo-Indian-Archaic context is supported not only by typological factors but also by distributional and associational data.

In the interpretive section of this report this sequence and its supporting evidence are presented in detail. Inter- and intra-areal comparisons are also drawn, and several conjectures about the significance of the data will be presented. In the descriptive section, the characteristics and environment of the Wolfshead Site are discussed, the artifacts and other data recovered are described, and the methods of excavating, the manner of recording, and procedures of analysis are explained.

ACKNOWLEDGMENTS

Without the cooperation of many individuals the report on the

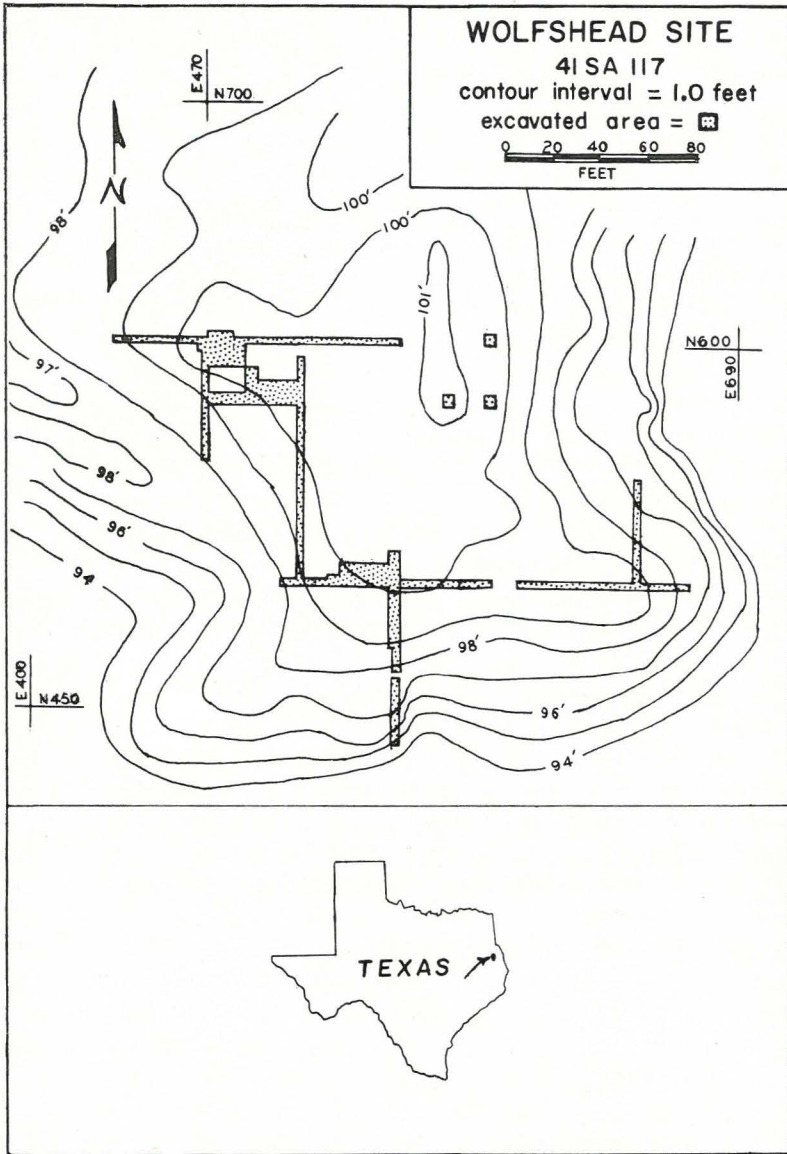


Fig. 1.

Wolfshead Site would not have been possible. In the field, Mr. T. Baker, executor of the Blount estate gave us access to the land and granted permission to dig the site. In Austin, Mr. Edward B. Jelks,

Executive Director of the Texas Archeological Salvage Project, has been helpful in supplying information and advice, both during excavation of the site and later during its analysis. Other members of the T.A.S.P. who aided work in the field or in the laboratory are Kenneth Bennett, W. A. Davis, and LeRoy Johnson, Jr.

SITE DESCRIPTION

The Wolfshead Site (41SA117) occupies a large sand-topped knoll in west-central San Augustine County, Texas (Fig. 1). The site was named "Wolfshead" by local collectors because they frequently found small dart points there with an outline resembling a wolf's head (*San Patrice* type). In 1953, after having been cultivated continuously for many decades, farming activities ceased, and since that time the site has lain fallow. Erosion, especially around the sloping sides of the knoll, has been extensive.

Surface evidence of occupation, covering about an acre (Fig. 1), consists principally of petrified wood flakes and cores, a few dart points, fewer arrow points, and an occasional sherd. The surface debris is concentrated at the edges of the site where it has been exposed by erosion.

Preliminary testing revealed two geologic soil zones: (1) a basal red-orange clay, and (2) a surface member of fine-grained, tan, sandy soil containing, in the lower part, numerous orange-colored, clay inclusions (Fig. 2). The red-orange clay is of the Amite type and is considered to be a riverine deposit (Martin, 1946). The upper foot or so of this clay contains cultural material, but it is uncertain whether this material is contemporaneous with the clay or whether it was intruded into the red clay from the overlying sandy zone. Some artifacts were found *in situ* in the clay where no evidence of intrusion was apparent; however, it is possible that tree roots or burrowing gophers could have carried a small amount of cultural detritus downward from the sandy soil into the upper part of the clay. In the central part of the site tests with a post hole digger encountered a yellow, mottled clay underlying the red clay at a depth of three feet. This yellow clay, reportedly a water-deposited member (Ted Silker, personal communication), is evidently sterile of cultural material.

The tan, sandy surface soil which contains most of the cultural material, has a maximum thickness on top of the knoll of about two feet, and it pinches out around the edges of the knoll where the underlying clay has been exposed by erosion. In the extreme lower part of

this zone were bits of red clay derived from the clay zone, indicating that some mixture of the two zones had taken place. Despite this evidence of slight mixing, the separation between the tan sand and red clay zones was sharply defined in all parts of the site.

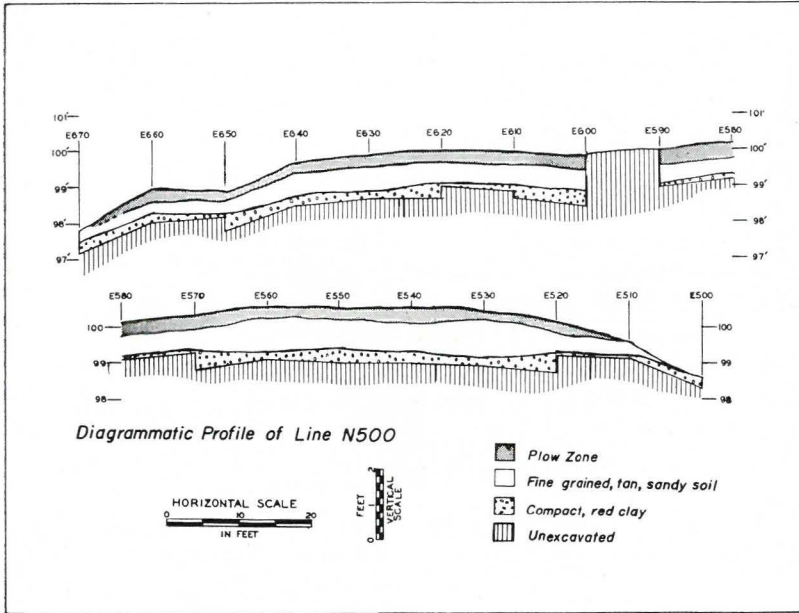


Fig. 2.

EXCAVATION TECHNIQUES

For horizontal control a cardinally-oriented grid was superimposed on the Wolfshead Site before beginning excavation. The grid was laid out with a transit, and the grid stakes were designated according to their coordinate direction and distance from a primary datum point. Thus a stake with a designation of N550-E600 would be 550 feet north and 600 feet east of the primary datum. The grid was so arranged that all grid points used had north and east coordinates.

To serve as vertical datum, a large nail was driven into the base of a small oak tree which was located near the N550-E590 stake. This nail was given an arbitrary elevation of 100 feet and all elevation readings were taken in reference to this height.

Since the cultural debris exposed on the surface was thinly scattered, it was necessary to determine areas of concentrated materials by

trenching. A series of trenches was dug in sections 10 feet long and 25 feet wide, each section being carried down by half-foot intervals. After each level was excavated and the floor cleaned and checked for features, pertinent information was recorded on a level report form.

Nearly all the dirt was passed through one-quarter or one-half inch mesh screens. The materials recovered from each level and from each excavation unit (generally a 2.5×10 ft. trench) were sacked and recorded by site, trench designation, level, date of excavation and excavators. The materials were sent to the laboratory in Austin, where they were washed, catalogued and prepared for analysis.

Recorded data, in addition to the level reports and bag information, included a photo record, a contour map, a plan of the excavations, a site journal, and a daily log. All records and materials recovered are on file at the Texas Archeological Salvage Project laboratory in Austin.

As the trenching progressed, several areas of concentration were found and the excavations were focused on those areas in order to obtain as much information as possible in the limited time available. Trenches connecting the areas of concentration were dug to help relate them to one another.

LABORATORY TECHNIQUES

After the materials were catalogued, they were roughly sorted according to the various classes of artifacts represented, e.g., pottery, dart points, arrow points, knives, scrapers, and ground stone artifacts. These groups were later subdivided. The pottery was subdivided on the basis of tempering agents, the dart points and the arrow points were classified according to similarity in over-all form and size, and the other chipped stone objects were placed in subgroups depending on form and other characteristics. Some of the subgroups were further subdivided. Each final grouping consisted of individual artifacts which held a majority of their characteristics in common.

After the artifacts had been classified according to the above methods, they were described and their horizontal distributions were studied. This showed that arrow points and some kinds of pottery clustered in the southern part of the site. On this basis, the site was divided for purposes of analysis, into two major areas—a northern section and a southern section (Fig. 3). Several excavation units which were peripheral to these major areas were analyzed separately.

ARTIFACT DESCRIPTIONS

From excavated areas at the Wolfshead Site 885 artifacts were re-

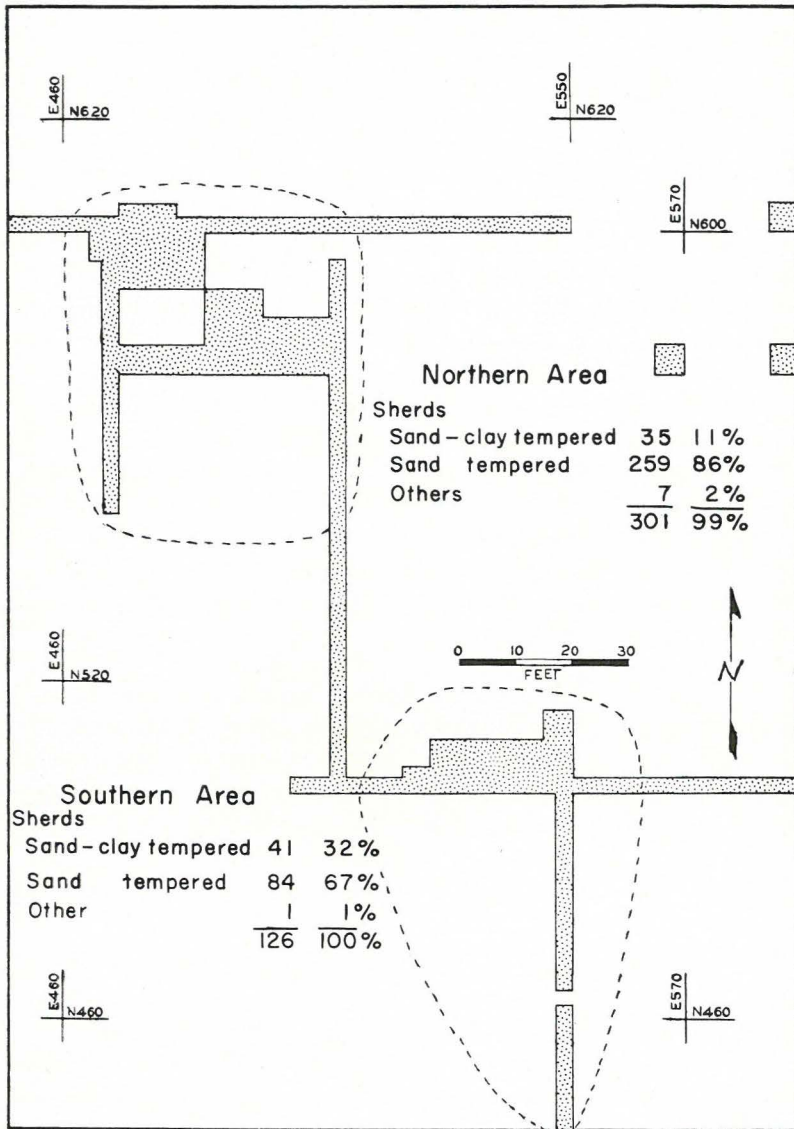


Fig. 3. Plan of excavations.

covered. In addition, 60 artifacts were found on the surface, in back dirt, etc. Included are 512 sherds, 144 dart points and dart point fragments, and 20 arrow points and arrow point fragments.

PROJECTILE POINTS

Most of the projectile points were crudely made from a coarse-grained petrified wood that is laminated and tends to break into thin sheets when chipped. Apparently, when working this material, it is possible to achieve only a basic outline as the coarse grain does not permit fine flaking. However, some artifacts are made of a fine-grained petrified wood—a material more adaptable to fine chipping—and these are often delicately flaked. Some points were made from small, fine-grained jasper and chert pebbles which are occasionally found in the nearby stream beds. These points are usually well made, although they sometimes retain a part of the original cortex.

The difficulties encountered by the prehistoric workman in manufacturing projectile points from the coarse-grained petrified wood and from the small pebbles are reflected in the archeologists' problems of analysis and classification. Dart points made of the small pebbles, for example, are necessarily smaller than dart points made from larger stones; therefore, at times, the standard division of projectile points into dart point and arrow point categories was difficult to maintain. Artifacts classed here as arrow points have the following characteristics: (1) they were manufactured from thin flakes, (2) they are short in over-all length, and (3) their outlines are similar to the outlines of recognized arrow point types. Dart points, on the other hand, were made from small cores or thick flakes, they have a basal or maximum stem width that is relatively wide in relation to the blade length, and they have outlines similar to those of established types.

Dart Points

Five major forms of dart points are present: points with Paleo-Indian attributes (42 specimens), expanding stem points (26 specimens), side-notched points (9 specimens), contracting stem points (24 specimens), and points with parallel-sided stems (5 specimens). In the analysis, each of these major categories was divided and subdivided into smaller and smaller subgroups until all the specimens in a particular subgroup were almost identical to one another. In the descriptions that follow, the principal features and measurements of the dart points comprising each subgroup are given, and occasional reference is made to comparable points from other sites. Provenience data will be presented in a later section.

POINTS WITH PALEO-INDIAN ATTRIBUTES

San Patrice Type

The 36 *San Patrice* points found at the Wolfshead Site do not coincide precisely with the definitions given by Webb (1946: 13-17), by Suhm, Krieger, and Jelks (1954: 477), or by Bell (1958: 84-85). Consequently, the type definition is here expanded to fit the present sample. The *San Patrice* group can be recognized by (1) their slightly to strongly concave bases, (2) smoothing of the base and stem edges, (3) corner notching, (4) their slight to prominent shoulders, and (5) their short, subtriangular, sometimes stubby blades. Other characteristics that occur frequently, but not always, are basal thinning and alternate beveling of the blade edges.

The *San Patrice* points from the Wolfshead Site fall rather readily into three subgroups which are here assigned the tentative variety names *hope*, *st. johns*, and *goodwin*. The system of type-variety nomenclature devised by Johnson (1962) and Jelks (1962: 23) is employed, wherein the initial letter of a type name is capitalized, all letters of a variety name are lower case, and all names—both type and variety—are italicized.

st. johns variety (26 specimens, Fig. 4, A-H). The *st. johns* variety of the *San Patrice* type differs from the *hope* variety in the manner in which the stem is differentiated from the blade. The *st. johns* group has small, but usually prominent, oblique side notches, situated immediately above the base, which define the shoulders and stem. (Prominent notching was not included as a major attribute of *San Patrice* in previous definitions of the type.) The blades are short, subtriangular in shape, and have edges which vary from concave to convex. Fifteen of the Wolfshead specimens are made of petrified wood, the others are of jasper and chert. In length, all are between 20 and 34 mm. except for two abnormally long specimens which are 39 and 40 mm. long respectively. Widths range from 17 to 26 mm., the average length is 28 mm., and the average width is 21 mm.

Eleven of the *st. johns* points have alternately beveled blades, usually in conjunction with concave blade edges. The base of 15 specimens were thinned by the removal of longitudinal flakes from both faces: another was thinned on one side only.

hope variety (9 specimens, Fig. 4, J-N). Specimens of the *hope* variety have—instead of the prominent side notches characteristic of the *st. johns* variety—slightly concave sides which define the stem. All the bases have been thinned and the short blades have slightly con-

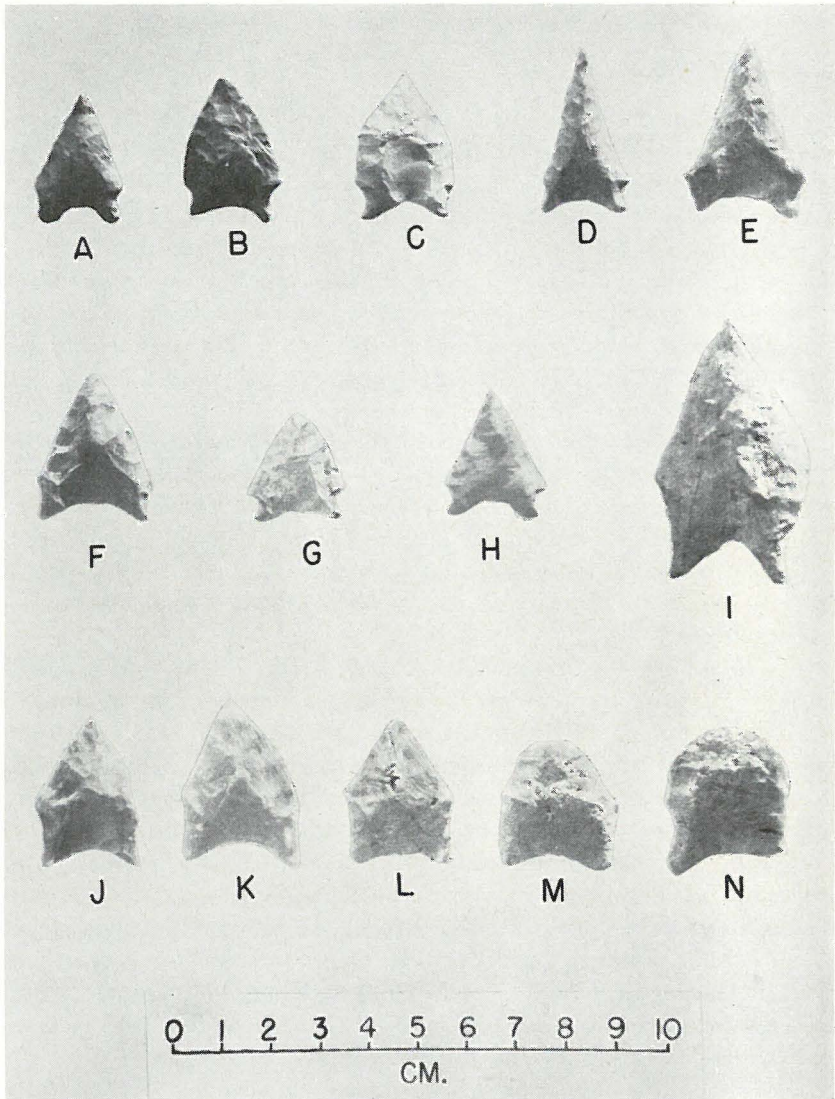


Fig. 4. *San Patrice* Dart Points. A-H, *San Patrice st. johns*. I, *San Patrice goodwin*. J-N, *San Patrice hope*.

cave to slightly convex edges. These specimens closely resemble the *San Patrice* points illustrated by Webb (1946: 11, Pl. 1, 7-10, 15-19) and by Bell (1958: 84-85). Four of the *hope* points are made of a fine-grained sandstone (possibly Catahoula sandstone, Sellards, *et al.*, 1932:

723-726), two were manufactured from petrified wood, and the remainder are of chert. They have the following dimensions: length 26 to 37 mm., average 31 mm.; width 22 to 30 mm., average 24 mm. Two of the *hope* points have alternately beveled blades, four lack beveling, and three are so fragmentary that the blade characteristics cannot be determined.

goodwin variety (1 specimen, Fig. 4, I). One large *San Patrice* point has concave stem edges and a subtriangular blade with one straight edge and one convex edge. Made of petrified wood, it measures 54 mm. long by 32 mm. wide. There is a concavity or broad notch in the base which is 8 mm. deep. *San Patrice goodwin* points have been found in Jasper County (south of the Wolfshead Site) on a site in the Dam B reservoir area (D. T. Kent, Jr., personal communication).

Discussion: *San Patrice* points have been found in Texas at the Jake Martin Site (Davis and Davis, 1960: 20), the Doering and Kobs sites (Wheat, 1953: 205, 211, Pl. 38, m), the Sawmill Site at McGee Bend Reservoir, and at an unnamed site at Dam B Reservoir in Jasper County (D. T. Kent, Jr., personal communication). In Louisiana this type has been reported from the Albany Landing Site (Ford and Webb, 1956: 73), the Mooringsport Site (*ibid.*: 74), the Sanson Site (*ibid.*: 73), and the type location, the San Patrice Site (Webb, 1946: 13-17). In addition, Webb (1946) reports *San Patrice* points from 16 other sites in Louisiana and from one site in Mississippi. At least one of the dart points found at the Poverty Point Site in Louisiana and illustrated by Ford and Webb (1956: Fig. 21, q) appears to fit the *hope* variety as defined here, although Ford and Webb identify it as a *Meserve* point.

The *San Patrice* points from the Wolfshead Site share some characteristics with the *Meserve*, *Edgewood*, and *Paisano* types. Similarities to *Paisano* and *Meserve* have been noted before (Suhm, Krieger, and Jelks, 1954: 460, 477; Davis and Davis, 1960: 21; Ford and Webb, 1956: 63), but the Wolfshead sample indicates that *San Patrice-Meserve* relationships are even stronger than has been previously suggested, the differences between them being largely a matter of degree rather than of kind.

The major differences, some of which have been noted by Davis and Davis (1960: 21), are: (1) *San Patrice* points are shorter and relatively wider than *Meserve* points; (2) some *Meserve* points appear to be reworked; (3) the shoulders on *San Patrice* points are always prominent, whereas the shoulders on *Meserve* points are often poorly defined; (4) *San Patrice* stems generally have small but distinct ears

which protrude at about a 45 degree angle from the longitudinal axis of the point, while the ears on stems of *Meserve* points are less well defined; and (5) the beveling of *San Patrice* blades is generally on the left whereas the beveling of *Meserve* blades is on the right (bases oriented downward). Most of these differences are a matter of degree and only one or two appear to be major.

As for resemblances, the *Meserve* type and the *hope* variety of the *San Patrice* type share the following characteristics: (1) concave bases which have been ground; (2) concave stem edges; (3) alternately beveled blades; (4) basal thinning by the removal of short longitudinal flakes. When some of the specimens recovered from the Wolfshead Site are compared with illustrated *Meserve* specimens (compare Fig. 4, K with Suhm, Krieger, and Jelks, 1954: Pl. 104, K; and Fig. 4, L with Ford and Webb, 1956: Fig. 21, Q), some overlapping of the types is apparent.

Several possible explanations can be offered for the resemblances between the *San Patrice* and *Meserve* types: (1) there are no historical connections between the two types and the resemblances are purely fortuitous; (2) *San Patrice* points were entirely or partially contemporary with *Meserve* points and the resemblances reflect a historical relationship between the two; (3) one of the two types preceded—and is parental to—the other.

The first of these possibilities is, in my opinion, unlikely. *Meserve* points occur over much of the geographic region where *San Patrice* points are commonly found, and both types appear to date generally from the late Paleo-Indian-early Archaic period. In such circumstances, it is hard to believe that the typological resemblances between *Meserve* and *San Patrice* are accidental.

There is some evidence that the *Meserve* type came into existence before the *San Patrice* type and therefore—if a genetic relationship between the two may be assumed—*San Patrice* probably developed out of *Meserve*. Evidence for the priority of *Meserve* consists in its association with Pleistocene fauna at the Meserve Site in Hall County, Nebraska (Wormington, 1957: 113), and in the apparent occurrence of *San Patrice* in post-Pleistocene contexts at the Jake Martin Site, Upshur County, Texas (Davis and Davis, 1960), and possibly at the Poverty Point Site, West Carroll Parish, Louisiana (Ford and Webb, 1956). Unfortunately there are no direct stratigraphic data on the relative temporal positions of the two types.

Another dart point that appears to have some typological affinity with *San Patrice* is the *Edgewood* type (Suhm, Krieger, and Jelks,

1954: 418–419). Particularly striking is the similarity between the *dixon* variety of *Edgewood* as defined by LeRoy Johnson, Jr., (1962) and the *st. johns* variety of the *San Patrice*. Some of the attributes shared by these two varieties are: (1) an oblique side notch immediately above the base which defines the stem and shoulders; (2) a concave base; and (3) alternately beveled blades. The differences between *st. johns* and *dixon* are, like those between *San Patrice* and *Meserve*, largely a matter of degree. Briefly these differences are: (1) the oblique side notch is wider and deeper in *dixon* than in *st. johns*; (2) *dixon* has more prominent barbs than does *st. johns*; (3) the basal concavity is more pronounced in *st. johns* than in *dixon*; and (4) the beveling of the blade usually occurs on the right side of *dixon* points and on the left side of *st. johns* points.

In attempting to explain the resemblances between *San Patrice* and *Edgewood*, the same three possibilities given above for the *San Patrice-Meserve* relationship must be considered; (1) contemporaneity, (2) development of one type from the other, or (3) coincidental resemblance with no historical relationship. Since little is known about the spatial and temporal distribution of the *Edgewood* type, the first explanation cannot be readily dismissed. The initial estimated dates for *Edgewood* place it late in the Archaic Stage. However, at the Yarbrough Site *Edgewood* points—especially those that are most similar to the *San Patrice* type—occurred in the deeper levels of the site in what is apparently a relatively early Archaic context (Johnson, 1962). Thus, at the present stage of knowledge, there is no strong argument against the possibility that *Edgewood* might have developed out of *San Patrice*—nor that the *San Patrice* and *Edgewood* types are partially or entirely coeval.

Concave-base Points (5 specimens, Fig. 5, A-D)

Five lanceolate points with concave bases are all crudely made from petrified wood. Two are basal fragments, while the others are more complete. Three of them (Fig. 5, A, B, D) are similar in shape to the *Plainview* type (Suhm, Krieger, and Jelks, 1954: 473), but they cannot be called *Plainview* because of the crudeness of the flaking—undoubtedly, to a large extent, a function of the raw material used. The lower edges and some of the bases are lightly ground. The three points with *Plainview*-like shapes are 41 to 52 mm. long, 26 to 30 mm. wide, and 5 to 8 mm. thick.

One concave-base point (Fig. 5, C) is smoothed along the proximal

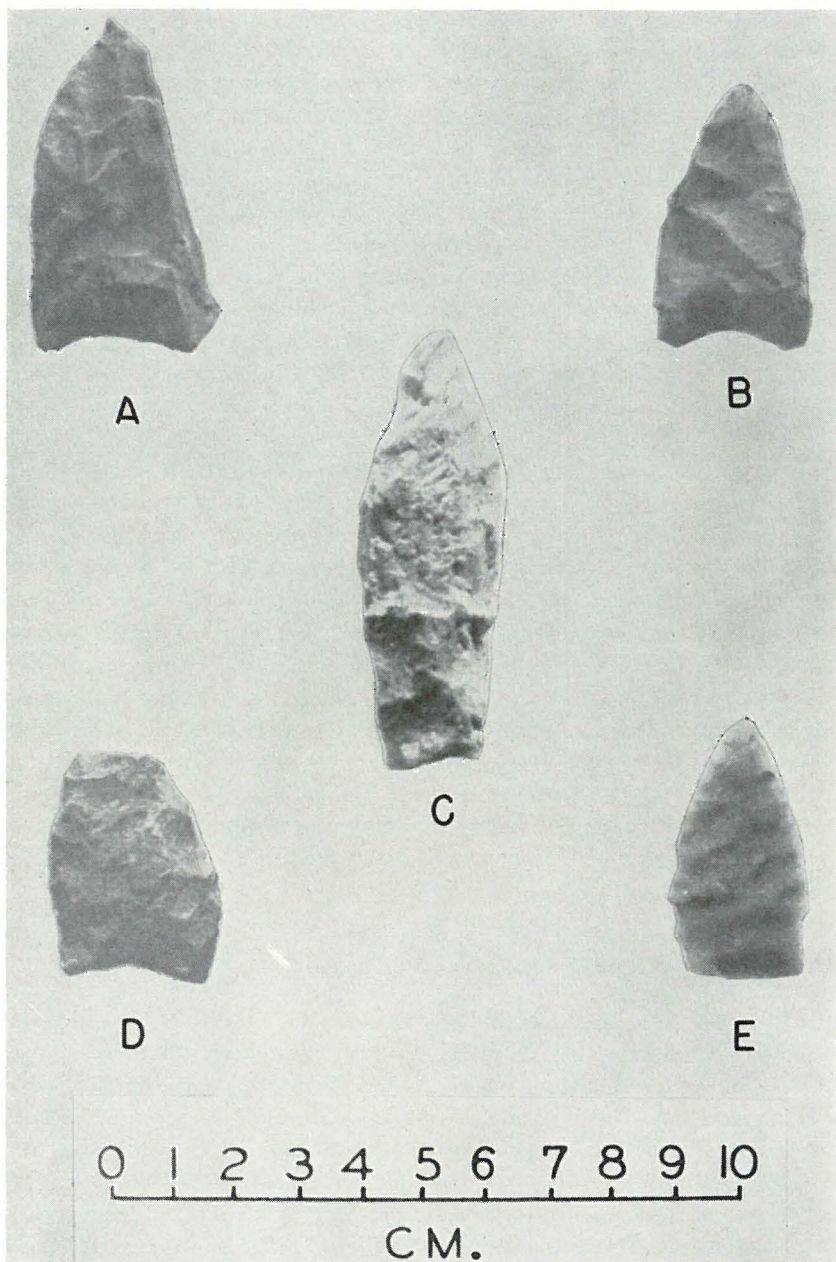


Fig. 5. Points with Paleo-Indian Attributes. A-D, Concave-base dart points. E, Scotts-bluff-like point.

edges and across the base. It is essentially a lanceolate form with a slight expansion in the middle of the blade. From the area of maximum width (23 mm.), the edges of the blade taper slightly to the base. Over-all length is 69 mm.

The fifth concave-base point is too fragmentary for accurate description, but it too has been smoothed across the base and along the lower edges.

Scottsbluff-like Point (1 specimen, Fig. 5, E)

A small, thin, flat *Scottsbluff*-like point which corresponds to Wormington's (1957: 266) Type I form was found on top of the red clay at the same general level where many of the *San Patrice* points occurred. This specimen is 40 mm. long, 21 mm. wide, and 4 mm. thick. It is made of a flint similar to that found in Central Texas, and the stem edges and base are lightly ground. This specimen is too thin to be identified definitely as a *Scottsbluff* point.

EXPANDING STEM FORMS

Corner-notched Points With Straight Bases (9 specimens, Fig. 6, A, B)

Oblique corner notches, which create an expanding stem and prominent, sometimes barbed, shoulders are characteristic of this group of dart points. The bases are straight to mildly convex. The blades are usually short, but the best-made specimen in this group has a relatively long blade. In length these points vary from 21 to 42 mm. (excluding one specimen that is 52 mm. long) and they average 34 mm.; in width they range from 20 to 26 mm., with an average of 23 mm. All but two of these points are made of chert or jasper.

Corner-notched Points With Convex Bases (7 specimens, Fig. 6, K-M)

These points have corner notching which defines an expanding stem and produces prominent shoulders, some of which are barbed. The base of the stem is slightly to strongly convex. The shoulders are generally rounded, a feature which contrasts with the corner-notched, straight-base points. The blades of this form are relatively short and broad. The more complete points measure between 42 and 45 mm. in length and between 22 and 30 mm. in width.

Crude Corner-notched Points (2 specimens, Fig. 6, J)

These two points have one corner notched while the other was never

notched or else this part of the point has been broken off. The bases are straight and the blades are subtriangular with slightly rounded tips and straight to slightly convex edges. The two specimens are 35 and 36 mm. long by 22 and 24 mm. wide, respectively. The smaller one is made of brown chert, the larger one of fine-grained, compact sandstone.

Small, Oblique Corner-notched Points (3 specimens, Fig. 6, H, I)

The basal grinding, incipient oblique corner-notching, and slightly concave bases of these three points suggest that they are uncompleted *San Patrice* points. They are in the *San Patrice* size range: 26 to 32 mm. long, 17 to 19 mm. wide, and 4 to 6 mm. thick. Two of them are made of petrified wood, the other of chert.

Corner-notched Points With Slightly Expanded Stems And Broad Bases
(2 specimens, Fig. 6, G)

Two short-bladed points made of petrified wood have straight to slightly convex bases, prominent shoulders, and mildly convex blade edges. They are 42 and 43 mm. long by 36 and 37 mm. wide respectively. Their stems expand slightly and are broad (19 and 21 mm. wide).

Miscellaneous Expanding Stem Points (3 specimens)

One additional expanding stem point made of petrified wood could be a scraper or a bunt. The stem of this specimen expands slightly and has a convex base. The blade, which may be reworked, is distinctive for its shortness. The shoulders are prominent but one is broken off (Fig. 7, O). Another petrified wood point (unfinished) still has the cortex on the tip and one edge is not worked. This point which is 50 mm. long and 32 mm. wide has a flat base and shallow side notches. The remaining point in this group has a broad (29 mm.) subtriangular blade and shallow side-notches which define the stem. One face of the petrified wood point is flat while the other has crude chipping.

SIDE-NOTCHED FORMS

The side-notched dart points (9 specimens, Fig. 6, C-F) have straight or slightly concave bases, and most of them are made of coarse-grained petrified wood, although a few of the better made ones are of chert or fine-grained petrified wood. The side notches may be set either at right

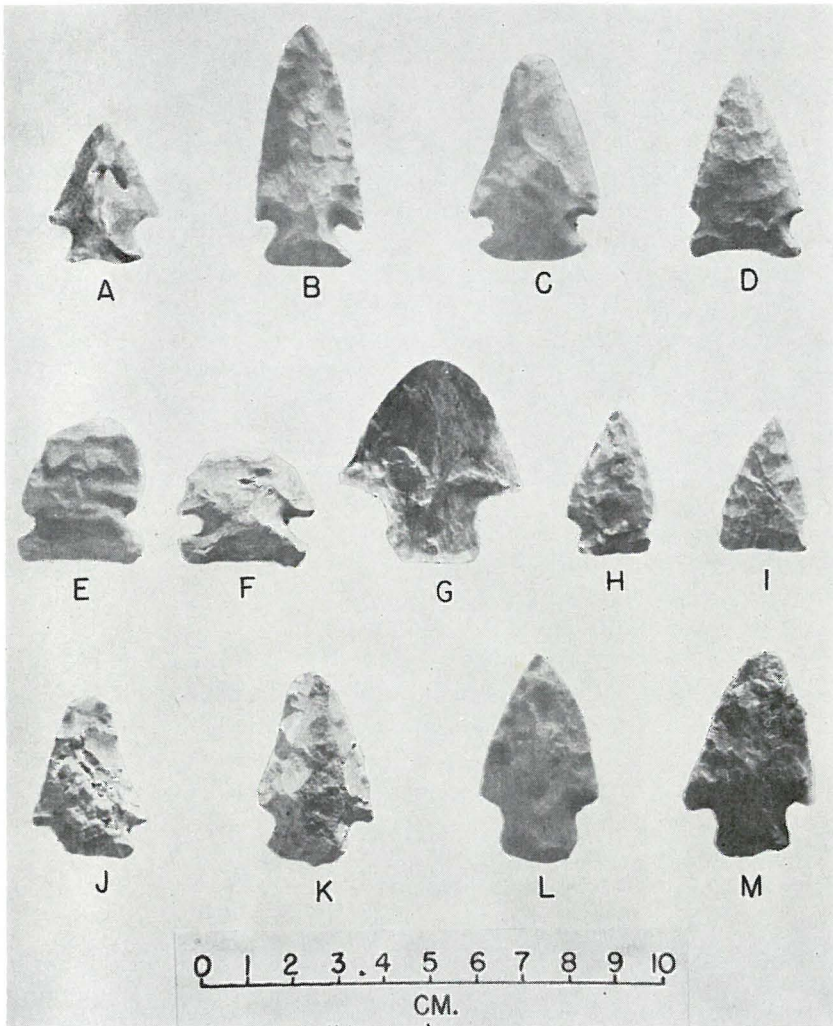


Fig. 6. Expanding Stem and Side-notched Dart Points. A, B, Corner-notched with straight bases. C-F, Side-notched. G, Corner-notched with slightly expanding stem, broad base. H, I, Oblique corner-notched. J, Crude corner-notched. K-M, Corner-notched with convex bases.

angles or at a slightly oblique angle to the long axis of the blade. The length of the blade rather than the angle of the notches, however, was the main criterion used in dividing the side-notched points into two subgroups, since a significant typological difference apparently exists between the points with long blades and those with short ones. The

side-notched points with short blades (4 specimens, Fig. 6, E, F) range in length from 17 to 30 mm. and in width from 22 to 27 mm. On this group all the notches are at right angles to the blade. The base is as wide as, or wider than, the blade. This group, which may have been reworked from longer side-notched points, have broad, convex distal ends instead of sharp tips, and these distal ends are steeply beveled from one face. Perhaps these artifacts were designed for use as hafted scrapers or bunts rather than as conventional dart points.

The side-notched points with long blades (Fig. 6, C, D) are, on the whole, wider than the short-bladed ones. They are from 40 to 50 mm. long and from 25 to 30 mm. wide. All have beveled blade edges, and four of the five specimens have bases that are narrower than the blades.

CONTRACTING STEM FORMS

Gary Type

All of the 24 dart points with contracting stems are of the *Gary* type, and they were generally distributed in the upper levels of the site. As there is considerable variation within the group, it was divided into six subgroups for convenience of description.

Small *Gary* points with slight shoulders (10 specimens, Fig. 7, A-D). All except two of these are made of petrified wood, the exceptions being of red and yellow jasper. These points have contracting stems, relatively long subtriangular blades with edges varying from slightly concave to slightly convex, and unworked flat bases on which the nodular cortex is present. These points tend to be thick (6 to 9 mm. with a mode of 7 mm.). They are relatively short, the length varying from 30 to 39 mm. (excluding one extra large one which is 46 mm. long), and averaging 34 mm.; and they are narrow, width being 14 to 20 mm., with an average of 17 mm. The small shoulders project slightly to the sides.

Small *Gary* points with prominent shoulders (5 specimens, Fig. 7, E, F). One of these small points is made of petrified wood, while the others are of fine-grained cherts. The broad, prominent shoulders are slightly barbed. These points range in length from 27 to 36 mm., with a modal length of 32 mm. Their widths vary from 20 to 24 mm., with an average of 22 mm. The edges of the subtriangular blades are slightly convex, and the short contracting stems have either rounded or straight bases.

Small *Gary* points with rounded bases (2 specimens, Fig. 7, G). Two of the small *Gary* points—one 24 mm. long, the other 28 mm.

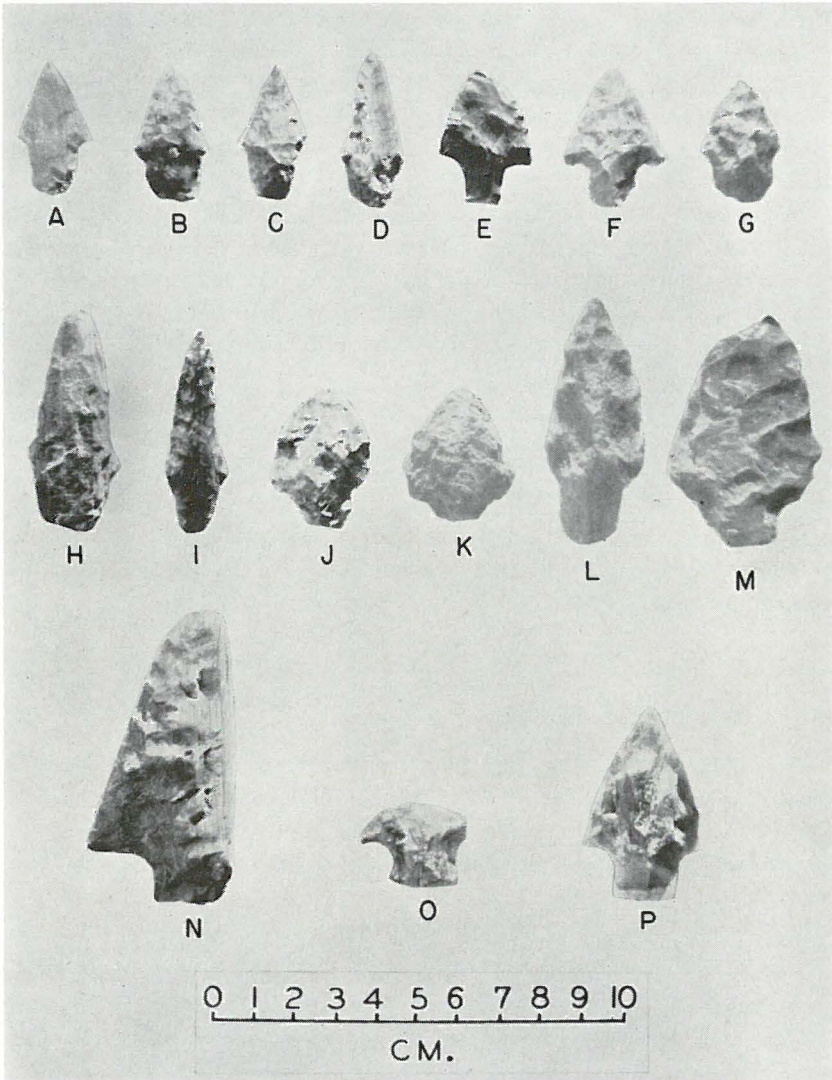


Fig. 7. Dart Points. A-D, Gary, slight shoulders. E, F, Gary, prominent shoulders. G, Gary, round base. H, I, Gary, narrow. J, K, Gary, wide. L, Gary, crude. M, Short parallel-sided stem, rounded base. N, Pogo? point. O, Miscellaneous expanding stem. P, Miscellaneous parallel-sided stem.

long—have rounded bases, contracting stems, slight shoulders, and short subtriangular blades with convex edges. These points are, respectively, 15 and 18 mm. wide, and both are 7 mm. in maximum

thickness. They resemble the *hobson* variety of *Gary* as defined by Johnson (1962).

Small, narrow *Gary* points (3 specimens, Fig. 7, H, I). These points—all made of petrified wood—are narrow in relation to their length. They are, respectively, 48, 51, and 52 mm. long by 15, 23, and 21 mm. wide. Thickness is consistent at 7 to 8 mm.

Small, wide *Gary* points (3 specimens, Fig. 7, J, K). A short, broad blade and a short, straight or contracting stem with a flat base are the characteristic traits of this subgroup. The shoulders measure from 26 to 28 mm. wide, while over-all length ranges from 32 to 37 mm. These points are all made from petrified wood and they tend to be relatively thin.

Crude *Gary* points (1 specimen, Fig. 7, L). One *Gary* point made of a compact sandstone or small-grained quartzite is 60 mm. long by 24 mm. wide and has a slightly tapered stem with a rounded base. The shoulders are rounded; the subtriangular blade is rather long and has convex edges. One face of this specimen is relatively flat, but there is a prominent hump on the other face which gives the point a flattened triangular cross section.

PARALLEL-SIDED STEM FORMS

Pogo? Type (1 specimen, Fig. 7, N)

A large, fragmentary dart point with a broad triangular blade is possibly an example of the *Pogo* type. Made of petrified wood, this point is 68 mm. long and 48 mm. wide (reconstructed). It has well-defined shoulders and a short, parallel-sided stem with a straight base.

Points With Short Stems And Rounded Bases (2 specimens, Fig. 7, M)

The broad, long blades of these points contrast sharply with their short, narrow, parallel-sided stems. The bases are rounded. The two specimens are respectively 52 mm. long by 30 and 34 mm. wide, and both are made of petrified wood. The blades have rounded shoulders and convex edges. The tip on one specimen is rounded.

Miscellaneous Parallel-sided Stem Points (2 specimens, Fig. 7, P)

Two petrified wood dart points have straight bases and parallel-sided stems. The larger of the two has a subtriangular blade with well defined shoulders and convex edges (Fig. 7, P), while the smaller has a narrow blade with poorly defined shoulders and straight edges.

DART POINT FRAGMENTS

Ten unidentifiable dart point bases and 43 dart point blades and tips were found during excavation of the Wolfshead Site. All but six of these were chipped from petrified wood.

Arrow Points

Twenty arrow point and arrow point fragments were found at the Wolfshead Site, all of them made from the locally available petrified wood and river pebbles. Except for one crude specimen with a contracting stem, all of the arrow points have expanding stems. Bases are usually straight, but some are slightly convex.

EXPANDING STEM FORMS

Friley Type

Seven of the 15 complete expanding stem arrow points have straight bases and prominent shoulders that either project laterally or recurve toward the distal end of the point. These features are characteristic of the *Friley* type as defined by Bell (1960: 46-47). On the basis of the differences in shoulder treatment, the *Friley* points were divided into two subgroups—those with recurved shoulders and those with laterally-projecting shoulders.

Friley points with recurved shoulders (5 specimens, Fig. 8, C-F). These arrow points have expanding stems (although some are almost parallel-sided) and reverse barbs. They are thin but—probably because of the poor chipping qualities of the stones used—are not well made. In all their attributes these points conform to the standard definition of the *Friley* type (Bell, 1960: 46-47).

Friley points with laterally-projecting shoulders (2 specimens, Fig. 8, A, B). Broad expanding stems, short blades, and prominent shoulders that project laterally at approximately right angles to the long axis of the blade are the distinguishing features of this form of the *Friley* type. Other attributes include concave blade edges and straight bases. The smaller of the two examples found at Wolfshead is 12 mm. long and 12 mm. wide, while the larger one is 19 mm. long and 13 mm. wide.

The two forms of *Friley*, while they appear to grade into one another, seem distinct enough to warrant separate description here. The significance of the variations noted above, however, cannot be accurately determined until other sites where *Friley* points occur have been analyzed.

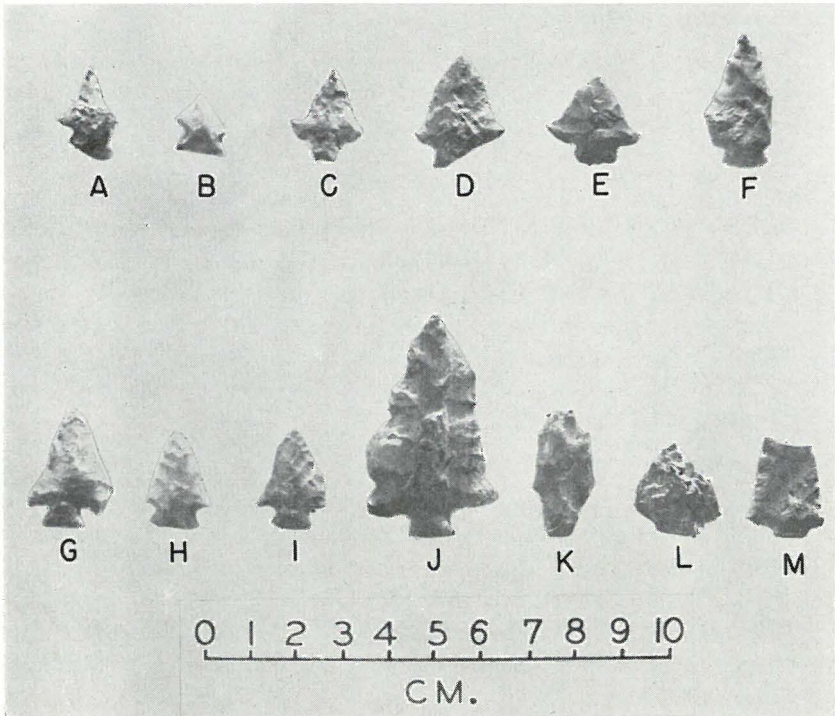


Fig. 8. Arrow Points. A, B, *Friley*, laterally-projecting shoulders. C-F, *Friley*, recurved shoulders. G-I, Expanding stem arrow points. J, Large arrow point. K, L, Miscellaneous arrow points. M, Arrow point fragment.

Miscellaneous Expanding Stem Arrow Points

In the upper zones were found five small arrow points (Fig. 8, G-I) that have expanding stems, flat to convex bases, prominent shoulders, and triangular blades with edges varying from slightly concave to slightly convex. These resemble the *Friley* type but do not have the recurved or laterally-projecting shoulders that distinguish *Friley* points. Length ranges from 21 to 26 mm.; width is 13 to 17 mm.

Two large specimens (Fig. 8, J) which were classified as arrow points could, on the basis of length and width, be grouped with the dart points. On the basis of thickness, blade form, and stem characteristics, however, they fit the arrow point category. Both of them have short, slightly expanded stems, straight bases, well-defined shoulders, and long subtriangular blades with straight to slightly convex edges. They were chipped from thin flakes of fine-grained petrified wood and measure, respectively, 47 to 37 mm. long by 28 and 17 mm. wide.

MISCELLANEOUS FORMS

Two crudely chipped arrow points (Fig. 8, K, L) are irregular in shape. Both are made from petrified wood. One has a short, broad blade and an unusually short stem with a straight, unworked base that retains the original nodular cortex. This specimen is 20 mm. long and 18 mm. wide. The other miscellaneous arrow point is long and narrow, measuring 27 mm. in length and 13 mm. in width. The stem is long and contracting and has a rounded base. The shoulders are poorly defined. The blade is subtriangular with a rounded tip and slightly convex edges.

ARROW POINT FRAGMENTS

Four fragments of arrow points were found that are too incomplete for accurate description. A typical example is shown in Figure 8 (M).

MISCELLANEOUS CHIPPED STONE ARTIFACTS

Knives

The knives, which were commonly manufactured of petrified wood, could be distinguished from the other artifacts at the Wolfshead Site by (1) the bifacial chipping on one or more edges, (2) by their relatively thin cross sections, and (3) by their lack of stems. Three basic knife shapes (triangular, quadrilateral, and leaf-shaped) were recognized, and, on the basis of morphological differences within the knife-shape categories, several subgroups were set up.

TRIANGULAR FORMS

Small Subtriangular Knives (5 specimens, Fig. 9, A, B)

These small knives, which have straight bases and subtriangular blades with convex edges, are short (29 to 41 mm. long) and narrow (21 to 26 mm. wide). One is made of a semi-translucent stone; the others are of fine-grained petrified wood.

Medium-sized Subtriangular Knives (13 specimens, Fig. 9, C-E)

These knives have relatively straight bases and subtriangular blades with strongly convex edges. Three of the thirteen specimens are chipped from local river pebbles. Occasionally the original cortex of a pebble adheres to the base or sides. In length, these forms average 42 mm., ranging from 36 to 48 mm., and in width they average 30 mm., varying from 36 to 34 mm.

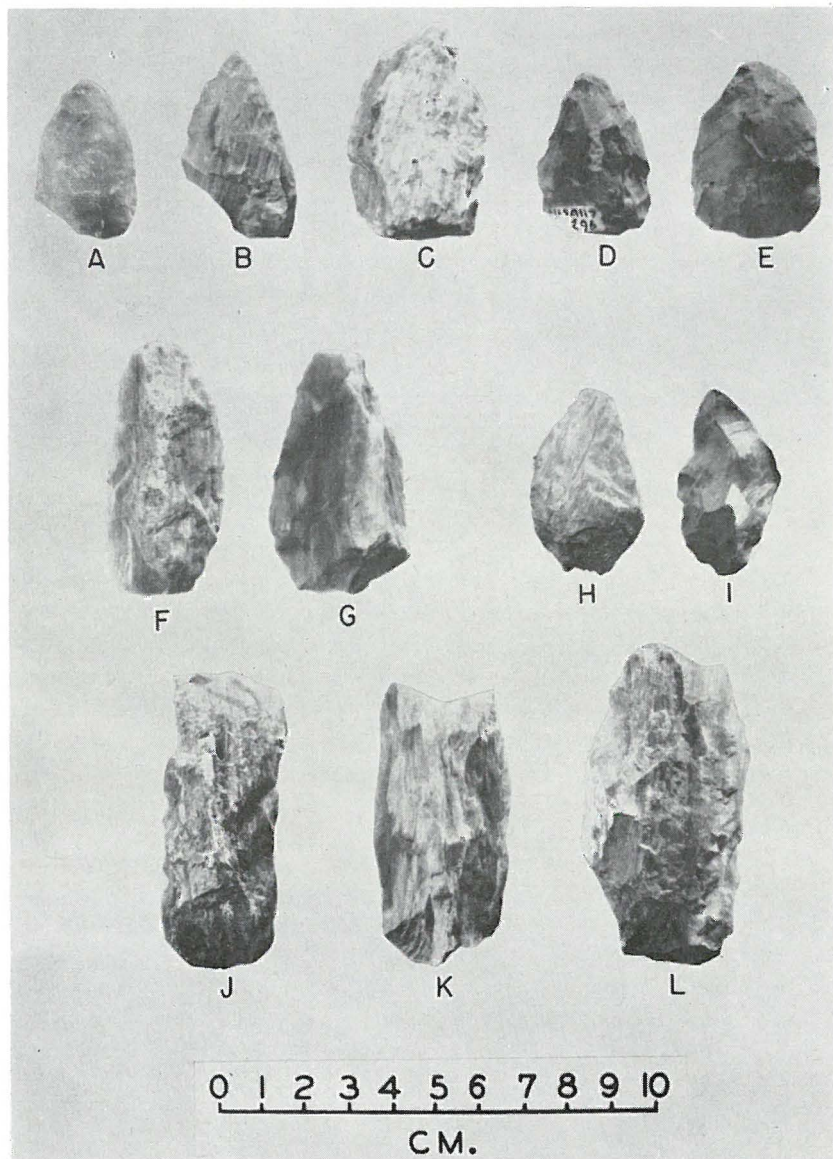


Fig. 9. Knives. A, B, Small subtriangular knives. C-E, Medium-sized subtriangular knives. F, G, Medium-sized slender knives. H, I, Medium-sized leaf-shaped knives with rounded bases. J-L, Thick, long knives.

Large Subtriangular Knife (1 specimen, Fig. 10, G)

This large knife is subtriangular in shape with strongly convex lateral edges and a slightly concave base. It is made of petrified wood and measures 59 mm. long, 41 mm. wide, and 12 mm. thick.

Quarter-oval Knives (3 specimens, Fig. 10, F)

This knife form has a straight base, from 28 to 41 mm. wide, and one straight edge which is 36 to 56 mm. in length. The other edge curves toward the tip which is blunted. In over-all shape, these knives resemble a quarter-section from an oval.

QUADRILATERAL FORMS

Rectangular One-edged Knives (12 specimens, Fig. 11, A-C)

The long rectangular shape, the distinctive cross section, and the chipping on only one edge are the principal characteristics of this knife form. Although most examples measure between 61 and 95 mm. in length (average, 71 mm.), one is exceptionally long (130 mm.). They are relatively narrow, ranging from 22 to 44 mm. in width, with an average of 33 mm. These knives have a narrow, triangular cross section with the cutting edge, the only edge which has been worked, representing the apex of the triangle and the back of the blade its base. Knives of this type, designated Type I blades, have been reported by Tunnell (1961: 130-131) in other Archaic sites in the area.

Rectangular Multi-edged Knives (14 specimens, Fig. 10, B-D)

These short rectangular knives are generally thin slabs of petrified wood which have been worked on two or three edges. Seven of them are worked on three edges, five are chipped on two (generally opposite) edges, and the remaining two specimens have only one sharpened edge. The latter two specimens differ from the rectangular one-edged knives in their shortness. These artifacts measure in length from 50 to 60 mm. with an average of 52 mm., excluding one long specimen which measures 87 mm. The 51 mm. width of this long specimen, however, falls within the 34 to 51 mm. width range (average 42 mm.) for the group.

Thick, Long Knives (9 specimens, Fig. 9, J-L)

This group of knives, made of petrified wood, is characterized by

long, relatively thick blades with parallel edges and blunted or rounded tips. The straight bases are often unmodified, consisting of the original cortex. These forms measure from 47 to 71 mm. long (average, 60 mm.), 27 to 42 mm. wide (average, 34 mm.), and 7 to 24 mm. thick (average, 16 mm.). These are probably variations of Tunnell's Type II blade (Tunnell, 1961: 131) which he describes for other Archaic sites in the McGee Bend Reservoir area.

Rhomboidal Knives (2 specimens, Fig. 10, H)

The two specimens classified as rhomboidal knives have been bifacially worked on three or more edges. The edges of the blades are of varying lengths with the maximum lengths being 45 and 64 mm., and the maximum widths measuring 41 and 50 mm., respectively. These knives are made from thin fragments of petrified wood.

LEAF-SHAPED FORMS

Medium-sized Leaf-shaped Knives With Rounded Bases (5 specimens, Fig. 9, H, I)

Five knives have leaf-shaped blades with rounded bases. The edges of the blades are strongly convex. Two of them, both made of local river pebbles, are thicker than most of the other knives from the site. Most of these artifacts are about 41 mm. long and 24 or 25 mm. wide.

Medium-sized Slender Knives (4 specimens, Fig. 9, F, G)

These medium-sized knives are long and narrow with convex edges and bases. The tips are rounded. They are from 52 to 56 mm. long and 26 to 31 mm. wide.

Pointed or Rounded Tip Knives (19 specimens, Fig. 11, D-F)

These knives are made from petrified wood and, while they vary considerably in size, they all have a similar shape. The slightly convex edges of the leaf-shaped blades taper to a rounded, or sometimes pointed, tip, while the bases vary from straight to convex. The lengths range from 48 to 102 mm., with an average of 69 mm., and the widths vary from 22 to 52 mm., with an average of 38 mm. This knife form conforms closely with the Type II blade form which Tunnell (1961: 131) has previously described.

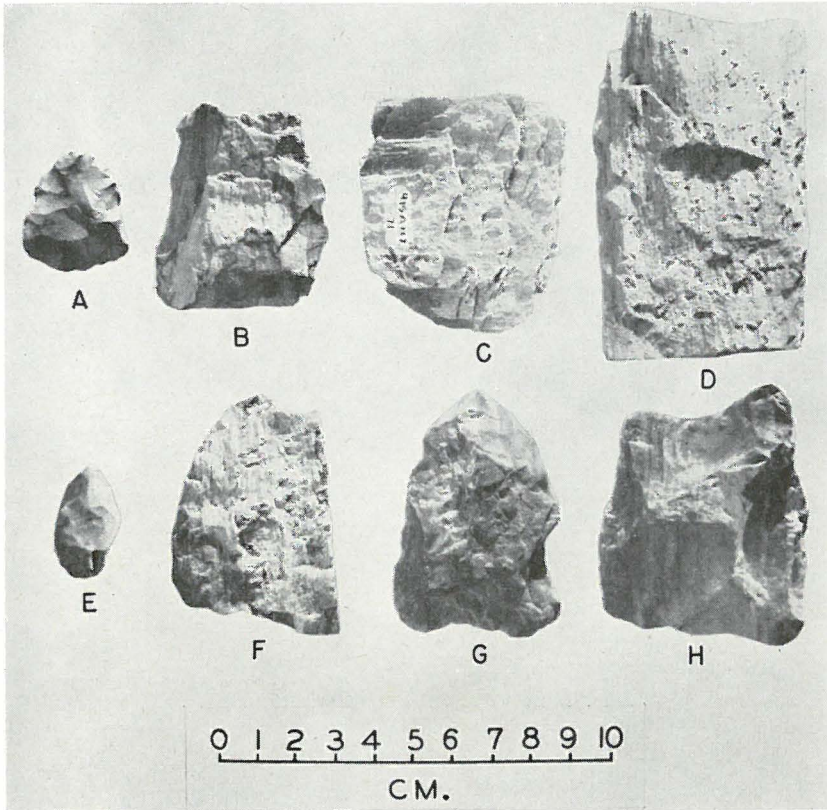


Fig. 10. Knives. A, E, Miscellaneous leaf-shaped knives. B-D, Rectangular multi-edged knives. F, Quarter-oval knife. G, Large subtriangular knife. H, Rhomboidal knife.

Miscellaneous Leaf-shaped Knives (3 specimens, Fig. 10, A, E)

Three knives could not be classified in the above categories. One is a short (27 mm.), narrow (16 mm.), leaf-shaped specimen, made from a nonlocal stone, and it has a rounded base and convex edges. Another knife has a subtriangular blade, which measures 30 mm. long by 26 mm. wide, a convex base, and convex edges. The third specimen, which is well made of petrified wood, is the basal section of a knife with a slightly concave base and slightly convex lateral edges.

Large Knife Fragments (28 specimens)

All of these fragmentary knife specimens are made of petrified wood.

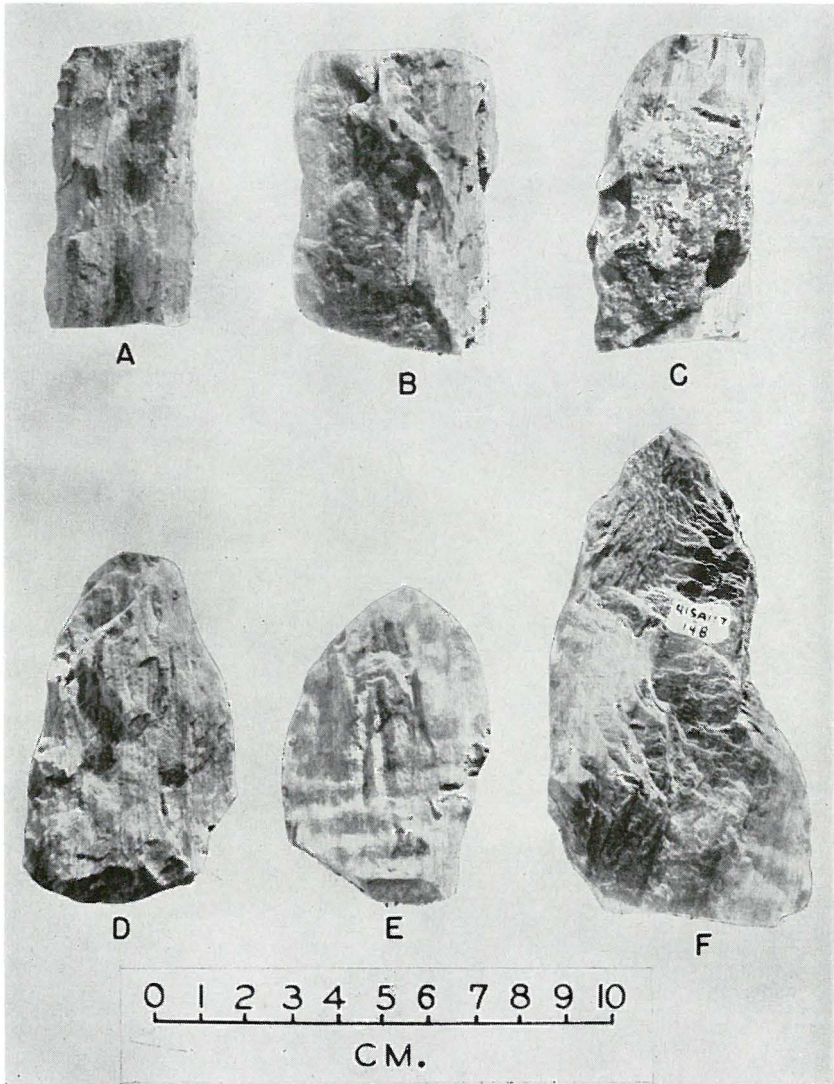


Fig. 11. Quadrilateral and Leaf-shaped Knives. A-C, Rectangular one-edged knives. D-F, Pointed or rounded tip knives.

They came from knives which had either rounded or straight bases and pointed or slightly rounded tips. Thirteen of the basal sections are rounded and seven are straight. The remaining eight fragments represent knife tips.

Small to Medium Knife Fragments (17 specimens)

Seventeen fragments of small to medium-sized knives were found at the Wolfshead Site. All are basal fragments. Three are from knives with straight bases while the others are from knives with rounded or convex bases.

Scrapers

At the Wolfshead Site, all of the scrapers recovered possess some characteristics in common. At least one face is relatively flat and most of the chipping is confined to the opposite face. Chipping is concentrated, generally on one edge, but occasionally on more than one edge. Most of the scrapers were made of petrified wood, although a few were made from local river pebbles.

Quadrilateral Scrapers (5 specimens, Fig. 12, F, G)

Two opposing edges of this scraper form are chipped to create the scraping edges, the other two edges being unworked. These scrapers are subrectangular in shape and are 28 to 35 mm. long and 32 to 39 mm. wide.

Snub-nose Scrapers (16 specimens, Fig. 12, A-E)

The most common form of scraper at the Wolfshead Site is a small, snub-nose scraper. The principal characteristic of this form is a steeply beveled edge at the bit end. The shape varies somewhat, but most specimens have a slight convex bit end from which convex lateral edges taper back to a rounded, or sometimes pointed, base. Seven of the snub-nose scrapers are made of petrified wood, seven were shaped from pebbles, and two were worked from sandstone. The more complete specimens in this group range in length from 19 to 40 mm. (average, 29 mm.) and vary in width from 12 to 25 mm. (average, 21 mm.).

Long Oval Scrapers (6 specimens, Fig. 12, H, I)

Most of these scrapers have triangular cross sections and long oval shapes. They vary in length from 40 to 54 mm. and in width from 17 to 25 mm. Usually, the edges have been chipped all around.

Cortex Scrapers (4 specimens, Fig. 12, J, K)

The presence of unaltered nodular cortex on the dorsal face is a diagnostic feature of these scrapers. All examples are flaked from river

pebbles and are subtriangular in shape. The chipping is confined to the lateral edges. The bases, which are unmodified, vary from straight to rounded. These scrapers all measure about 26 mm. long, except one which is 31 mm. long; width varies from 15 to 22 mm.

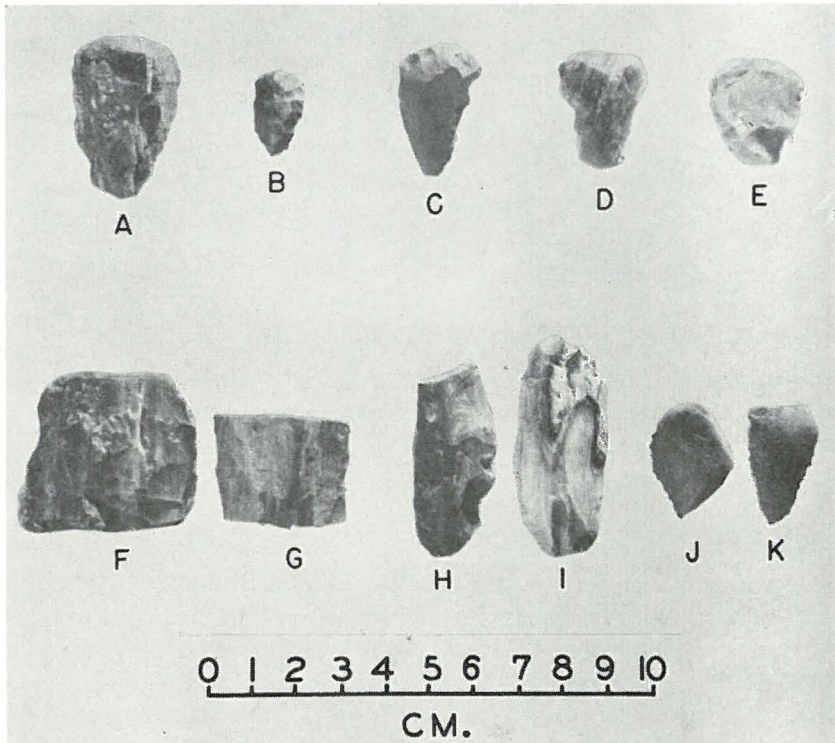


Fig. 12. Scrapers. A-E, Snub-nose scrapers. F, G, Quadrilateral scrapers. H, I, Long oval scrapers. J, K, Cortex scrapers.

D-shaped Scrapers (2 specimens, Fig. 13, D)

Two scrapers shaped like the letter "D" were recovered from the Wolfshead Site. One is 26 mm. wide and 34 mm. long while the other is 32 mm. wide and 39 mm. long.

Flake Scrapers (6 specimens, Fig. 13, B, C)

These flakes of petrified wood are unmodified except that one or more edges are lightly chipped. Probably these were sharp-edged flakes that were used without modification for scraping purposes, the

chipped edges having resulted from wear during the scraping process. They vary considerably in shape and size.

Two-edged Scraper (1 specimen, Fig. 13, A)

A rectangular scraper, similar to the quadrilateral scrapers except for length, is chipped on two opposing edges, the other two edges being unmodified. It measures 52 mm. long by 28 mm. wide. This specimen resembles forms found at the Poverty Point Site (Ford and Webb, 1956: Fig. 36, h-j). It differs, however, in that it is slightly smaller and unifacially worked. Since the Wolfshead scraper is made of a poor quality of petrified wood, it is not possible to detect grinding like is present on the Poverty Point specimens.

Albany Spokeshave (2 specimens, Fig. 13, H)

Two spokeshaves, apparently reworked from projectile points, conform to Webb's *Albany* type, subtype II (Webb, 1946: 10-11). They are chipped from one face along the left side of the blade (basal end oriented downward) so as to create a strongly beveled edge. These artifacts, both made of petrified wood, are side-notched; the base of one is slightly convex while the other is concave. One specimen measures 37 mm. long (the other is too fragmentary to determine its length); they are 20 mm. and 22 mm. in width; and both are 6 mm. in thickness.

Spokeshave (1 specimen, Fig. 13, G)

One piece of petrified wood which has a small concave section worked into one edge could have served as a spokeshave.

Shaft Smoother (2 specimens, Fig. 13, F)

Two pieces of petrified wood have one strongly concave, bifacial edge. These implements are subtriangular in shape, the tips are rounded, the bases are straight, and the edges opposite the concave side are strongly convex. Both specimens measure 46 mm. long and 37 mm. wide.

Chisel (1 specimen, Fig. 13, E)

An artifact made of petrified wood has a steeply beveled, chisel-like bit at one end. The rest of the stone is unworked. One side is flat, the other is ridged. This specimen is 91 mm. long and 41 mm. wide.

Bifaces

Small Subcircular Bifaces (15 specimens, Fig. 14, D, E)

Several small, bifacially-chipped artifacts, circular to elliptical in shape, were found. All of them are made of petrified wood. Diameters vary from 27 to 54 mm. and thickness ranges from 7 to 14 mm.

Large Subcircular Bifaces (4 specimens, Fig. 14, F)

Several thick, subcircular bifaces, all made of petrified wood, were recovered from the Wolfshead Site. These artifacts are 16 to 19 mm. in thickness, and diameters range from 36 to 56 mm.

Drills

Two elongated chipped stone artifacts are classified as drills. These objects have long, narrow, ensiform blades with rounded tips and straight or slightly convex bases (Fig. 14, A, B). The larger specimen, which is made of petrified wood, measures 55 mm. in length and 11 mm. in width, while the shorter one—which is made of a river pebble and has a twist to the blade—is 32 mm. long and 12 mm. wide.

Choppers

Four small choppers or cores (Fig. 14, C) were fashioned from pebbles. One end of the pebble is bifacially worked, the opposite end being unworked and retaining the unmodified cortex. The largest specimen is 58 mm. long, and the shortest is 42 mm. long. These forms, judging from the published descriptions, are the same as Tunnell's blade Type V (Tunnell, 1961: 133).

Hand Ax

A large ovoid-shaped hand ax, (Fig. 16, A) made of petrified wood has been worked bifacially on three edges. The remaining edge is unifacially worked and part of the unworked face is still covered by the original nodular cortex. The edge opposite the unifacially worked edge is not sharp and appears to have been battered. This specimen is 103 mm. long, 84 mm. wide, and 32 mm. thick.

Large Chipped Stone Objects

These items, frequently large flakes of petrified wood, are generally

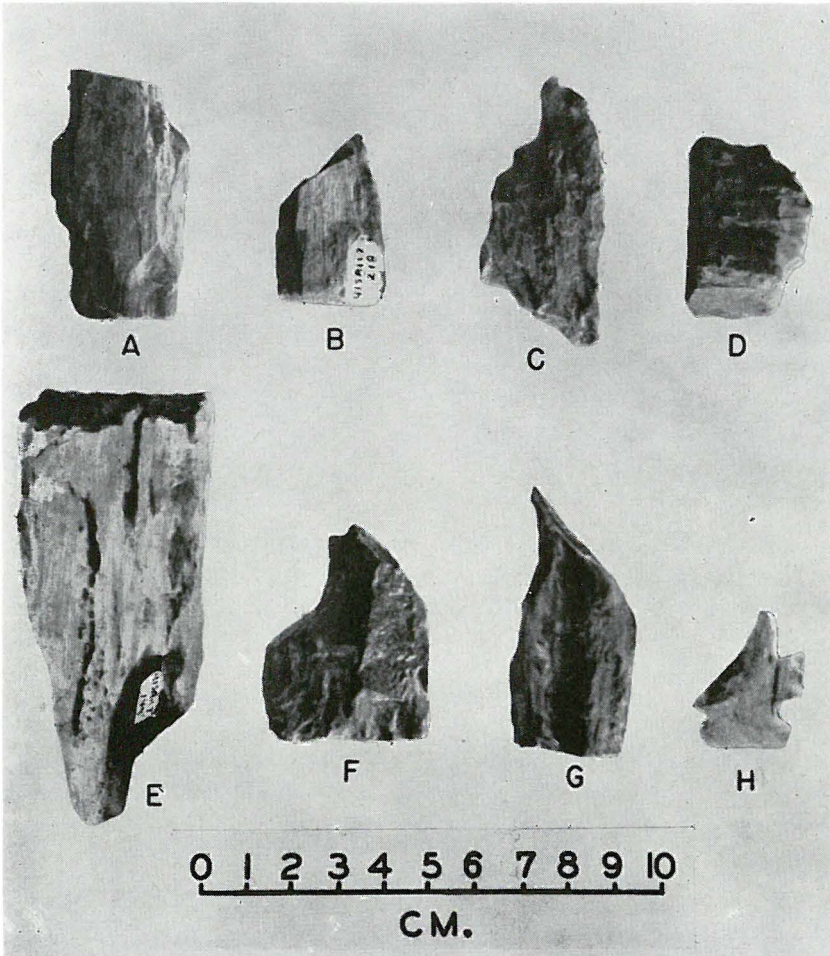


Fig. 13. Scrapers. A, Two-edged scraper. B, C, Flake scrapers. D, D-shaped scraper. E, Chisel. F, Shaft smoother. G, Spokeshave. H, Albany spokeshave.

chipped bifacially on one or more edges. The 12 specimens have irregular shapes.

Small Chipped Stone Objects

The varied size and shape of these small chipped stone objects prevent a detailed description of the group. They are similar, except in size, to the large chipped stone objects described above, and all are made of flakes of fossilized wood. Twelve examples were found.

PECKED OR GROUND STONE OBJECTS

SHAFT POLISHER

This sandstone specimen (Fig. 15, A), which is 72 mm. long, 50 mm. wide, and 25 mm. thick, has a single long groove which suggests its use as a shaft polisher.

BOATSTONE

A boatstone fragment (Fig. 15, B, C) was apparently associated with the side-notched dart points at the Wolfshead Site. The end as well as the back of this specimen is ground flat (Fig. 15, C) and the interior (Fig. 15, B) is hollowed out. The entire surface of the specimen is well smoothed.

GRINDING SLAB

A fragment of a small sandstone grinding slab has a depression on one surface. The edges of the depression are stained with red ochre, suggesting that this was used for grinding pigment.

SMOOTHING SLAB

An exfoliated section of a sandstone boulder appears to have been utilized as a smoothing or grinding implement. It is thin and curved; one side is smooth, the other is rough. Some of the edges of this specimen are rounded through use, but others are angular and unworn.

HANDSTONE

An oval-shaped handstone used in grinding is smoothed on one face and is wedge-shaped in cross section. This specimen is 114 mm. long and 77 mm. wide; it is 48 mm. thick at one edge and 31 mm. thick at the other. Another handstone (Fig. 16, B) is circular in shape and has a slight pit in one surface. This specimen is 94 mm. in diameter and 35 mm. thick.

PITTED STONES

Three pitted-stones—one made of hematite, two of sandstone—were found. The hematite specimen has a very slight pit on one side. One of the sandstone specimens is the pitted handstone described above; the other is a sandstone slab, 167 mm. long, 86 mm. wide and 50 mm.

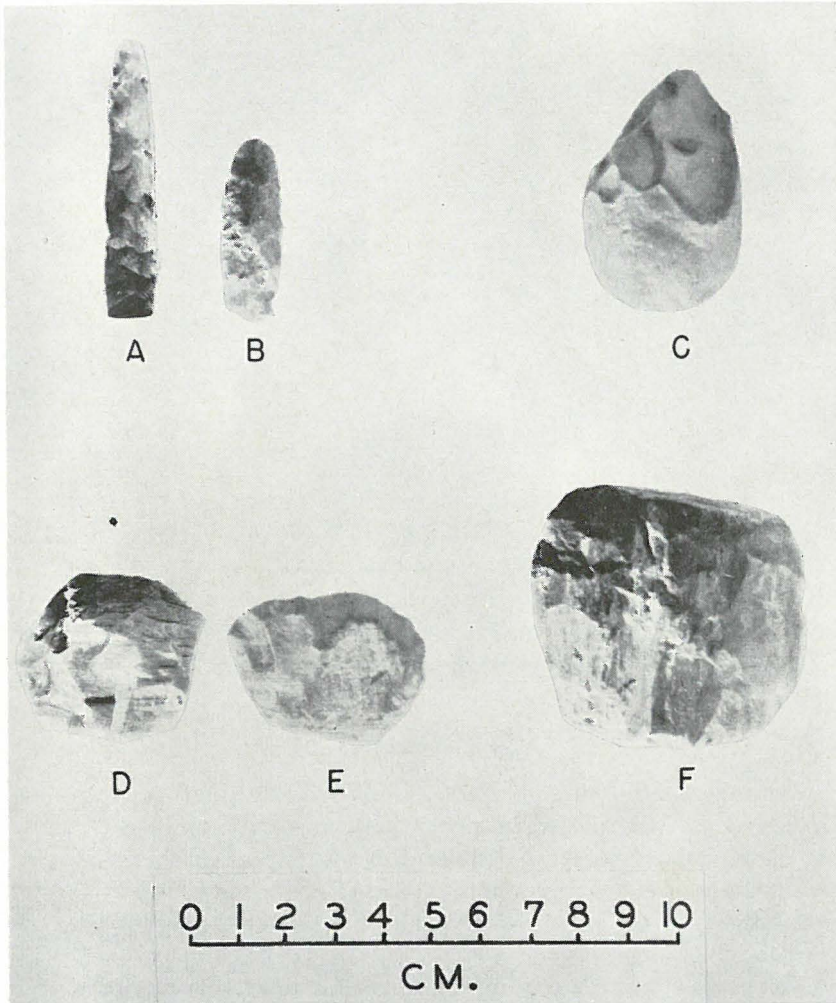


Fig. 14. Drills, Choppers, and Bifaces. A, B, Drills. C, Chopper. D, E, Small bifaces. F, Large subcircular biface.

thick, which has one deep pit and one shallow pit on one side plus a shallow pit on the opposite side.

HAMMERSTONE

An elongated chunk of petrified wood has been battered and pecked at one end, indicating use as a hammer.

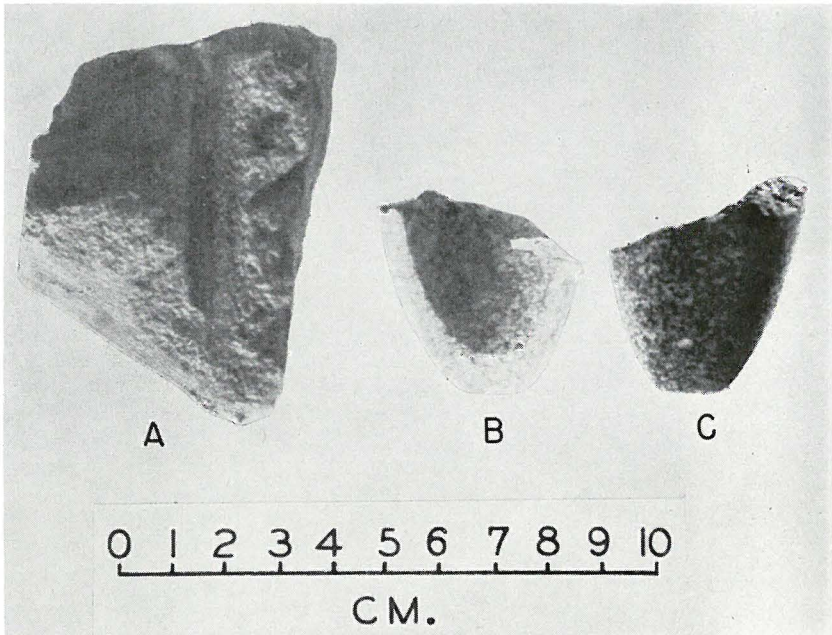


Fig. 15. Shaft Polisher and Boatstone Fragment. A, Shaft polisher. B-C, Boatstone fragment.

POTTERY

Surface materials found at the Wolfshead Site prior to excavation suggested that the site was a pre-pottery, pre-arrow point site; however, excavations soon revealed that this was not the case. Instead, pottery comprised the most numerous class of artifacts (539 sherds) and, in addition, arrow points were present, although not abundant (20 specimens).

The pottery was divided, on the basis of temper, into two relatively large groups and one small group. The largest group, comprising 439 sherds, is sand-tempered; the next largest group, consisting of 91 sherds, is tempered with both clay-and-sand. Sherds of the third group are tempered with clay-bone, sand, and/or other substances.

Sand-Tempered Ware

PASTE AND SURFACE FINISH

Sand, the most frequently used tempering agent at the Wolfshead Site, is so abundant in some of these sherds that they feel gritty and

are easily abraded when rubbed between the fingers. Even when carefully handled, part of the surface sometimes sloughs off. Among the sand-tempered sherds, 270 have a dark gray to black paste, 129 have a light yellow-brown or reddish-brown color, and 40 are intermediate between those two color groups. Distribution studies indicate that differences in paste color are not of chronological significance.

METHOD OF MANUFACTURE

Fractures along coil lines indicate that this pottery was made by the coiling technique.

VESSEL FORM

Bases

Six small base sherds of the sand-tempered ware reveal that the bases were convex and thicker than the vessel wall. At other sites in the McGee Bend area, both convex and conoidal bases have been found for this ware, as well as an occasional flat base. Conoidal and flat bases, however, are absent in the sample from the Wolfshead Site.

Rims and lips

The 26 sand-tempered rim sherds suggest three basic vessel forms. One form, indicated by eight sherds, has an orifice slightly smaller than the maximum diameter of the vessel and a rim that slants inward slightly (Fig. 17, B). Another form, indicated by four sherds, has a vertical or slightly flared rim, suggesting that the diameter of the vessel was greatest at the orifice (Fig. 17, A). The third vessel form, represented by three sherds, has a recurved shape with a very short rim and a rounded shoulder (Fig. 17, C). Eleven of the rim sherds are so small they could not be grouped with any of the above forms.

Lips are generally rounded to sharp, although one sherd has a flattened lip. Two of the sherds with rounded lips have, parallel to the lip, a slight exterior ridge which was created by smoothing of the lip area.

DECORATION

Two rim sherds and three small body sherds are decorated. On all of them the designs are incomplete and only the techniques of decoration could be determined. The smaller rim sherd has incised lines immediately below and parallel to the rounded lip. The other rim sherd

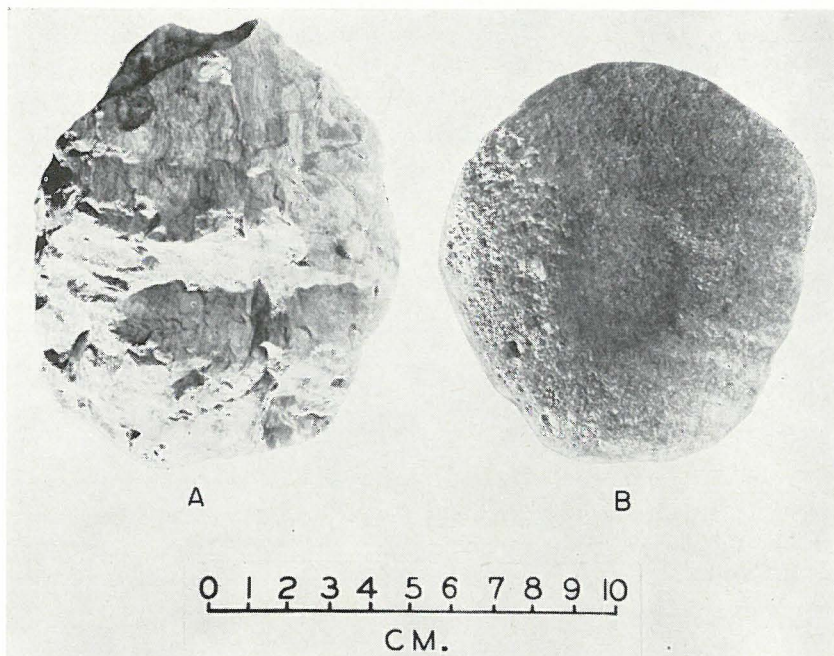


Fig. 16. Hand Ax and Pitted Handstone. A, Hand ax. B, Pitted handstone.

(Fig. 18, A) has an incised line partially filled with punctations. Concentrated within the upper and lower portions of the incised element, these punctations were made with a dentate implement or a small, sharply pointed stick. One of the body sherds may be from the same, or a similar, vessel since it is decorated in the same manner as the rim sherds. The design and decoration technique on these sherds suggest a relationship with the *Marksville Stamped* type of the lower Mississippi valley (Ford and Willey, 1940: 65-74), but the temper, the rim form, and the surface finish are unlike that type.

Another incised body sherd has a design which consists of a series of closely spaced, shallowly incised, right oblique lines (slanting from lower left to upper right) across which are deeply incised, more widely spaced, left oblique lines. This creates a crossed diagonal, grid-like pattern.

The other decorated body sherd has three small hollow reed punctations arranged in a line, but the complete design cannot be reconstructed from the small sherd.

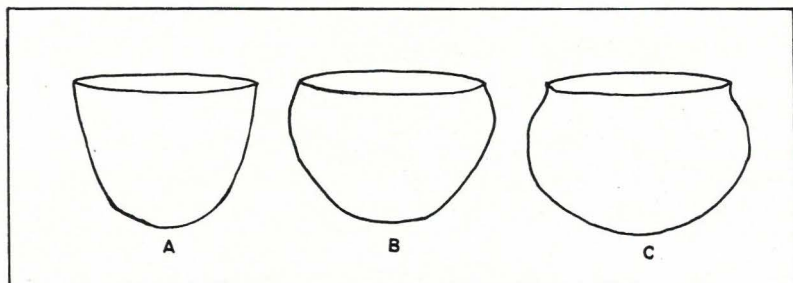


Fig. 17. Hypothetical reconstruction of sand-tempered vessel shapes at the Wolfshead Site.

MISCELLANEOUS

Crack-lacing holes are present on two sherds. One sharply curved sherd which is tapered in cross section may be the bottom of a pipe bowl, or possibly it is part of a conoidal vessel base.

DISCUSSION

Sand-tempered pottery is apparently the earliest ware in the McGee Bend Reservoir (Tunnell, 1961; see also Table 1 and 2 herein). The present data suggest that it precedes both contracting stem dart points and arrow points in this part of Texas. At the Runnels 1, Runnels 2, and Sawmill sites, a larger percentage of sand-tempered sherds than clay-tempered sherds was found in the lower levels, while contracting stem dart points (*Gary* type) were concentrated in the upper levels (Tunnell, 1961).

At the Davis Mound, not far west of the Wolfshead Site, sand-tempered pottery was found predominantly in Phase 1 of the mound (Newell and Krieger, 1949: 131). The sand-tempered pottery at the Davis Site is similar in paste and vessel form to the sherds from the Wolfshead Site (Edward B. Jelks, personal communication). The percentage of decorated to undecorated sherds, however, is much higher at the Davis Site where 33.3 per cent of the sherds are decorated and 66.7 per cent are plain. A vessel count at the Davis Site, however, indicates that only 16.6 per cent of the individual sand-tempered vessels were decorated. At the Wolfshead Site, on the other hand, only 1 per cent of the sand-tempered sherds are decorated. A vessel count was not attempted at Wolfshead.

On the Texas coast, the *Goose Creek Plain* pottery type (Suhm, Krieger, and Jelks, 1954: 378-379) bears some similarity to the sand-

tempered ware from the Wolfshead Site. *Goose Creek Plain* has sand and also sand-and-clay used as tempering agents; in addition, some vessel shapes are similar to those of the sand-tempered ware at McGee Bend.

Other sand-tempered types occur early in Louisiana and in the lower Mississippi valley, but most of these forms bear little resemblance to the sand-tempered pottery from Wolfshead.

Sand-and-Clay Tempered Wares

PASTE AND SURFACE FINISH

Of the 539 sherds recovered from the Wolfshead Site, 91 or 17 per cent are tempered with both sand and clay. Of these, 77 are undecorated body sherds, nine are plain rim sherds, two are base sherds, and three sherds, one of which is a rim, are decorated. While some of these sherds have large amounts of sand and others have large amounts of clay, usually both tempering agents occur in more or less equal proportions.

VESSEL FORM

Bases

Bases were either flat discs or were rounded convexly. When rounded, the vessel wall merged with the base so that the area of juncture was not so clearly demarcated as when the base was flat.

Rims and Lips

The predominantly plain rims are not usually differentiated from the body of the vessel. They may be straight, incurving, or slightly outflaring. The lips are generally rounded or slightly flattened, but some taper to a sharp lip while others are fully flattened.

In general, vessel shapes as indicated by the sherds featured straight to slightly flaring walls with either a slightly convex or disc-shaped base.

DECORATION

A decorated rim sherd has a set of three parallel, incised lines which originate a short distance below the lip and extend down at a slight left oblique angle. The blank area to the side of the three lines suggests that they are part of a repetitive design which consisted of alternate

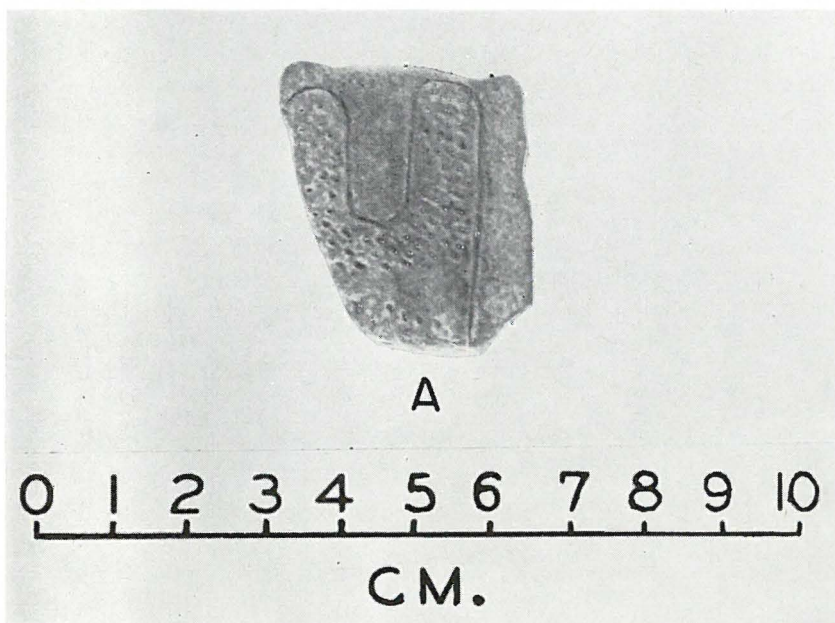


Fig. 18. Decorated Rim Sherd. A, Decorated rim sherd, sand-tempered.

sets of oblique lines spaced around the rim of the vessel. Two other decorated sherds have only fragments of lines (one engraved, the other incised) which are too incomplete for meaningful description.

Other Tempering Agents

Two small sherds have a combination of bone, clay, and sand-temper. Two other sherds are tempered with a mixture of hematite, sand, clay, and a type of material (vegetable fiber?) which burned out during the firing, leaving small holes and channels in the paste. Five sherds are tempered with materials which have not been fully determined. All contain a small amount of sand as well as minute rounded particles of an unidentified dark substance. One, in addition, contains small particles of a yellow material, while another contains larger fragments of an unknown dark substance.

DIVISIONS OF THE SITE

A horizontal study of the temper groups indicated that the sherds were not randomly distributed throughout the site. For example, al-

though clay-and-sand tempered sherds were found in all sections of the site, they show a distinct concentration in the southern section. There they comprise 32 per cent of all the sherds, whereas in the northern area they account for only 11 per cent (Fig. 3). This distribution pattern, by itself, might appear insignificant, but there are similar statistical differences in distribution for other classes of artifacts. Only three arrow points and arrow point fragments, for example, were recovered in the northern section of the site, while in the southern section, 11 arrow points and arrow point fragments were found. On the basis of these differences, the site was separated into a southern and northern section for analysis.

SOUTHERN SECTION

In the southern section, approximately 25 excavation units—consisting of 2.5×5 , 2.5×10 , and 5×5 ft. units—were removed to a depth varying from 1.0 to 3.0 ft. In this section the relatively thick deposit of cultural materials provided a fairly good opportunity for demonstrable vertical stratigraphy, and some stratigraphic differences were, in fact, detected. However, the sample is small and the data are meager, not only for this area, but for the site as a whole, and therefore the opinions offered are necessarily conjectural and tentative rather than conclusive.

Within the southern section four soil zones were observed. The upper zone was the humus-stained plow zone which varied in thickness from 0 to 0.5 ft. and measured about 0.4 ft. thick. Below this zone was a tan sandy zone ranging from 0.4 to 1.1 ft. in thickness. This sandy zone was superimposed on a red-orange clay which lay 1.0 to 2.0 ft. below the ground surface. The excavations generally penetrated only the upper 0.1 ft. of this clay zone, although in one excavation unit, 1.5 ft. of this zone was removed. Underlying the red-orange soil at approximately four to five ft. below the surface was a yellowish clay. This latter zone and the lower portion of the red-orange clay were sterile of cultural debris.

Discussion of the Artifacts

The artifacts from the southern section of the site include two principal classes—pottery and projectile points—together with a number of miscellaneous stone artifacts.

POTTERY

Both the sand-tempered and the sand-and-clay tempered sherds were

concentrated in the second and third levels of the site (Table I). There are no significant vertical differences between the two temper groups since they maintain approximately the same frequency ratio in each level (Fig. 19, A, B).

TABLE 1
Vertical distribution of sherds in the southern section

	<i>Level 1</i> 0-0.5	<i>Level 2</i> 0.5-1.0	<i>Level 3</i> 1.0-1.5	<i>Level 4</i> 1.5-2.0
Sand-temper				
body	13	31	29	2
bases	1	1	1	..
rims	1	2	1	..
decorated	1	1	..	..
Clay-sand				
body	4	16	12	..
bases	1	..	..	..
rims	1	3	3	1
Bone-and-clay	..	..	1	..
Totals	22	54	47	3

PROJECTILE POINTS

While the sample was small, the vertical distribution of projectile points provided the best suggestion of a culture sequence at the Wolfshead Site (Fig. 20). The earliest horizon—represented primarily in levels four and five (Table 2)—has 11 projectile points of which eight (disregarding fragments) are either of the *San Patrice* type or are lanceolate dart points with concave bases.

Following the earliest horizon, and perhaps overlapping it to some extent, is the side-notched and expanding stem period. Evidence suggestive of this period was found in level three (Table 2) where the majority of the dart points have side notches or expanding stems.

After the side-notched and expanding stem dart point occupation, there is a sudden increase of contracting stem dart points (primarily the *Gary* type) and expanding stem arrow points (primarily the *Friley* type) in the upper two levels (Fig. 20).

The position of the pottery with respect to the projectile point sequence poses a problem. Judging from its vertical distribution, pottery first appeared in quantity in level three, and remained popular during the *Gary* point and expanded stem arrow point era (Tables 1, 2). This

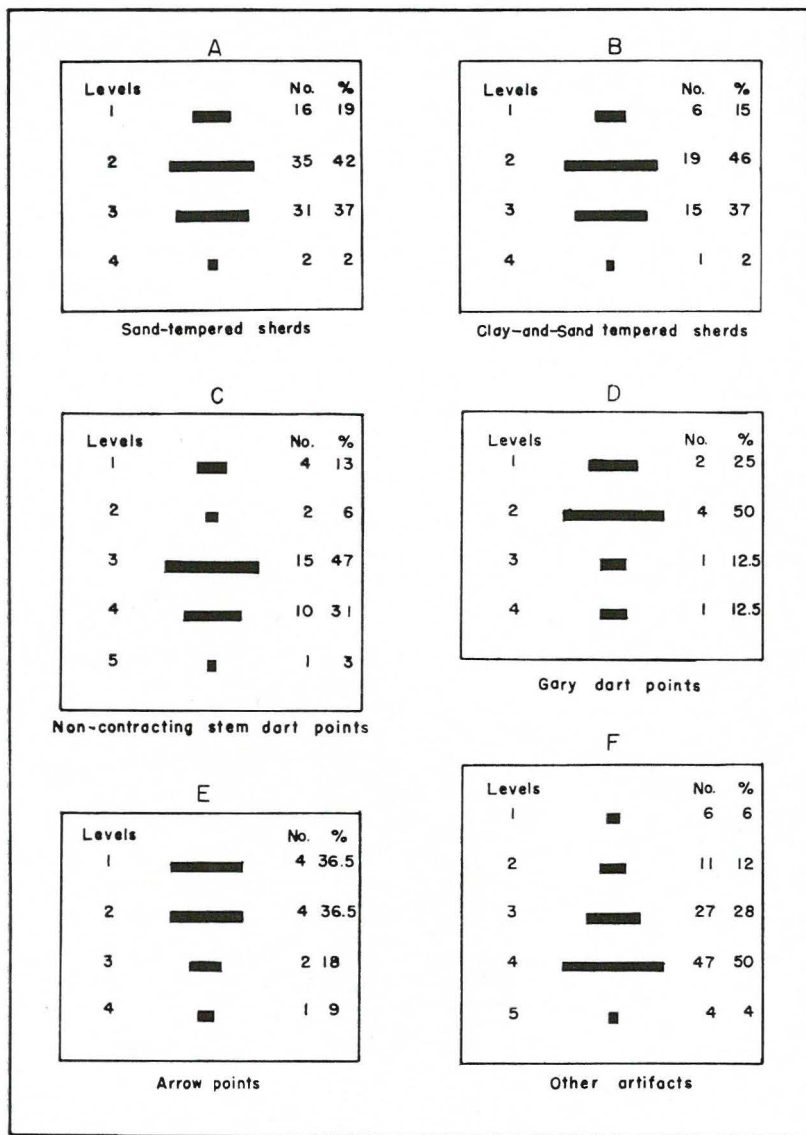


Fig. 19. Artifact distribution graphs for the southern section.

tends to substantiate the evidence from other sites at McGee Bend where sand-tempered pottery occurs below the clay and/or bone tempered pottery with noncontracting stem dart points (Tunnell,

TABLE 2

Vertical distribution of projectile points in the southern section

	0-0.5 <i>Level 1</i>	0.5-1.0 <i>Level 2</i>	1.0-1.5 <i>Level 3</i>	1.5-2.0 <i>Level 4</i>	2.0-2.5 <i>Level 5</i>
Dart points					
<i>San Patrice</i>					
<i>st. johns</i>	2	..	3	4	1
<i>hope</i>	..	1	..	1	..
Concave-base	..	..	1	2	..
Corner-notched					
straight base	..	1	2	1	..
crude	1	..	..	..	..
oblique	..	..	3	..	..
slightly expanded stems with broad base	..	..	1	..	..
miscellaneous expanded	..	..	1	2	..
Side-notched	1	..	2	..	..
<i>Gary</i>					
slight shoulders	1	1	1	..	..
prominent shoulders	1	2	..	1	..
wide	..	1	..	..	..
Short stem, rounded					
base	..	..	1	..	..
Miscellaneous					
parallel-sided	..	..	1	..	..
Fragments	4	2	7	6	..
Arrow points					
<i>Friley</i>					
recurved shoulders	..	2	1	..	..
laterally-projecting shoulders	1	..	..	..	..
Miscellaneous					
expanding stems	2	..	1	..	..
Large arrow points	1	1	..	..	..
Miscellaneous	..	1	..	..	..
Fragments	..	..	..	1	..
Totals	14	12	25	18	1

1961). In these other sites, *Gary* type dart points are concentrated in the upper levels with the clay and/or bone tempered pottery (Tunnell, 1961). These data suggest, like the Wolfshead data, that the sand-tempered pottery preceded the *Gary* dart points in the area.

Gary dart points, however, occur at the Wolfshead Site without the clay and/or bone tempered pottery. These few points could be part of the debris from later temporary occupations of the site by hunting parties from sedentary agricultural villages where the clay and/or bone tempered pottery was made. Through time this debris may have become mixed with the materials from the earlier occupations. Or another interpretation, the *Gary* dart points could have been introduced into the area before the manufacture of sand-tempered pottery was entirely abandoned and before the clay and/or bone tempered pottery was in use. Our present data do not favor one interpretation more than the other.

MISCELLANEOUS STONE ARTIFACTS

Since the southern section of the site can be divided on the basis of the projectile points into three general time periods, the vertical distribution of the other stone artifacts found there was examined to determine if any tool types seem to correlate with specific projectile point periods. Over 50 per cent of all the stone artifacts other than the projectile points were found in levels four and five, which suggests that the site was most intensively occupied during the earliest period (Table 3, Fig. 19). Some tool forms occurred exclusively in these lower levels, while others tended to be concentrated there. For example: the snub-nose scrapers and the cortex scrapers were concentrated in level four. In addition the D-shaped scrapers, two-edged scraper, flake scrapers, chisel, and all the bifaces are found only in the two lowest levels.

The knife forms, for the most part, are about equally divided between levels three and four, no knife form being exclusively associated with the early occupation.

Exclusive of projectile points, 28 per cent of the stone artifacts were found in the third level—the side-notched, expanding stem dart point zone. A few artifact forms are found only in, or are concentrated in, this level. These include the rectangular, multi-edged knife, the shaft smoother, the chopper, the hand ax, and the *Albany* spokeshave. It is not surprising that the *Albany* spokeshave occurs in this horizon, since it too has a side-notched stem like the dart points of this period.

In levels one and two (characterized by *Gary* dart points and arrow points) only 18 per cent of the miscellaneous stone artifacts were located, the only exclusive forms being the rectangular, one-edged knife and the quadrilateral scraper.

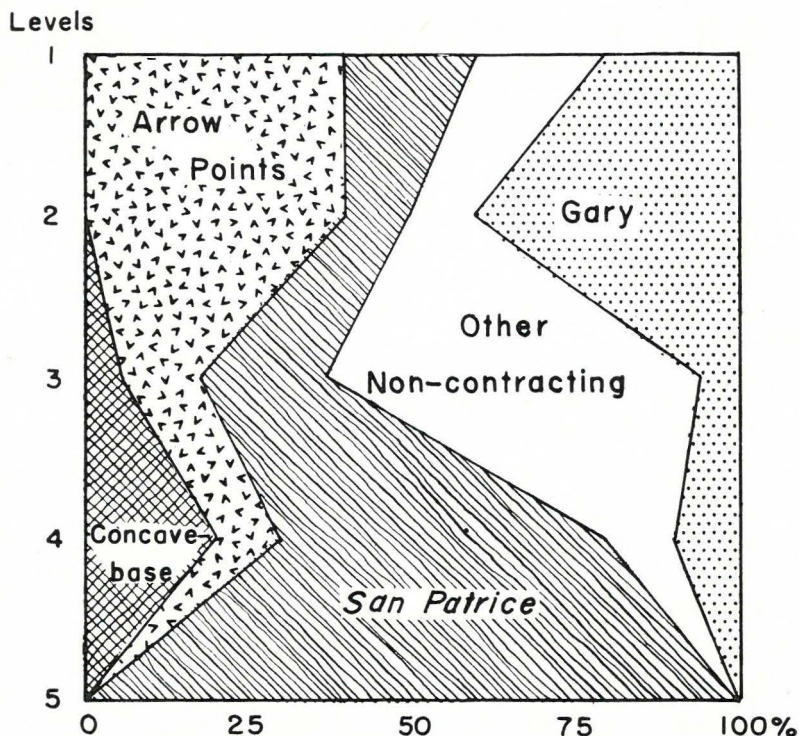


Fig. 20. Comparative relationship of projectile points in the southern section.

NORTHERN SECTION

Evidence from the thin deposits in the northern section of the site supports the sequence found in the southern section. In the northern section, about 40 units were excavated to a depth of 0.5 to 1.5 ft., with a majority of them being excavated to the maximum depth. The depths were delimited by the red-orange clay, the upper 0.1 ft. of which was removed in the excavations. Above the red-orange clay is the tan sandy zone and above this is the plow zone. This soil profile is the same as that in the southern section except that the excavations were not carried deep enough to encounter the basal yellow clay.

Discussion of the Artifacts

The two principal artifact classes in the northern section are, again, pottery and projectile points. As previously mentioned, the pottery and projectile points in this section differ slightly from those in the

TABLE 3

Vertical distribution of miscellaneous stone artifacts in the southern section

	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>	<i>Level 5</i>
Knives					
Triangular					
subtriangular,					
small	..	1	..	1	..
subtriangular,					
medium	1	..	1	1	2
quarter-oval	1	..	1	..	..
Quadrilateral forms					
rectangular,					
one-edged	..	1	..	..	..
rectangular,					
multi-edged	..	..	5	2	..
thick, long	..	..	1	2	..
Leaf-shaped forms					
pointed or rounded					
tips	..	2	1	3	1
slender	..	..	1	1	..
Fragments					
large	..	..	7	6	..
small	..	3	1	3	..
Scrapers					
quadrilateral	..	1	..	..	..
snub-nose	..	1	..	6	1
<i>Albany</i> spokeshave	..	..	1	..	..
long oval	..	..	1	1	..
cortex	..	1	..	3	..
D-shaped	..	..	..	1	..
two-edged	..	..	..	1	..
flake scrapers	..	..	..	2	..
shaft smoother	..	..	1	..	..
chisel	..	..	..	1	..
Bifaces					
small	..	..	..	4	..
large	..	..	..	2	..
Choppers	..	..	2	..	..
Hand ax	..	..	1	..	..
Miscellaneous chipped					
large	..	1	1	3	..
small	2	..	..	3	..
Grinding slab	..	..	..	1	..
Pitted stones	2	..	1	..	..
Hammerstone	..	..	1	..	..
Totals	6	11	27	47	4

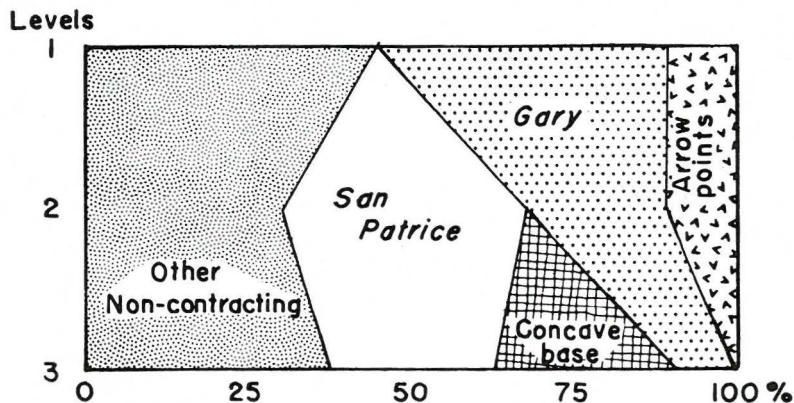


Fig. 21. Comparative relationship of projectile points in the northern section.

southern section in that clay-and-sand tempered sherds and arrow points are not as numerous.

POTTERY

The sherds in the northern section of the site were largely concentrated in the second level (187 sherds) but a large number (88) occurred in the first level, and there were a few (26) in the third level (Table 4). Again there are no appreciable vertical differences between the temper groups (Fig. 22).

TABLE 4
Vertical distribution of sherds in the northern section

<i>Temper group</i>	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
Sand			
body	67	148	23
bases	3	..	..
rims	6	8	..
decorated	..	4	..
Clay-and-sand			
body	12	18	2
rim	..	1	..
base	..	1	..
decorated	..	1	..
Bone-and-clay	..	1	..
Sand, clay, hematite	..	2	..
Undetermined	..	3	1
Totals	88	187	26

PROJECTILE POINTS

The shallow deposits in the northern section yielded materials which suggest the same cultural sequence found in the southern section. For example, the concave base, lanceolate points as well as a *Scottsbluff*-like point occurred only in the third or deepest level of the area. In this level and extending up into the second one were *San Patrice* points and corner-notched dart points (Table 5). *Gary* and side-notched dart points were found also in the second level, but they were found in the first level too. The data for the northern section,

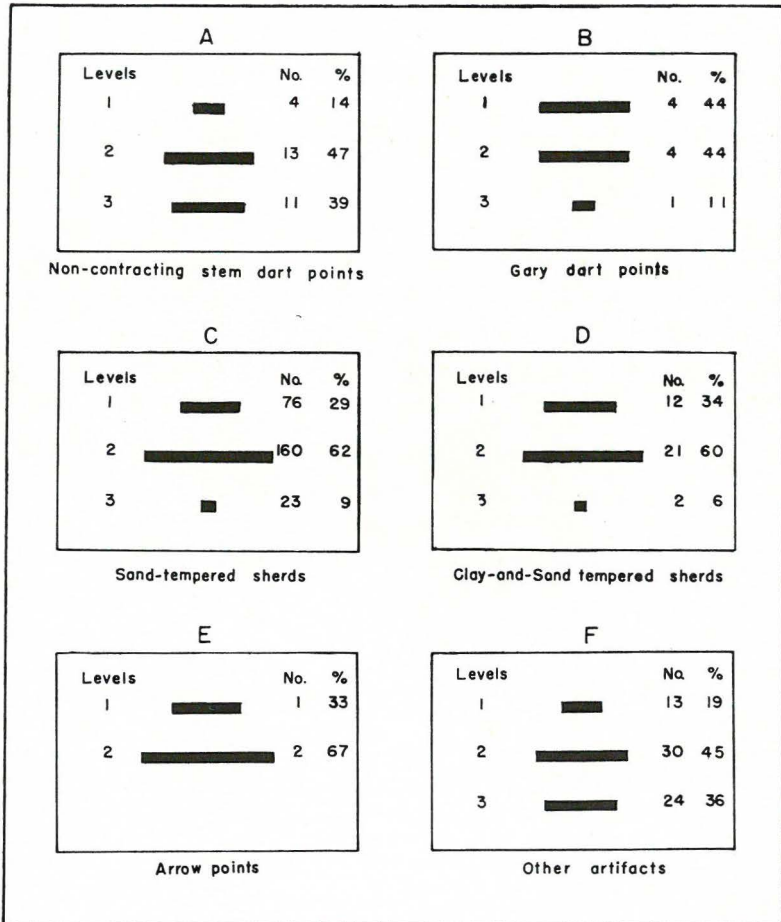


Fig. 22. Artifact distribution graphs for the northern section.

when compared with the southern section, suggest that the sequence is mixed and compressed, especially in the middle or second level.

Only two complete arrow points and one arrow point fragment were found in the northern section, all in the upper levels.

MISCELLANEOUS STONE ARTIFACTS

Occasionally a particular form of artifact was concentrated in the upper or the lower portion of the area, and some forms were found exclusively in one level. The snub-nose scraper and some knives (sub-triangular medium, rectangular multi-edged, and rhomboid forms) were concentrated in the lower levels (Table 6). Also associated with the lower levels were the bifaces, the drills, and the long oval scraper.

TABLE 5
Vertical distribution of projectile points in the northern section

	Level 1	Level 2	Level 3
Dart points			
<i>San Patrice</i>			
<i>st. johns</i>	..	3	2
<i>hope</i>	..	3	1
<i>goodwin</i>	..	1	..
Concave-base	..	..	2
<i>Scottsbluff</i> -like	..	..	1
Corner-notched			
straight base	1	2	1
convex base	..	2	2
slightly expanded stem			
with broad base	..	..	1
Side-notched	2	2	..
<i>Gary</i>			
slight shoulders	1	1	..
crude	..	1	..
wide	..	1	1
narrow	2	1	..
prominent shoulders	1	..	..
Short stem, rounded base	1	..	..
Miscellaneous parallel-sided	..	..	1
Fragments	..	4	6
Arrow points			
<i>Friley</i> , laterally-project-			
ing shoulders	..	1	..
Miscellaneous expanding stem	1	..	..
Fragment	..	1	..
Totals	9	23	18

TABLE 6

Vertical distribution of miscellaneous artifacts in the northern section

	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>
Knives			
Triangular			
subtriangular, medium	1	..	3
subtriangular, large	..	1	..
Quadrilateral			
rectangular, one-edged	..	3	2
rectangular, multi-edged	..	2	2
thick, long	1	..	1
rhomboidal	..	..	1
Leaf-shaped			
rounded base, medium	..	1	..
slender	..	1	..
pointed or rounded tips	1	5	2
miscellaneous	1	..	..
Fragments			
large	1	3	1
small	3	1	2
Scrapers			
quadrilateral	..	1	..
snub-nose	1	2	2
<i>Albany</i> spokeshave	..	1	..
long oval	1	2	..
Bifaces, small	..	1	2
Drills	..	1	1
Chopper	..	1	..
Miscellaneous chipped			
large	..	..	3
small	1	1	2
Boatstone	..	1	..
Recent debris	2	2	..
Totals	13	30	24

Scrapers from the middle level are the quadrilateral form and the *Albany* spokeshave. Knives from this level include the leaf-shaped (slender; rounded base, medium; knives with pointed or rounded tips), the quadrilateral (rectangular, one-edged) and the triangular (subtriangular, large). Miscellaneous artifacts from the middle level are a chopper and the boatstone fragment.

OTHER EXCAVATIONS

Extraneous excavations in both the northern and southern portions

of the site produced a few artifacts and other material. In the northern area more than 10 extraneous units were excavated, while in the southern area more than 20 extraneous units were excavated. The depth of these excavations varied from 0.5 to 2.0 ft. below the surface and they generally removed the top 0.1 ft. of red-orange clay. A frequency study of the horizontal distribution of the artifacts recovered indicated that, on the basis of the relative scarcity of materials, these areas could be separated from the main areas of concentration. In many cases, these areas were peripheral, and some units in which the plow zone was situated directly on top of the red-orange clay were obviously areas of mixture. For example, in the upper levels of the peripheral areas there are more *San Patrice* dart points than *Friley* arrow points (Table 7).

TABLE 7

Projectile points from other excavations in the southern section

	Level 1	Level 2	Level 3
Dart points			
<i>San Patrice</i>			
<i>st. johns</i>	3	3	3
<i>hope</i>	..	1	..
Corner-notched			
convex base	..	1	1
crude	..	..	1
Side-notched	..	1	..
<i>Gary</i>			
slight shoulders	2	2	..
rounded base	1	..	..
<i>Pogo?</i>	..	1	..
Fragments	2	6	4
Arrow points			
<i>Friley</i> , recurved shoulders	2	..	..
Fragments	1	1	..
Totals	11	16	9

The vertical distribution of the projectile points, sherds, and miscellaneous stone artifacts from extraneous excavations in the southern portion of the site are listed in Tables 7 and 8. Even in these areas, there are some suggestions of the expanding stem and side-notched dart points being succeeded by the contracting stem dart points and arrow points (Table 7).

The vertical distribution of the artifacts from the miscellaneous excavations in the northern section of the site is tabulated in Table 9. The only item of interest is a solitary snub-nose scraper that was found in the deepest level (Table 9).

TABLE 8

Artifacts from other excavations in the southern section

	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
Pottery				
Sand-tempered				
body sherds	19	21	1	..
rim sherds	1	3	..	..
Clay-and-sand				
body sherds	3	..	..	..
Unknown	..	1	..	..
Knives				
Triangular				
subtriangular, small	1	..	1	..
subtriangular, medium	..	1	1	..
Quadrilateral				
rectangular,				
one-edged	2	..	1	..
rectangular,				
multi-edged	1	1	..	..
thick, long	1	1	..	..
Leaf-shaped				
rounded base, medium	1	1	..	..
slender	..	1	..	..
pointed or round-				
ed tips	1	1	..	..
miscellaneous	..	1	..	..
Fragments				
large	2	2	..	1
small	1	1	1	..
Scrapers				
quadrilateral	..	1	..	..
flake	1	..	..	..
Bifaces, small	3	2	..	..
Chopper	..	1	..	..
Miscellaneous chipped				
large	2	..	..	..
small	..	..	2	1
Smoothing slab	..	1	..	..
Totals	39	40	7	2

TABLE 9

Artifacts from other excavations in the northern section

	<i>Level 1</i>	<i>Level 2</i>	<i>Level 3</i>	<i>Level 4</i>
Pottery				
Sand-tempered				
body	7	17	5	..
base	1	..	..	..
decorated	..	..	1	..
rim	..	..	1	..
Clay-and-sand temper				
body	1	1	2	..
decorated	..	..	1	..
Dart points				
Corner-notched				
convex base	..	..	2	..
Fragments	..	3	1	..
Knives				
Leaf-shaped				
pointed or				
rounded tips	..	2	..	..
miscellaneous	..	1	..	..
Scrapers				
quadrilateral	..	..	1	..
snub-nose	..	..	..	1
Biface, small	..	1	..	..
Miscellaneous chipped				
small	..	..	2	..
Totals	9	25	16	1

SUGGESTIONS AND CONJECTURES

CULTURE SEQUENCE

Previous work on the Archaic Stage in the McGee Bend area has produced a partial scheme (Tunnell, 1961) by which we can classify some of the data from the Wolfshead Site. Tunnell reports that the Runnells 1, Runnells 2, and Sawmill sites had Archaic components characterized by a dart point form similar to the *Kent* type. These *Kent*-like points, however, differ from the *Kent* type as defined by Suhm, Krieger, and Jelks (1954: 432-433) in that a large percentage of them have expanding stems (Tunnell, 1961: 127). Tunnell suggests that at the sites he investigated at least three periods are represented. The first period, he states, is:

. . . characterized by rather crude dart points with parallel side to expanding stems, shaped by percussion, and made from local stone (dart point Type I). A distinctive type of blade was commonly manufactured from a thin slab of silicified wood, and has fine pressure retouching along one edge (blade Type I). A few other scraping and cutting artifacts are associated with this occupation in small numbers (Tunnell, 1961: 155).

He describes the next period as follows:

To the basic late Archaic culture at McGee Bend a sand-tempered plain pottery was added. This was accompanied by a new type of blade, with an unworked base (blade Type II), pitted stones, and other miscellaneous lithic artifacts (Tunnell, 1961: 155).

The third period is mentioned as he continues:

These elements increased in popularity for a while, but declined in numbers when, in more recent times, clay-tempered pottery, bone-tempered pottery, and arrow points appeared (Tunnell, 1961: 155).

Tunnell's first two time divisions can, with modifications, apply to the Wolfshead Site data. An earlier period, however, can be tentatively defined on the basis of the meager information from the site. *San Patrice* and/or concave base, lanceolate dart points in the Paleo-Indian tradition represent this earlier period. Probably associated with these points are small snub-nose scrapers, small cortex scrapers, D-shaped scrapers, multi-edged scrapers, large and small bifaces, and grinding slabs (Table 2).

Succeeding the *San Patrice* and concave base, lanceolate dart point period is Tunnell's Archaic assemblage which he suggests can be divided into early and late phases. In the earlier phase are parallel-sided to expanding stem dart points. At the Wolfshead Site, this early phase is represented by forms with expanding stems (corner-notched) or side-notches. The data from the Wolfshead Site plus those from Tunnell's sites suggest that implements other than dart points associated with this earlier period of the local Archaic include *Albany* spoke-shaves, shaft smoothers, choppers (Tunnell's blade Type V, 1961: 132-133), hand axes, drills (Tunnell's drill Type I, 1961: 129), polished bannerstones, polished boatstones, and the rectangular multi-edged knife (Tunnell's blade Type II, 1961: 131). Tunnell includes his blade Type I in this earlier period also (1961: 155), but the data from the Wolfshead Site, plus a re-examination of the distribution of blade Type I at the Sawmill Site, suggest that, while this blade or knife form is found in both phases, it occurs predominantly in the later Archaic period.

During the later phase of the McGee Bend Archaic sand-tempered pottery was introduced into the area without strongly modifying the basic stone complex. At this time, the rectangular one-edged knife (Tunnell's blade Type I, 1961: 130) was in use. There may have been other differences between the earlier and later Archaic phases of this area but they are not well defined at the present. Hints of some of these differences appear in the projectile point sequence at the Sawmill Site where there seems to be a trend from lightly barbed points with strongly expanding stems to points with rectangular, parallel-sided stems and angular, unbarbed shoulders.

Following the later Archaic phase was a period characterized by small contracting stem dart points (*Gary* type) and expanding stem arrow points (some of the *Friley* type). Present evidence suggests that *Gary* dart points were popular in this area somewhat later than—although they may be partially contemporaneous with—sand-tempered pottery (Tables 1, 2; Tunnell, 1961; Newell and Krieger, 1949: Tables 12, 18), and that they survived into the succeeding clay-tempered and bone-tempered pottery period.

PROJECTILE POINT SEQUENCE IN THE MCGEE BEND AREA

By combining the known data from this section of eastern Texas, a general sequence of projectile point forms can be suggested. *San Patrice* and/or lanceolate-concave base points preceded side-notched and expanding stem (corner-notched) dart points. Also during this side-notched, expanding stem period there was a gradual trend from points with widely expanding stems to points with parallel-sided stems (Tunnell, 1961).

Some of the moderately to slightly expanding stem forms of this period (those which have been identified as *Kent* points) appear to be crudely made varieties of the *Yarbrough* type which is more common in northeastern Texas than in the McGee Bend area. This resemblance, previously noted by Suhm, Krieger, and Jelks (1954: 432), indicates that the two types might be related. The additional fact that *Kent* points occur earlier than *Gary* points in the McGee Bend area parallels the situation in northeastern Texas where *Yarbrough* also precedes *Gary* (Johnson, 1962).

During the later part of the period characterized by expanding stem forms, contracting stem dart points (*Gary* type) were introduced into the McGee Bend area. Although the present data suggest that the *Gary* point and the expanding stem arrow point entered the area simultane-

ously, information from sites outside the area suggests that *Gary* points were introduced somewhat earlier than arrow points (Davis and Davis, 1960; Duffield, 1961; Johnson, 1962). During the arrow point period, stem forms seem to have evolved from expanding, to parallel-sided, to contracting.

This projectile point sequence, extending from the transitional Paleo-Archaic to the Neo-American period, is sketchy due to the limited amount of data available for the area. Subsequent research in and near the area will undoubtedly modify and add more details to the sequence, or it may indicate an alternative interpretation.

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The Smithport Landing Site: An Alto Focus Component in De Soto Parish, Louisiana

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ABSTRACT

This is a belated description of the Smithport Landing Site, one of several known Alto Focus components in northwestern Louisiana. This large village site, on the western margin of the Red River flood plain, covers portions of several low hills which front on a former lake.

Nineteen pottery vessels, all but two identifiable as Alto Focus types, were found with fourteen burials. Included are *Hickory Fine Engraved*, *Davis Incised*, *Kiam Incised*, *Wilkinson Punctated*, and *Smithport Plain* (virtually identical with *Bowles Creek Plain*) types.

Surface materials comprise 1553 sherds, 61 dart and 55 arrow points, and a modest number of chipped and polished stone tools or ornaments. The stone tool assemblage seems to be basically late Archaic with the addition of small arrow points.

Although the sherds as well as whole vessels are predominantly derived from Alto Focus ceramics, a small percentage of Coles Creek, a somewhat larger representation of Bossier Focus, and a few late Caddoan pottery types are identified. Similarities and differences between the ceramics of this site, the Davis (Alto) Site in eastern Texas, and the central Louisiana sequence of pottery, are pointed out. Possible relationships between Coles Creek, Alto, Bossier, and Plaquemine ceramics are developed. It is postulated that Caddoan (Alto) and Coles Creek peoples or influences entered northwestern Louisiana almost simultaneously, and that Bossier Focus developed out of the amalgamation of these two previous cultures. A few very late Caddoan sherds indicate a late occupation at Smithport Landing, possibly during historic times.

INTRODUCTION

The Smithport Landing Site was initially explored by Monroe Dodd, Jr., and the author between 1934 and 1940.* It was the first site at which we found burials and whole pottery; it was also the first site in

* Thanks are extended to Monroe Dodd, Jr., George Freeman, and other friends who assisted in the site exploration; to Alex Krieger and James A. Ford for assistance with pottery identification and typology; to A. L. Wedgeworth, Jr., for photography; and to Gordon Maxcy for film developing and assistance with the plates.

Louisiana which was identified as an Alto Focus component (Webb, 1948) and was recognized as such in the Davis Site report (Newell and Krieger, 1949: 195, 197, Fig. 62). In describing the Bossier Focus, Smithport Landing was one of 15 sites used for comparison and discussion of the relative incidence of Bossier Focus pottery types, and of several pottery complexes. First suggested in my 1948 paper, and elaborated in a more recent study (Webb, 1961) of 20 sites in northwestern Louisiana, is the thesis that the Bossier Focus developed out of a simultaneous spread of Alto and Coles Creek peoples or influences across this area in post-Marksville times. Smithport Landing was one of the key sites in this study, because of the admixture of Alto and Coles Creek pottery types and the presence of a minor Bossier Focus manifestation.

It therefore seems appropriate to publish the available information about this site, despite the limited excavations conducted nearly 30 years ago. The criticism has been made that too many foci in the Caddoan area have been based on excavation of a single site and that the Alto Focus, for example, is based on the Davis Site alone. The information presented herein concerning Smithport Landing and other Alto Focus manifestations in Louisiana was available to, and used by, Krieger as indicated in the Davis report. The details should have been published for other students, however, especially since burials of the Alto period are limited in number.

SITE ENVIRONMENT

The Smithport Landing Site is in the eastern edge of De Soto Parish, about eight miles east of Mansfield, the Parish seat (Fig. 1). It is a relatively large village site situated on eroded and dissected hills which project in an expanded tongue of land fronting on Old Smithport or Clear Lake (Bayou Pierre Lake). The former lake bed is now dry in the summer, swampy during the rainy season. Buffalo Bayou courses through this low area to join the outflow of present Smithport Lake about one mile northeast of the site. Further eastward this drainage flows into Bayou Pierre which continues some 20 miles down the southwestern margin of the Red River flood plain until it empties into this river near Natchitoches.

The hills on which the site is located (Fig. 2) are 10 to 20 feet above the lake bed; where dissected by small drainages the slope is gentle, but in several places is abrupt. Most of the site was formerly in cultivation and the topsoil, a grayish sand with liberal mixture of humus,

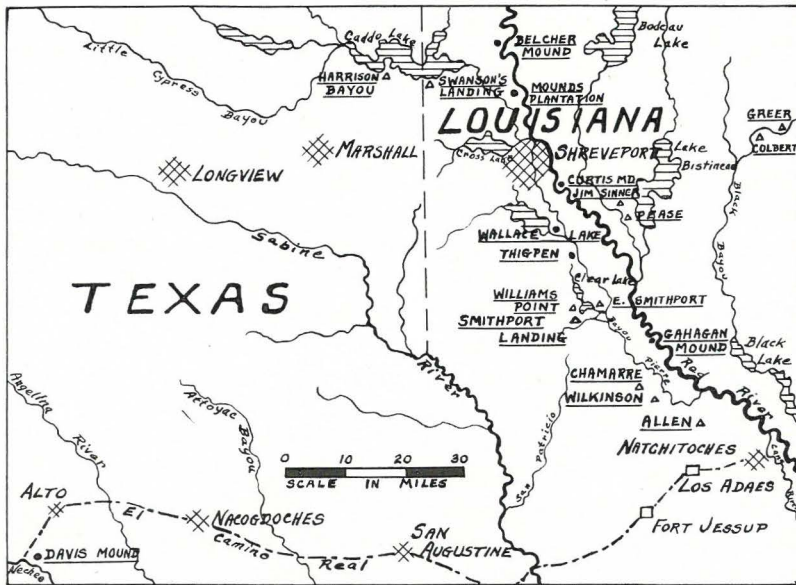


Fig. 1. Map of northwestern Louisiana and adjoining portion of eastern Texas. Listed sites have Alto Focus or related components. Note route of the early historic road, El Camino Real, which probably followed prehistoric trails through this area.

is three to four feet thick and apparently fertile. The subsoil is a rather dense, reddish or orange sandy clay. The trees around the site are oak, persimmon, gum, and many smaller hawthorns and sassafras. The uplands have heavy growths of pine and the lake bed has the usual cypress, willows, and some hardwoods. The nearby lakes still have abundant fish—bass, crappie, “bream” and other small perches, as well as the “rough” varieties like gar, carp, catfish, shad, and “gasper-gou”—and turtles, eels, bullfrogs, snakes, and an occasional alligator are present. Bird species are abundant and in former years migratory waterfowl came in tremendous numbers. Edible wild fruits and nuts in the area are persimmons, haws, crab apples, plums, muscadines and other wild grapes, hickory nuts, walnuts, pecans, chinquapins (dwarf chestnuts), yoncapins (seed of *Nelumbo lutea*, a water lily), and many others. Deer were present until the early part of the 20th century and are now returning; squirrels, rabbits, raccoons, and opossums are the more prevalent of the edible animals. Mussels and snails are available in moderate numbers. In aboriginal and early historic times this vicinity afforded, undoubtedly, an abundance of natural resources, with good soil and adequate rainfall for domestic crops.

HISTORICAL BACKGROUND

During the 18th and 19th centuries this land was spoken of as "the coast," inferring a large body of water into which the tongue of land projected. Like so many other lakes formed where streams run into the river valley out of the hills, it is probable that old natural river levees formed a bar or dam which produced the lake; some, however, are of the opinion that the famous log jam in Red River was instrumental in production of these lakes. At any rate, much of the traffic on the river above Alexandria coursed along these lateral streams and lakes. When we first visited this site, old residents spoke of a deep lake with steamboat landings at the site and on present Smithport Lake.

The desirability of this land for habitation is attested by the several prehistoric sites in the neighborhood, the size of the Smithport Landing Site, and the early documents which indicate a white settlement within a few years after establishment of Natchitoches Post. About equidistant (25–30 miles) from Natchitoches and the Spanish counter post at Los Adaes (Fig. 1), families and influences were derived from both the French and Spanish. Records at Natchitoches record the birth of Joseph Marcel Antonio De Soto, son of Manuel De Soto and Marie De St. Denis, member of the family of Louis Juchereau De St. Denis who founded Natchitoches, in 1758 (D'Antonio, 1961a). A later daughter married Paul Lafitte of Bayou Pierre, as the Smithport Lake Settlement was called.

The Spanish influence became stronger in the latter 1700's, after Louisiana was ceded to Spain. Even after the Louisiana Purchase, this land was on the margin of the "neutral ground" and for a time was under Spanish jurisdiction. This, as well as a comment about a Yatasi Indian village which may be of significance to the site, is indicated by D'Antoni's (1961a) account of the journey in 1808 of Don Marcelo De Soto, who had become Spanish judge of Bayou Pierre Community, to San Antonio to petition the governor for a resident pastor. The petition reads in part:

Don Marcelo de Soto, acting justice of Bayupier, Jurisdiction of Nacogdoches, together with Jose Lafitte, Silvestre Poissot, Pedro Robleau and Miguel Rambin, all of aforesaid community, who have come to this capital together, has the honor of appealing with all respect to your lordship's equity, conjointly with and in the name of all the other residents of the specified Bayupier. [These] consist of thirty Spanish families gathered together and long established in the aforesaid place, with no large number of educated persons at their service; besides, there is next to them the village of the Yatasi Indians. They are all in need of the church and of an ecclesiatic to minister the Holy Sacraments. . . .

Although a resident pastor was not sent, priests from Nacogdoches visited the settlement for some years, then visitation was taken over by the French priests at Natchitoches. A chapel was constructed in 1843 "in the center of De Soto Parish at Bayou Pierre." In 1855 the first new parish of the Natchitoches Diocese was established here and a resident priest assigned (D'Antoni, 1961b).

In 1888 a Carmelite Mission was established, with a monastery and subsequently separate schools for boys and girls (D'Antoni, 1962). The Carmelites built a rock chapel which is now preserved as an historic monument to their labors; the small settlement three miles east of the site is now called Carmel.

SITE EXPLORATION AND EXCAVATION

The Smithport Landing Site is located in Township 13 N, Range 12 W, sections 23 and 26, on land owned at present by Edward Lafitte of Carmel, but at the time of our excavation by Guy Sample of Shreveport. When first visited in 1934, much of the site was in cultivation; now it is in pasturage or woodlands. Evidences of occupation were found on portions of four hills, heaviest on hills 2 and 3 (Fig. 2). Larger than most sites in this area, we estimated that a total of 40 to 50 acres was occupied. We first explored Hill 1, a low hill which sloped gently to the bottom lands and had been in cultivation for a long time. The topsoil was thin and sheet erosion exposed a number of pottery sherds, projectile points, and other stone objects. It is possible that this was a separate site, since it is set apart by a wide stream bed from the other occupied hills, but the artifact types were not different. The area of occupation covered about five acres.

Hill 2 is higher, about 20 feet above the old lake bed, and slopes rather sharply southward to the lowlands. The top is gently rounded and had been put into cultivation only a few years before our first visit. The topsoil was very dark and many large pottery sherds were found; in fact, this hill showed the heaviest occupation of the site, over an area of 20 to 30 acres. The burials (Fig. 3) which are described later occurred on the crest of this hill, immediately overlooking the old lake.

Hills 3 and 4 run north-south and slope down to a small stream which separates them. The occupation areas, chiefly along the slopes to the stream, are estimated at five to ten acres on each hill, although we were uncertain about Hill 4 because it was partly wooded. There were two tenant houses in a nearby deserted field. On the back part of Hill 2 and east of the main tenant house, very black soil, found over

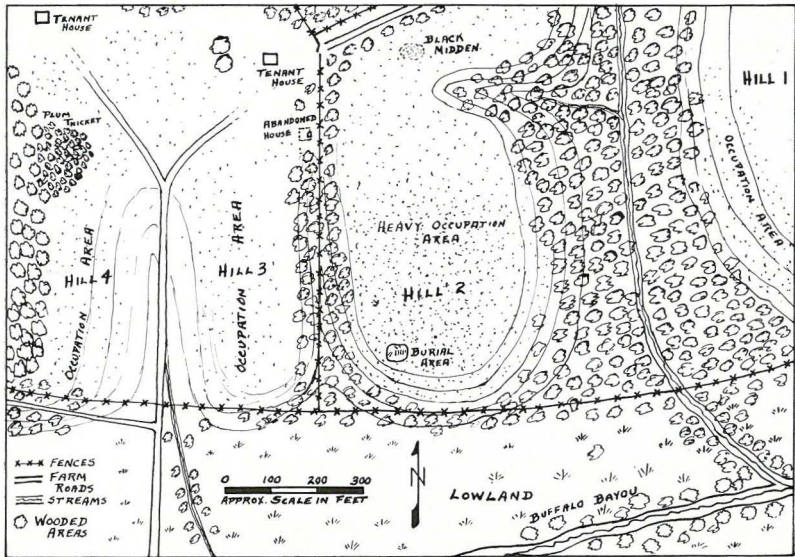


Fig. 2. Sketch of Smithport Landing Site, not to scale. Note occupational areas on four hills, burial area and heavy midden on Hill 2.

a radius of 12–15 feet, contained large sherds, numerous animal bones or bone fragments, and ashes (Fig. 2). Two test pits showed that the black refuse soil was two to three feet in depth and ashes indicated extensive cooking. Our notes show no evidence of a house floor or post molds, although we did not trench the area.

BURIAL EXCAVATIONS

In May, 1935, Monroe Dodd, Jr., found a small intact vessel (Fig. 4, O) in hog rootings on the crest of Hill 2, which had been left uncultivated and put into pasturage that year. Excavations exposed within a radius of two to three feet a cluster of nine pottery vessels (Fig. 3, Nos. V-94-102), three of which were intact and four largely so. Included are vessels shown in Figure 4, B, C, F, K, N, O, and R. Vessels which are not illustrated are two broken bottles (probably hit by the plow), one *Hickory Fine Engraved* and an untyped engraved ware with interlocking spirals. All of the vessels were within two feet of the surface, as were burials 1 and 2 (Fig. 3), male and female adults lying fully extended and supine, with heads turned to left and right, respectively. The pottery deposit could have related to either or both of these. Two *Alba* points were found to the side of Burial 1.

On weekend trips between May and November, 1935, with permission of the owner, we worked out the remainder of the burials; see Figure 3. As a result either of our inexperience or of the way the burials had been placed, we were not sure of pit outlines and of which skeletons were associated. All occurred at a depth of two to three feet from the surface, although disturbed soil continued to a depth of three to three and a half feet and in a few places to four feet. It was my impression, as recorded in notes, that burials 1 and 2 were together and that burials 5, 3-4, 6-8 and 11-13, and 9-10 represented interment groups.

Burials 3 and 4 were side by side and undoubtedly placed together. Both were supine and fully extended, except that the left arm of Burial 3 was abducted and flexed at right angles. Heads were directed almost south, that of 3 with face upward; the skull of Burial 4 was turned to the right. Both were adults, Burial 3 a female, 4 a male. A large, intact bottle (Fig. 4, A) was two feet above the heads and a small bowl (Fig. 4, I) was in fragments to the left of the skull of Burial 3.

Between this group and Burial 2 we found a skull and several long bones in an irregular bundle (Fig. 3, Burial 5). There were no associated artifacts.

Burials 6 to 8 were about a foot apart, on the same level, and were thought to be a single interment. Heads were directed north, all turned towards the left side, and the bodies were supine and extended, except that the left arm of Burial 6 was flexed, with the hand lying over a pot-

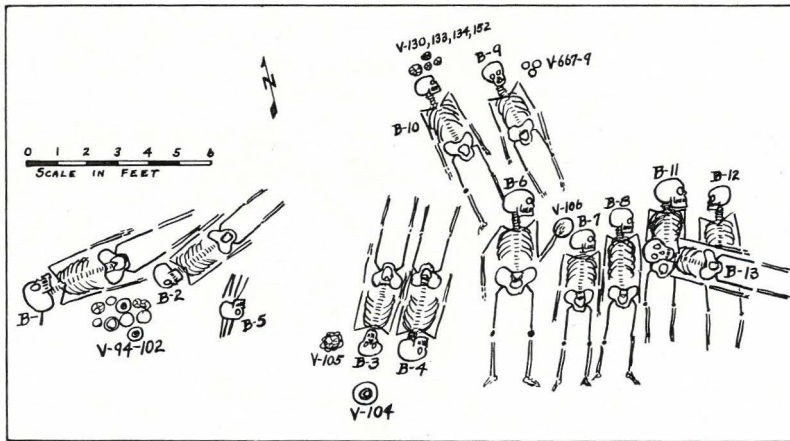


Fig. 3. Burials on Hill 2 of Smithport Landing Site. Vessel numbers are catalog numbers. Left arm of B-3 shown incorrectly; it should be abducted and flexed.

tery vessel above the head of Burial 7 (Fig. 3). This vessel, an intact cylindrical jar of the type *Kiam Incised* (Fig. 4, D) was the only offering. Burial 6 was that of a female, age estimated 40–50 years, rather gracile in build. Burial 7 was a child of 13–15 years and Burial 8 was either an adolescent or young adult female.

Burials 11 to 13, found on a subsequent visit, may have been a part of the burial 6–8 interment, as they were at the same depth (three feet), were immediately adjacent, and lay in the same orientation. Burial 11 was a male, supine and extended, with head directed north and turned to the left. Age was estimated at 18–20 years. Burial 12 was a female adult, also supine, fully extended and head directed north but rotated to the right to face Burial 11. Burial 13 was a female adult, lying across and directly on the previous two, with head directed just north of west and face turned upward. No artifacts were with these three.

Burials 9 and 10 were probably associated but separate from the others. They were north of the previous row of burials, with head orientation toward the north, supine, extended, and the feet just above the skulls of burials 6 and 7. Burial 9 had the face upright, and was a child of undetermined age. Burial 10 was of a female adult with head turned to the left, toward 9. Above the skull of Burial 10 there were pottery fragments which were later assembled to form vessels 130, 133, and 134 (Fig. 4, H, E, and G, respectively) and a toy bottle (Fig. 4, P). To the left of the skull of Burial 9 there were three small vessels, two plain bowls, and a fingernail-pinched cup (Fig. 4, L, M, Q).

In November, 1935, a final burial (not shown in Fig. 3) was found, six feet east of burials 12 and 13. This was of a male adult, turned on the right side with legs partially flexed and the head directed to south-east. No artifacts were associated.

Measurements were made on three intact skulls. That of Burial 6, adult female, had a circumference of 47 cm., glabella to occipital protuberance 27 cm., and zygoma to zygoma 30 cm. The skull of Burial 10, adult female, had circumference of 46.8 cm., glabella to occipital protuberance 28.5 cm., and zygoma to zygoma 31 cm. That of Burial 14, adult male, had circumference of 49.5 cm., glabella to occipital protuberance 29.2 cm., and zygoma to zygoma 30.5 cm.

DESCRIPTION OF ARTIFACTS

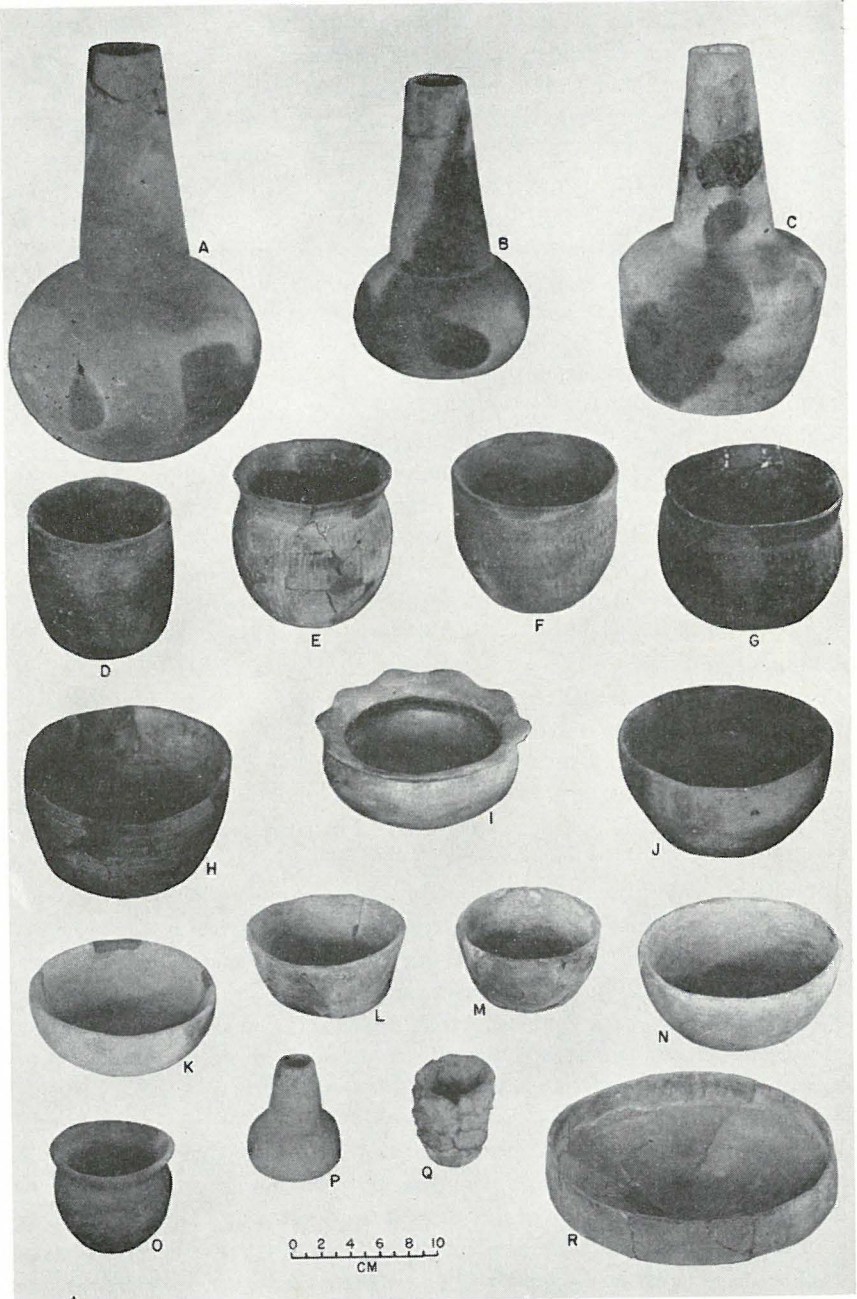
CERAMICS

There are available for study of pottery from this site 19 whole ves-

sels from the burials, of which 10 are decorated and nine plain; 1533 sherds from surface collections and the several test pits, of which 875 are decorated and 658 plain. Among the sherds there is a group of 37 which have paste and decoration characteristics of late wares, historic or protohistoric, which will be described in a separate section. Consequently there are 19 whole vessels and 1496 sherds which relate to the earlier occupation. Most of these are assignable to existing types which have been described elsewhere and type descriptions will not be repeated, although local or regional variations will be indicated. Reference should be made to the Davis Site report (Newell and Krieger, 1949) and T. A. S. handbooks (Suhm, *et al.*, 1954; Suhm and Jelks, 1962) for descriptions of Alto types; to the Bossier Focus report (Webb, 1948) and the handbooks for the Bossier types; and to the Crooks (Ford and Willey, 1940), Greenhouse (Ford, 1951), and Medora (Quimby, 1951) Site reports for Coles Creek and Plaquemine types. One new type of the Alto period, *Carmel Engraved*, will be described herein.

Certain characteristics of paste, temper, surface and core colors, and sherd thickness extend throughout the earlier wares from this site. The paste is generally uniform and compact, rarely lumpy or porous. The range of hardness is 2 to 3 (Moh's Scale), the sherds are broken with difficulty and seldom can be scored with a fingernail; the majority of the sherds give a metallic ring when dropped on a hard surface (except for the dark chocolate to black wares). Tempering is clay-grit in most instances, sometimes with finely ground sherds, and a few with enough grit to feel slightly sandy (none is fully sand tempered). Bone temper occurs in 31 of the 1496 sherds (2%) and shell is totally missing.

Surface colors are predominantly light, showing oxidizing firing conditions, and fire clouds are frequent (Fig. 4, A-C), indicating incomplete control of firing. The majority of sherds have light interiors and cores, but some of the interiors are darker gray or smudged and some of the cores are dark brown to black, even though the surfaces are light. Surface colors are varying shades of gray, some buff or tan, a few orange or reddish-brown; in every type there will be varying percentages of dark brown (often chocolate or reddish-brown) to black, although these are never as numerous as in the Alto wares of the Davis Site, even in the engraved types. The sherds with chocolate brown to black exteriors usually have uniform darkness through the core and on interior surfaces; the paste is usually softer and the sherds seldom give a metallic ring when dropped. Their surfaces tend to be smoothed but rarely polished.



Sherd thickness varies from 4 to 10 mm., averaging 6 to 7 mm. in most types. Variations will be noted.

In general, this early ware is thicker and lighter in color than the later Caddoan wares of the Belcher and late Bossier periods. It is about the same thickness as the Alto wares of the Davis Site and the Coles Creek-Early Plaquemine of central Louisiana, but differs from Davis Alto in having less of the reddish and chocolate to black polished pottery and more buff to light gray. It shares bone tempering with Texas (Davis) Alto. In other respects of hardness and coloration, it more nearly approaches Coles Creek ceramics, although seldom having the orange tints and never the greenish tints of Coles Creek. It tends to be thicker, harder, and lighter in color than Plaquemine pottery, although some of the shapes and designs are similar to Plaquemine types.

A. Engraved Wares

Holly Fine Engraved type is represented by 10 sherds (Fig. 5, A, B), one from a bottle, five from shallow bowls, and four uncertain. Indicated height of bowl rims is 2.5 to 3 cm., vertical or mildly outslowing. Colors are tan, gray and brown, no black polished. Two of the sherds are bone tempered. Wall thickness is 6 to 9 mm. The engraved lines are usually diagonal on the bowls and seven have excised triangles.

Hickory Fine Engraved type includes two whole vessels, both bottles, and nine sherds from four bowls, one bottle, two small jar or cup forms, and two of uncertain form. The first bottle (Fig. 4, C) is 26 cm. high, 14 cm. in body diameter, has an evenly tapered spout and shouldered body. Three lightly engraved lines encircle the shoulder. The second bottle, which also occurred with Burial 1, has the spout missing but body intact. The body is 12.6 cm. high, 15.2 cm. in diameter, and has eight engraved lines encircling the upper body area. Both of these bottles are gray in color, with black fire clouds, and are clay tempered. Eight of the sherds of this type (Fig. 5, E, G) are tan to gray with black areas, while the ninth (Fig. 5, F) is black and polished, with cross-engraved decoration. No other *Hickory* sherd is polished. Temper is

Fig. 4. Pottery From Burials. A, B, *Smithport Plain* bottles, V-104, 95. C, *Hickory Fine Engraved*, V-96. D-G, *Kiam Incised* jars, V-106, 133, 94, 134 (note plain body on D, vertical incising on E, fingernail punctating of F, G). H, *Davis Incised*, V-130. I, Untyped, V-105 (plain body, scalloped rim with free punctations on lower surface). J, *Smithport Plain* bowl from Allen Site. K-N, *Smithport Plain* bowls, V-99, 667, 668, 100. O-P, *Smithport Plain* miniatures, V-97, 152. Q, *Wilkinson Punctated* (pinched miniature), V-669. R, *Smithport Plain* carinated bowl, V-101.

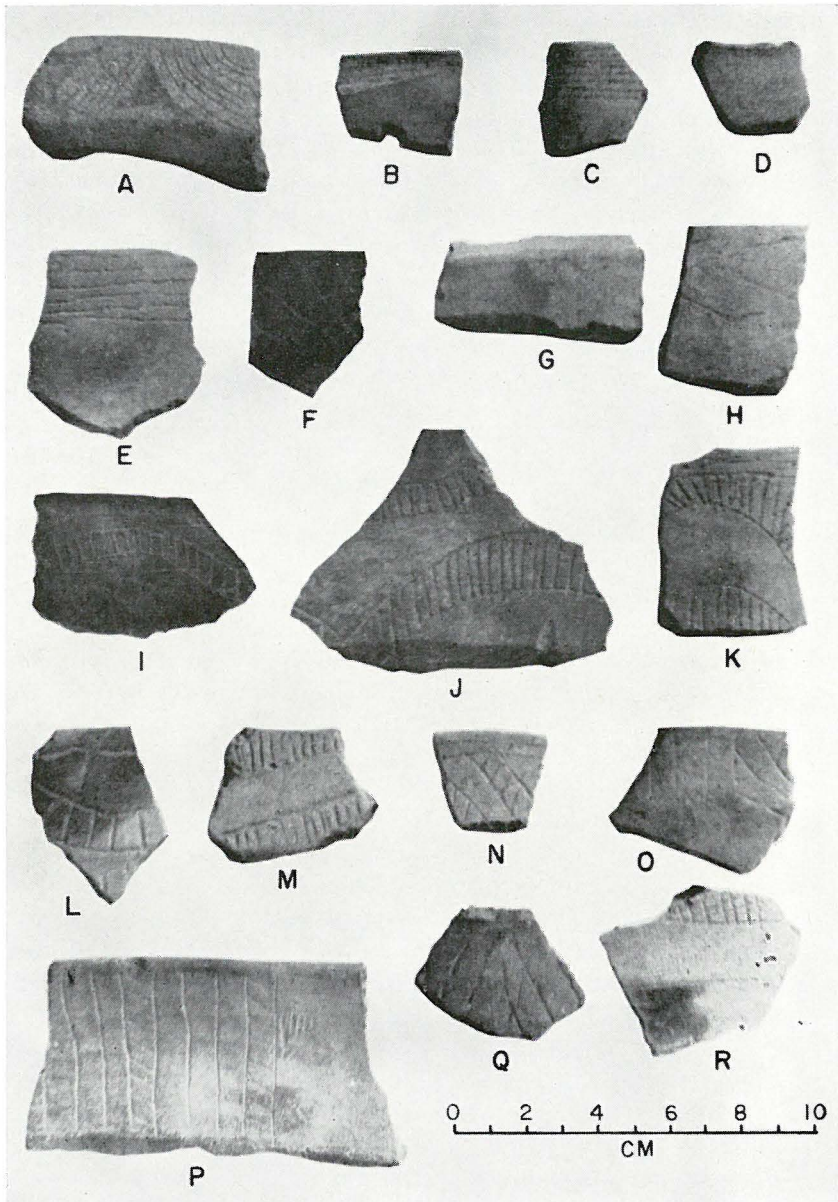


Fig. 5. Engraved Shards. A, B, *Holly Fine Engraved*. C, D, *Holly or Hickory Fine Engraved*. E-G, *Hickory Fine Engraved*; H, *Untyped zig-zag engraved*. I-P, *Carmel Engraved*. Q, *Untyped with spurred engraved lines*. R, *Probable Maddox Engraved*.

clay-grit or sherd, one with bone. The bowls appear to have vertical or outslipping rims, with walls 5 to 7 mm. thick, but one sherd is from an incurvate bowl, 4 mm. thick. Five of the sherds have horizontally engraved lines, 4 to 9 mm. apart; three have diagonal parallel lines and one has cross diagonals. The latter is a rim sherd and the rounded lip has transverse notching 7-9 mm. apart (Fig. 5, F).

Six sherds could be either *Holly* or *Hickory Fine Engraved* (Fig. 5, C, D). One is from the top of a bottle spout, another from a bottle shoulder, two are bowl sherds, and the other forms are doubtful. The bottle sherds have horizontally engraved lines, the other four are diagonal. One bowl sherd, light in surface color, is only 4 mm. thick. The surface colors of both *Holly* and *Hickory Fine Engraved* types at this site are more like the later (Phase 2 and 3) periods at the Davis Site; the earlier vessels at Davis were preponderantly dark in surface color.

Carmel Engraved Type
(Fig. 5, I-P)

This is presented as a new type, as it is a major engraved type at this site—with 17 sherds, of which 11 are rim sherds—and has been found with Alto pottery at five other sites in northwestern Louisiana. There were five *Carmel Engraved* sherds from the Colbert Site; four each from Greer, Mounds Plantation, and Marston sites; and three from Chamarre Lake Site. The description is based on the Smithport collection.

METHOD OF MANUFACTURE: Coiled.

PASTE

Temper: Clay-grit or ground sherd; bone in 2 of 17 sherds.

Texture: Compact, generally fine, occasionally coarse.

Color: Shades of gray from light to almost black, often on same sherd (fire clouds); buff, tan and reddish-brown. Nearly half of the Smithport sample has reddish-brown exteriors and interiors. Cores may be same color as exterior, sometimes darker.

Surface Finish: Smoothed exteriors and interiors, a few with fair polish, none highly polished.

FORM

Wall Thickness: 5 to 7 mm., uniform.

Lip: Rounded, usually unmodified; occasional thinning.

Base: Uncertain, probably mildly convex, circular.

Vessel Shape and Size: So far as presently known, open and carinated bowls only. Rims are 3 to 7 cm. in height, about equally divided between 3-5 and 5-7 cm. range, from an obtuse angle at the junction of base and rim. The bases appear to be shallow; the rims mildly excurvate, or direct and slanted outward. A few appear to be vertical. Curvatures suggest diameters of 20-30 cm.

DECORATION

Treatment: Engraving.

Designs: Effected with heavy engraving on exteriors of rims only. Curving, wide bands outlined by parallel single engraved lines, with transverse, widely spaced lines producing a ladder effect. Usually two of such bands form arcs or meanders, with undecorated bands of similar width between them (Fig. 5, I-K). Occasionally one or more engraved lines flank the engraved bands or bisect the intervening plain band. Some sherds (Fig. 5, M, N, P) have straight instead of curving bands, but otherwise seem to fit into the type.

CULTURAL AFFILIATIONS

This type has occurred only in sites which have Alto Focus pottery; it has not been found in Bossier Focus sites which lack established Alto types. In the Bossier Focus, the related engraved type seems to be *Maddox Engraved*, which in northwestern Louisiana has cross-hatched engraved bands, generally not curving and most often vertical, as the major element. In central Louisiana *Maddox Engraved* type has been extended to include curvilinear bands of cross-hatched engraving (Suhm and Jelks, 1962: Pl. 50). The decoration on Plate 50, *F* of this handbook is very much like *Carmel Engraved* and this vessel probably should be included in this type instead of *Maddox*.

DISTRIBUTION

In addition to the Smithport Site, *Carmel Engraved* has been found at one mound and four village sites in northwestern Louisiana.

There is one untyped engraved vessel and seven sherds. The vessel (V-102), from Burial 1 is a bottle (with missing spout) of polished black ware, decorated with engraved interlocking spiral design, four times repeated. One sherd (Fig. 5, H) has a zig-zag engraved decoration with excisions at the angles, similar to the two sherds illustrated from the Davis Site (Newell and Krieger: 1949, Fig. 34, S, T). Three sherds have bands with cross hatching, probably *Maddox Engraved* motifs, but the sherds are too small to be sure about the design (Fig. 5, R). A bottle sherd (Fig. 5, Q) has diagonal spurred engraved lines. Two bowl sherds are from polished black wares, with designs which suggest the *Glassell Engraved* type (Webb, 1959: Fig. 118).

B. Incised Pottery Types

Davis Incised type is represented by one vessel (Fig. 4, H) and 17 sherds. The vessel is a deep, reddish-brown bowl, which curves outward from a slightly convex disc base, then is vertical to the rounded, unmodified lip. It is 10 cm. in height, 15.2 cm. in greatest diameter. There are five parallel, smoothed-over incised lines around the upper body, placed about 1 cm. apart. They are shallow and about 2 mm. in width. The surfaces are smoothed and questionably polished. The 17 sherds (Fig. 6, A-E) include 11 rim sherds, nine of which indicate vertical walls, two outward sloping (but no excurvate). Most of the vessels seem to be deep bowls, but two sherds indicate shallower carinated bowls with inward curving or sloping rims. All are clay or grit tempered, with walls 4.5 to 8 mm. thick. Three are black, others gray, buff, light brown or tan in surface color; surfaces are smoothed and one of the black sherds (Fig. 6, C) is polished lightly. The lips are rounded and unmodified except that most are thinned by an extra outward curving of the interior wall. The incised lines are smoothed over, 5 to 13 mm. apart and are 3 to 10 in number. Half of the lines are less than 1 mm. in width, the others are between 1 and 2 mm. wide, generally shallow and well executed.

Nine sherds are classified as *Sanson Incised* (Ford and Willey, 1940) because of the wide, shallow, smoothed incising in straight lines (Fig. 6, F, G). No rim sherds were found, hence patterning of the incising is indefinite. Tempering is clay-grit, the surface coloring is gray to black or dark brown, and the thickness is 5 to 8 mm. The incised lines are 2.5 to 4.5 mm. in width and appear to have been made with tools which had bluntly rounded or flat ends.

Two sherds (Fig. 6, H, I) are possibly *Mazique Incised* (Ford, 1951) but may be well executed *Dunkin Incised*. They are light gray and tan in color, and one is a rim sherd. The decoration consists of finely made parallel incisions, closely placed in diagonal fields or herring-bone effect on the upper body. Vessel shape is uncertain.

Coles Creek Incised type is represented by eight sherds, although it is almost certain that some which are typed as *Hardy* or *Kiam Incised* are in reality *Coles Creek*. In order to be certain of Coles Creek Period wares at this site, I have included in this type only those sherds whose paste characteristics are consistent and which have "overhanging" parallel lines around the rim (Fig. 6, J) or characteristically placed triangular punctations below the incised lines (Fig. 6, K). Surfaces are smoothed and are buff or gray in color. The incisions are bold, horizon-

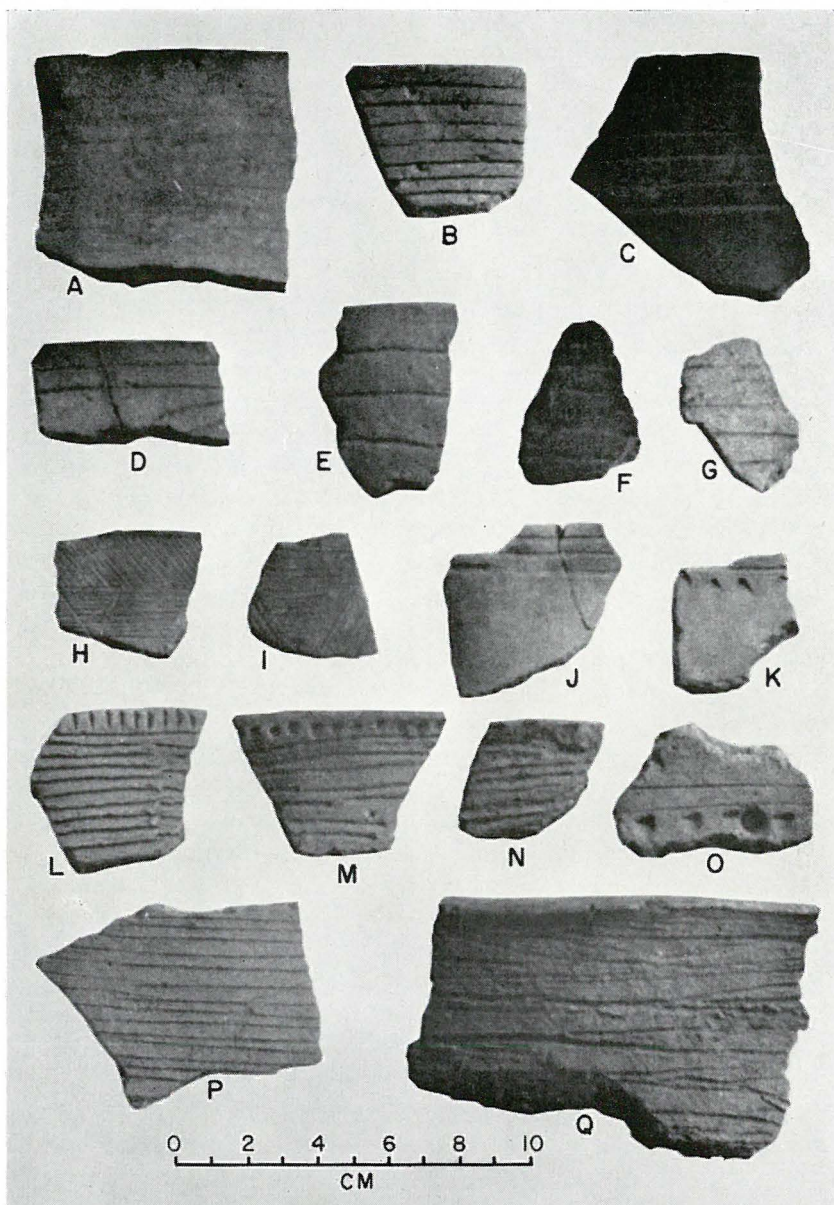


Fig. 6. Incised Sherds. A-E, *Davis Incised* (A resembles high rim of jars which are frequent in Haley pottery). F, G, *Sanson Incised*. H, I, *Mazique Incised*. J, K, *Coles Creek Incised*. L-Q, *Kiam or Hardy Incised* (note outer lip notching or punctations on L-N, also suspension hole and subjacent hemiconical punctation on O, almost certainly *Hardy Incised*).

tal, and usually more closely spaced than in *Davis Incised*. The subjacent triangles on four sherds are pressed into the paste more deeply at the apex. It must be pointed out that it is not a simple task, in studying sherds from northern Louisiana, to distinguish the four related types which are characterized by parallel incisions around the rim—*Davis Incised*, *Coles Creek Incised*, *Hardy Incised*, and *Kiam Incised*—unless the technique and paste are characteristic or a large part of the vessel available. Much overlapping occurs.

One hundred and seventy four sherds from this site are included in type *Kiam Incised* or *Hardy Incised* (Fig. 6, L-Q). No attempt shall be made to distinguish between these types, but the problem will be pointed out and resolution left for future conferences. These sherds are characterized by parallel incised lines covering the rim or upper part of the vessel. Fortunately, there are four complete vessels from the burials (Fig. 4, D-G) which are typical *Kiam Incised* (Suhm and Jelks, 1962: 89, Pl. 45) and established the presence of this type. Vessel 106 (Fig. 4, D) is a heavy, thick-walled cylindrical jar with a slightly recurved and rounded lip. It is 11 cm. high, 10.6 cm. in diameter, clay tempered, and dark reddish-brown in color. Decoration consists of numerous scratchy incisions covering the upper 3 cm.; it is plain below this zone. Vessel 133 (Fig. 4, E) is a jar with narrow excurvate rim and semiglobular body. It is 12 cm. in height and in greatest width, and is clay tempered, with irregular light and dark gray surface color. The rim has three to four irregular, wavy incised lines which are not continuous; the body is covered with vertical, firm incisions spaced 4 to 7 mm. apart. Vessel 94 (Fig. 4, F) is a firm, intact, well made cylindrical jar, clay tempered, with dark gray-brown surface color except for a few light fire clouds. The upper 2.5 cm. has irregular horizontal incisions, 5 to 7 in number, and the remaining body exterior is covered with fingernail punctations, spaced rather regularly but not in exact rows. Vessel 134 (Fig. 4, G) is a jar with semiglobular body, narrowed toward the rim, which is vertical. The clay tempered paste is softer than the other three vessels and is fired black over the exterior, dark gray on the interior. It is 11 cm. high, 14 cm. wide. Decoration consists of five firmly incised lines around the rim exterior, spaced 3 to 5 mm. apart, and paired fingernail punctations or pinches covering the body. These vessels demonstrate the three most frequent body treatment techniques described for the *Kiam Incised* type.

The 174 sherds present more variation, and include 82 rim pieces. Temper is clay-grit or ground sherd except for five which are bone tempered. The surface colors cover the range of tan, buff, yellow-

orange, light to dark gray, reddish-brown and black; the light colors predominate. Interior and exterior surfaces are smoothed. Wall thickness is 5 to 10 mm., averaging 6.5 to 7 mm. The rim sherds show that about half have excurvate rims, $\frac{1}{4}$ to $\frac{1}{5}$ of the vertical, and the others slant outward. Five have a row of punctations or notches on the rim exterior (Fig. 6, L-N), and one has transverse incisions on a flat lip. The lips are more often rounded, but about $\frac{1}{4}$ are flat; thinning may occur but not thickening.

The incising varies from thin scratchy lines made with a pointed tool, to rough and irregular (Fig. 6, Q), to firm, well made and regular (Fig. 6, L, M, P). The number of lines varies from two to 20 and the spacing from two to 10 mm. apart, often varying on the same sherd. Generally they are placed at 3 to 5 mm. intervals. Although most were produced with a pointed tool, a few were made with a blunt or square-tipped tool. Five have hemiconical or oval punctations below the last line (Fig. 6, O).

These characteristics as a unit do not fit either *Kiam* or *Hardy Incised* types. The predominant shape, with everted or excurvate rim is more like *Kiam*, as are bone tempering, and either punctated bodies (two vessels, two sherds) or vertical incising on bodies (one vessel, two sherds). The paste and surface coloration are more like *Hardy Incised* (except for the five with bone temper), as are the subjacent punctations (Fig. 6, O), occasional stabs or punctations at the ends of lines (in central Louisiana, this occurs more often in *Yokena* and *French Fork Incised* than in *Hardy*), plain bodies (one vessel, five sherds), cutting away of the body wall just below the incisions (Fig. 4, D), and flattened lips. Not described for either *Kiam* or *Hardy* types are notched or incised lips, vertical rows of plowed-up paste where the incisions meet (Fig. 6, L) or narrow undecorated gaps at this junction, which occur on a number of the Smithport sherds. The conclusion seems obvious that *Kiam Incised*, *Hardy Incised* and the similar wares from this area are local or regional variations of a single widespread type.

The *Dunkin Incised* type presents the same problem. Although the sherds assigned to this type have more similarities to type *Dunkin Incised* than to any other, there are some similarities to *Mazique* and *Manchac Incised* types of central Louisiana, and some items which differ from all of these types. Again, regional or temporal variations of a single type are indicated and should be subjected to study.

There are 117 sherds of *Dunkin Incised* which show incising in varying directions (Fig. 7, A-L), usually including diagonal lines, and 65 sherds (Fig. 7, O-R) which show only diagonal lines but are also

assigned to *Dunkin*. Thirty of the former group and 25 of the latter are rim sherds. Paste characteristics, color, and wall thickness are the same as those described for *Kiam Incised*. The majority of the rim sherds indicate everted or excurvate shapes, possibly a fourth are direct and vertical, none incurvate. Indicated vessel shapes are semiglobular jars with flaring rims, similar jars with narrowing at the neck and vertical or slightly everted rims, cylindrical vessels, and simple deep bowls. Lips are usually narrowed by outward curving of the interior wall, but may be rounded or occasionally flattened. There are no nodes or handles, and only one rim shows notching.

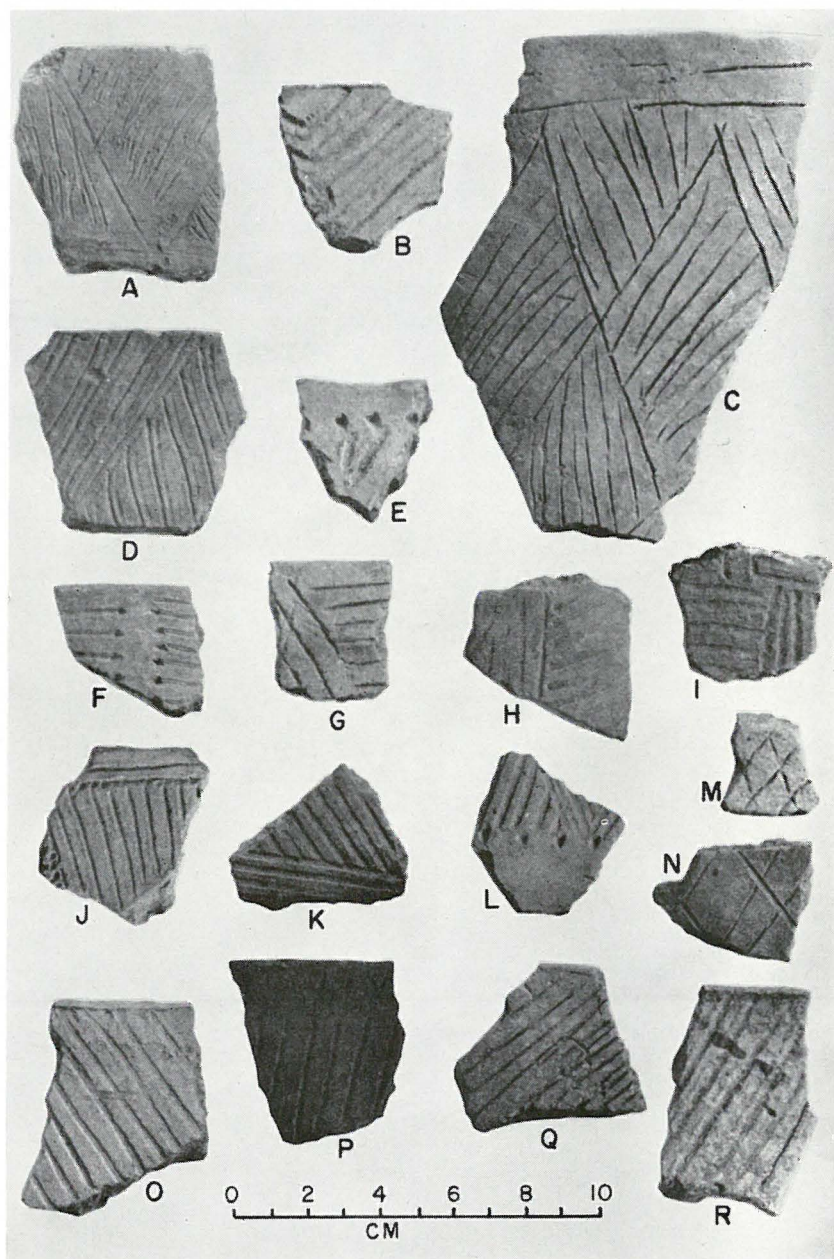
Incisions are generally bolder than in the *Kiam Incised* type, spaced 3 to 8 mm. apart, and seldom smoothed over. On the 117 sherds with lines in varying directions, 52 were made with a round-tipped tool, 47 with a pointed tool, 16 with square-tipped, and two with forked tool (Fig. 7, D). In the instance of the rim sherds with diagonal incising, 17 of the 25 slant downward from right to left (Fig. 7, P-R), eight from left to right (Fig. 7, O). The lines may produce diamonds (Fig. 7, C), triangles (Fig. 7, A, D, J), chevrons (Fig. 7, B) or, rarely, squares (Fig. 7, I). Hemiconical or oval punctations are placed in a single row below the incising in two instances (Fig. 7, L), above in one (Fig. 7, E). The trait of making firm punctations at the ends of the lines (Fig. 7, F, H-J) is more frequent than in type *Kiam Incised*, and gaps are left at times (Fig. 7, F). One sherd (Fig. 7, P) has a wide, smoothed band interrupting the previously placed incisions below the lip. The numerous body or rim-body sherds which show fields of varying incising more nearly resemble *Dunkin Incised* from the Davis Site in having full body decoration than the central Louisiana *Manchac* and *Mazique* types, where the decoration is usually confined to a narrow rim band.

Cross incising (Fig. 7, M, N), which is called *Harrison Bayou Incised* (from the Harrison Bayou Site on Caddo Lake) in central Louisiana, but is included in *Dunkin Incised* in eastern Texas (Suhm and Jelks, 1962: Pl. 19), is present on nine sherds from Smithport. They are clay tempered, light to dark gray in color, with smoothed surfaces. The incisions vary from narrow and closely placed to firm, wide lines.

Curvilinear incising is present on two sherds. These resemble curvilinear incising from the Sanson Site in central Louisiana which has been tentatively termed *Neild Incised*.

C. Punctated and Punctated-Incised Types

Pennington Punctated-Incised type is represented by 36 sherds (Fig.

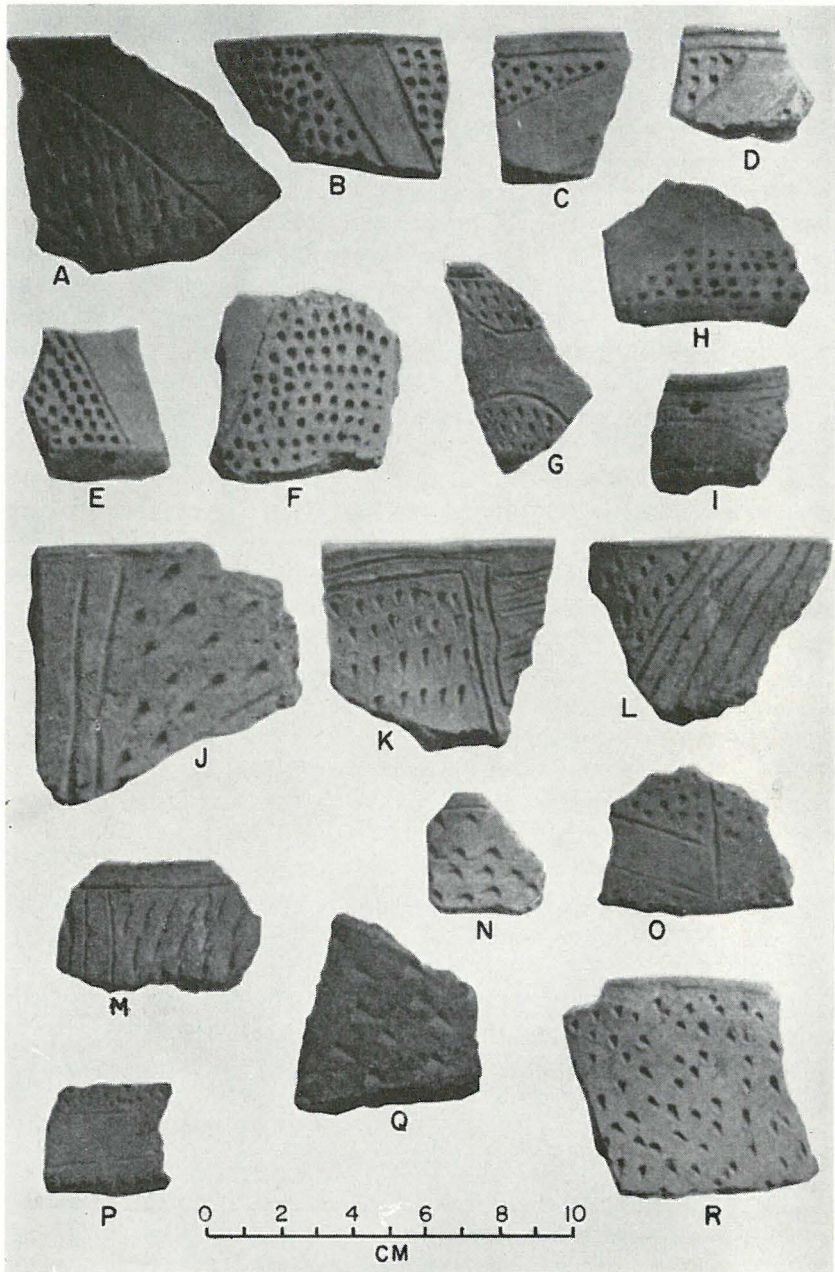


8, A-F). Most of these derive from open carinated bowls with excurvate rims which are 4 to 7 cm. in height, but a few seem to be rims of recurved jars. Eight are chocolate brown in color, others tan, gray and brown-black. The paste is firm, hard in all but two sherds, with smoothed but not polished surfaces. Two sherds are tempered with bone, the others with clay-grit or sherd. Wall thickness is in the range of 5 to 9 mm., most specimens being 6 to 7 mm. The punctations are consistently placed in fields which are outlined by single deeply incised lines; the fields are in diagonal bands, diamonds or triangles. The punctations and incised lines are bold and the 36 sherds include punctations made with a pointed or round-tipped tool in 23 instances, comma-shaped in four, square (Fig. 8, E) in five, and triangular in four.

Eleven sherds show the hybrid *Pennington-Crockett* design described in the Davis report (Newell and Krieger, 1949: 101). Shapes and paste characteristics are described above; two sherds are soft, chocolate brown in color. One has an incurving rim and a suspension hole (Fig. 8, I). The bordering incised line is curved (Fig. 8, G-I); otherwise these sherds do not differ from the *Pennington* type. Seven have rounded punctations, two are comma-shaped, one rectangular, and one square.

Another group of 19 sherds shows *zone punctations* which differ in certain respects from the typical *Pennington* described above and possibly are nearer to *Rhinehart Punctated* (Ford, 1951: 83-85). These 19 sherds (Fig. 8, J-O) have the same range of paste and coloration; five are of the softer chocolate brown ware. Rim and body sherds are represented and in only one instance (Fig. 8, O) is it certain that the rim is from an open carinated bowl as are the *Pennington* sherds. One heavy sherd (Fig. 8, J) which is 12 mm. thick, suggests a globular vessel which narrows at the neck and recurves to upright at the rim. Another sherd includes the lower rim area which is decorated with zoned punctations and incisions, and the adjoining upper body which is plain. Characteristic of this group is the alternation of punctated and incised fields, or the outlining of punctated zones by multiple incised lines. The punctations are triangular in three instances, square in one, comma-shaped in six, round or oval in five, small pits in three, and crescentic in one.

Fig. 7. Incised Sherds. A-L, *Dunkin Incised* (note C, a large sherd with typical design; punctations with lines on E, F, L: rectangular design on I). M, N, *Harrison Bayou Incised*. O-R, *Diagonally incised rim sherds, probably Dunkin Incised*.

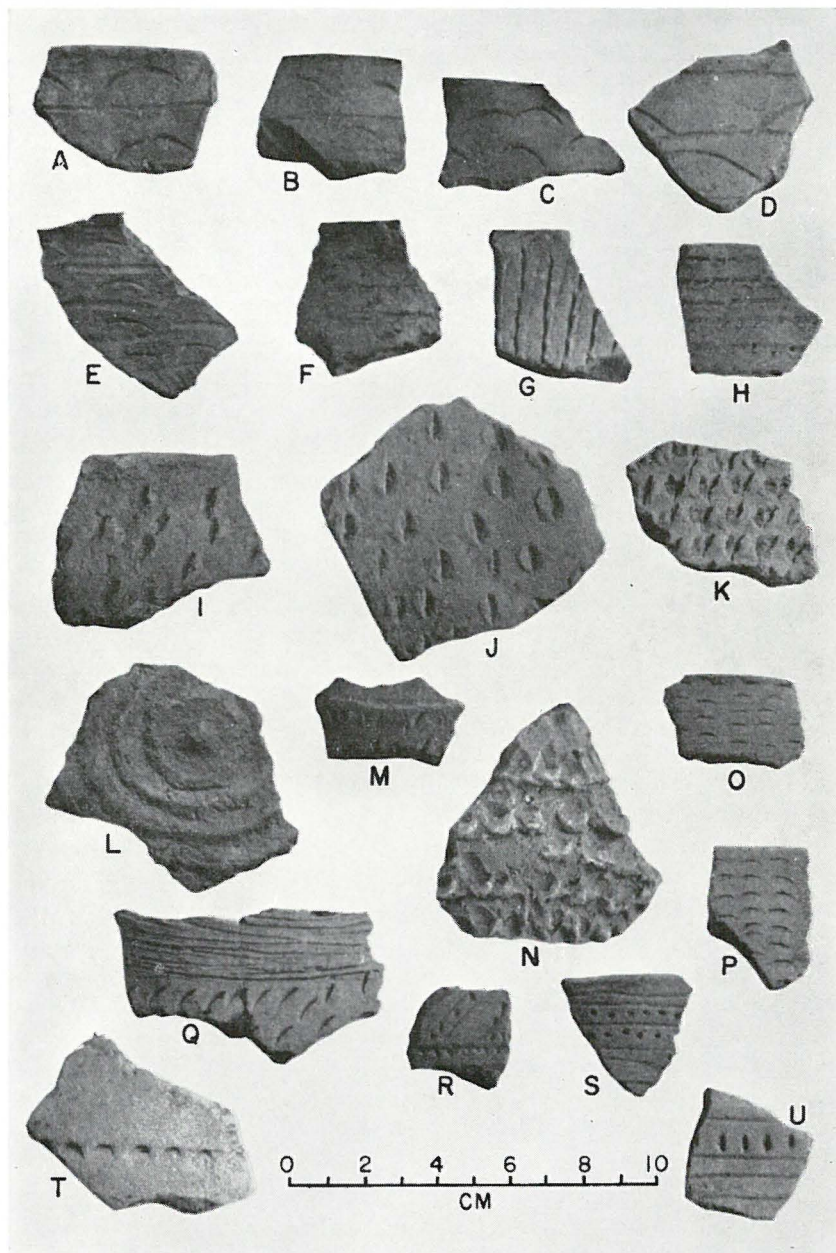


Free punctations made with tools, without zoning or incising, are present on one vessel (Fig. 4, I) and 19 sherds (Fig. 8, Q, R). Paste and color are as described above; one is bone tempered, six are soft, chocolate brown in color. Rim and body sherds are represented but shapes of vessels are uncertain. The punctations are triangular in seven instances, comma-shaped in three, square in five, round in three, and crescentic in two. The vessel (V-105) is a semiglobular bowl with plain body and scalloped, everted rim. The lower surface of the rim is covered with free punctations. The relative increase in frequency of triangular punctations in this group is significant, in view of the fact that the *Rhinehart Punctated* type in central Louisiana features triangular punctations (Ford, 1951: 83), whereas they are infrequent in *Pennington Punctated-Incised* at the Davis Site (Newell and Krieger, 1949: 106-8). The absence of ring punctations at Smithport is remarkable, in view of their frequency at both the Davis Site and in central Louisiana.

A group of six sherds has minute *free* or *zoned punctations*. The sherds are thinner walled than average, 4 to 6 mm., and five of the six have black surfaces and soft pastes. The sixth is buff colored, thin and has a strongly excurvate, narrow rim. Another (Fig. 8, P) is from an open carinated bowl and has notches along the carina. All of this group may relate to the Bossier ceramics at this site, instead of Alto. They bear some similarity to *Dupree Incised* of Plaquemine ceramics in central Louisiana (Quimby, 1951: 122-3).

Weches Fingernail Impressed (Suhm and Jelks, 1962: 153, Pl. 77; Newell and Krieger, 1949: 118-20, Fig. 46) is represented by 19 sherds of characteristic design (Fig. 9, A-E). Nine of these include the lip area, but all appear to be rim sherds. In three instances some of the subjacent body wall is attached; on two of these the body is plain, on the third (Fig. 9, E) the body has diagonal incised lines suggesting *Dunkin*-like decoration. These three have globular bodies and outward curving or slanting rims, 4 to 4.5 cm. high. Other vessels seem to be cylindrical with vertical rims, and open carinated bowls are possible. Five of the 19 sherds are chocolate brown in color with clay tempered paste; the others range from tan and buff to dark gray and reddish-brown. Wall thickness is in the range of 4 to 9 mm., the

Fig. 8. Punctated Sherds. A-F, *Pennington Punctated-Incised*. G-I, *Pennington-Crockett* hybrid (I has incurving rim, hole for suspension). J-O, *Pennington* or *Rhinehart Punctated* (N has triangular punctations between horizontal lines in Coles Creek tradition). P, Similar to *Dupree Incised* but shape suggests Bossier sherd. Q, R, Random punctations.



majority 5–7 mm. Typically, the decoration (Fig. 9, A, B, D, E) is with widely spaced horizontal incised lines with arcs or quarter circles between; the arcs could have been cut with the fingernail and occasionally are fingernail impressed, but in most the arc is too large, 1.8 to 4 cm. (my thumbnail is 1.6 cm. wide). Four of the sherds have the arcs without intervening lines (Fig. 9, C).

Four sherds are identical with this group except that the spaces between the horizontal lines have triangular instead of semilunar punctations (Fig. 9, F). Seven other sherds have round or oval punctations in single rows between incised lines (Fig. 9, R, S, U). I have not included these with type *Pennington Punctated-Incised*, as Krieger did with some reservation (Newell and Krieger, 1949: 106). Neither have I assigned them to *Coles Creek Incised*, *Hardy Incised* or *Rhinehart Punctated*, as Ford did, also probably with some reservation (Ford, 1951: Pls. 16, L; 17, 20, H), but have preferred to describe them separately as interesting examples of regional variations and typing difficulties in eastern Texas, and northern and central Louisiana.

One sherd (Fig. 9, T) has a single row of semilunar punctations and otherwise plain surface. It is thick, clay-grit tempered, and buff colored.

Wilkinson Fingernail Punctated type is represented by one vessel and 153 sherds. This was described as a minor type in central Louisiana (Ford and Willey, 1940: 50; Ford, 1951: 88–89) to include clay tempered vessels with fingernail punctations scattered over the vessel surface, arranged in irregular rows, or pinched in vertical rows. In that area it is rarely combined with incising and usually covers the entire vessel. Ford (1951: 88) thought it occurred at the latter part of the Coles Creek period and reached maximum popularity in the succeeding Plaquemine Period or later, but it was missing in Plaquemine context at Bayou Goula (Quimby, 1957) and Medora (Quimby, 1951) sites. In the Davis Site report (Newell and Krieger, 1949) it was not established as a type, as Krieger considered fingernail punctations to be a body treatment present in several types (*Kiam*, *Weches*, *Dunkin*, and *Duren Neck Banded*); he reported 20,000 body sherds with fingernail roughening from a total of 96,000 sherds. The difference in attitude

Fig. 9. Nail Impressed and Punctated Sherds. A-E, *Weches Fingernail Impressed*. F, *Weches Variant* with tool punctations. G, H, *Sinner Linear Punctated*. I-K, M-P, *Wilkinson Punctated*. L, Ridge pinched, similar to *Killough Pinched*. Q, *Wilkinson Punctated* body, *Kiam Incised* rim. R, S, U, Narrow bands with round or oval punctations. T, Single row of semilunar punctations.

toward this type on the part of these investigators is understandable when we consider the differences in frequency and use of the decoration method in the two areas, also that Ford and his co-workers used all sherds in typing, whereas Krieger translated sherds to vessels and used rim decoration as the determinant.

In northwestern Louisiana I have found *Wilkinson Punctated* a useful type in *sherd collection* studies because of its great frequency in Alto wares, its rarity in Coles Creek, and the rapid shift from nail roughening to ridging and brushing as body treatments concurrent with the development of Bossier, Belcher, and other later Caddoan ceramics. *Wilkinson Punctated* is therefore a good indicator of early (Altó) Caddoan occupation at a given site. At Smithport Landing there were 153 sherds (Fig. 9, I-K, M-P) and one burial vessel, a pinched toy jar (Fig. 4, Q), of this type. The vessel is 6 cm. high, 5 cm. wide, made of thick clay-tempered paste, roughly finished and decorated with three horizontal rows of nail pinching. The sherds include only four rims (Fig. 9, I, O, P), showing how rarely this decoration, in northern Louisiana, covers the vessel. Most of the other sherds are recognizably body sherds, and in eight instances (as in Fig. 9, Q) the body-rim juncture is present. The latter sherds have *Kiam Incised* decoration on the rim and appear to have come from a modified globular body shape with directly or mildly everted rim. Nine of the 153 sherds are bone tempered, the remainder are clay-grit or ground sherd, rather granular and coarse. The walls are thick in many instances, the range 4 to 10 mm. with the majority 7 to 8 mm. Many of the sherds are large (Fig. 9, I, J) indicating large, heavy jar forms. Surface colors range from tan and buff to dark grays and a few reddish-browns, with more tendency to darker colors than in other types. The majority have irregular fingernail gouges (Fig. 9, I, J), but some are pinched (Fig. 9, K, M, N) and others impressed more delicately and regularly (Fig. 9, O-Q).

Eight sherds have distinctly pinched-up ridges (Fig. 9, L) which are circular or curvilinear in six instances, vertical in two. The burial vessel (Fig. 4, Q) may belong with this group, although it has been tentatively classed as *Wilkinson Punctated*. The group with pinched ridges bears considerable resemblance to the type *Killough Pinched* (Suhm and Jelks, 1962: 91, Pl. 46) of Frankston and Titus foci, but, in the absence of other types characteristic of these assemblages, will not be so assigned.

Sinner Linear Punctated is a type which so far has been confined to Bossier and Haley foci (Suhm and Jelks, 1962: 143; Webb, 1948: 114)

and the four sherds of this type from the Smithport Landing, although similar in paste, thickness and color to the Alto sherds, are probably referable to the subsequent (presumably) Bossier period at this site. Two are rim sherds; one of these (Fig. 9, G) has parallel, vertical linear punctating; another (Fig. 9, H) and a body sherd have horizontal lines; the fourth is uncertain. All have linear nail punctating and the more typical linear tool punctating is absent.

D. Stamped Types

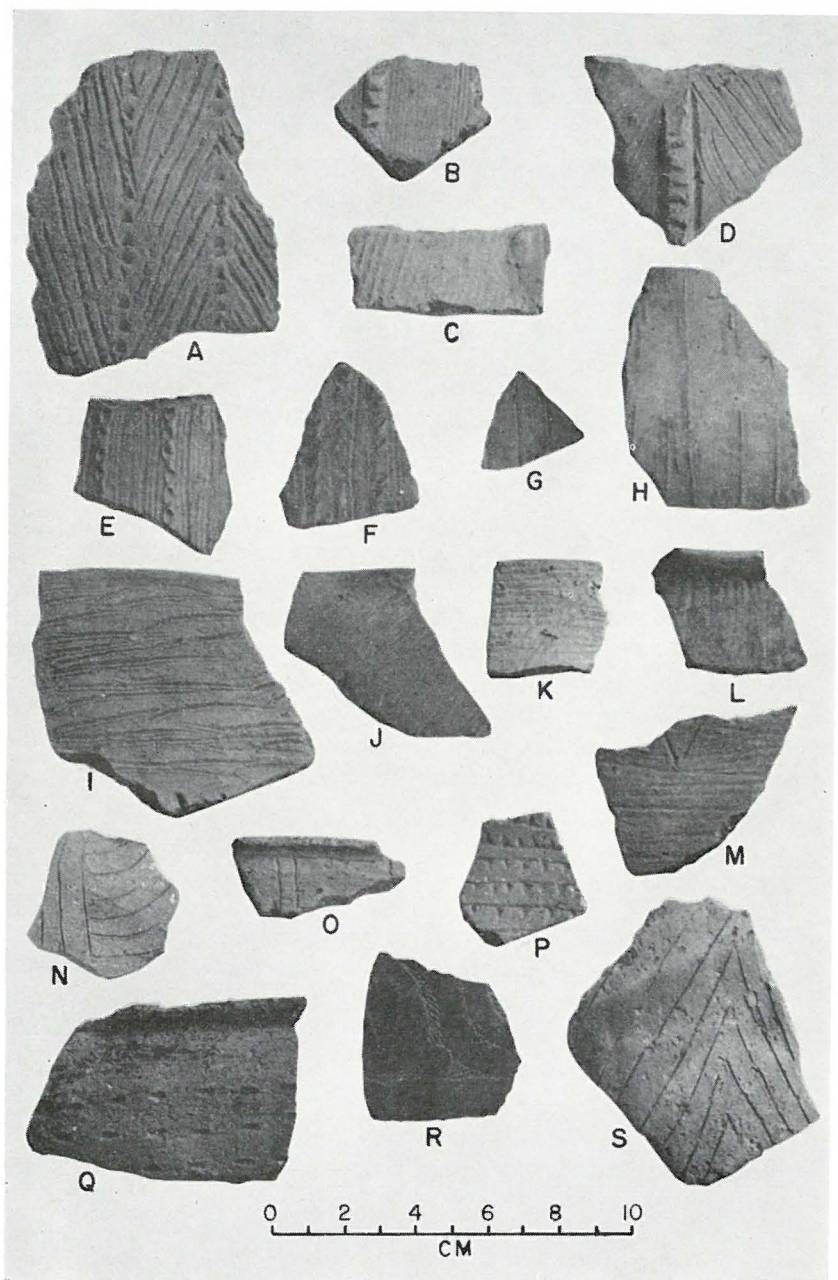
One sherd of *Chevalier Stamped* is small (3×2 cm.) but has definite rocker stamping. It is of firm paste, tan exterior surface color with a black fire cloud at one edge, and black interior. Paste is homogeneous clay-grit with several bone fragments (accidental?); both surfaces are smoothed but not polished. In general appearance it resembles many of the Alto sherds from this site.

E. Ridged Types

The eleven sherds of *Belcher Ridged* type (Fig. 10, G, H) are generally thinner and darker than the Alto wares. Six are dark chocolate to black on both surfaces and through the cores; the other five have light buff to dark gray surfaces, four of these with black cores. One is bone tempered, all others clay-grit. No rims are represented and the body sherds are 3 to 5 mm. in wall thickness. Typically, the elevated ridges are vertical.

F. Brushed and Brushed-Incised types

There are 38 sherds of the *Pease Brushed-Incised* type (Fig. 10, A-F). The paste is smooth, clay-grit tempered except for one bone tempered; interiors are smoothed, exteriors roughened all over with the decoration. The color range is about as for other types; eight sherds are chocolate brown to black and slightly soft. Thickness is 4-5 mm. in 13 of the 38 sherds, 5 to 9 mm. in the remainder. The vertical panels characteristic of this type are separated by notched applique ridges in 28 (Fig. 10, B, D-F), by rows of tool or nail punctations in seven (Fig. 10, A), and by applique nodes in three (Fig. 10, C). The panels are roughened by diagonal incisions in 24 instances (Fig. 10, A, C), by vertical incising in 10 (Fig. 10, E, F), by horizontal incising in one, and by brushing in three (Fig. 10, B, D).



Karnack Brushed-Incised type (Suhm and Jelks, 1962: 85) is applied to barrel-shaped vessels with everted rims, decorated with vertical incising or brushing. Thirty-four sherds from Smithport fit this category, although it is possible that some of the vertically incised body sherds derive from *Kiam Incised* or *Weches Fingernail Impressed* vessels. There are only three rim sherds, one rolled (Fig. 10, L), the other two everted. The paste, temper, color range, and wall thickness are no different from other types; seven of the sherds are dark chocolate brown in color. Only six sherds are less than 5 mm. in thickness and the average is 6.5 mm.; brushing is used on six of the sherds, vertical incising on the others, varying from firm to sloppy and scratchy.

The other brushed sherds from this site fall into the type which we now call *Bossier Brushed* (formerly *Maddox Brushed* included these and the vertically brushed included now in *Karnack Brushed-Incised*). It is very similar to or identical with *Plaquemine Brushed* type of the Plaquemine and late Coles Creek periods in central Louisiana. Chief indicated differences are rolled or narrow everted rims in some of the *Bossier* type, whereas they are direct or slightly everted in *Plaquemine*; more frequent cross brushing in *Plaquemine* than in *Bossier*; bone temper in a few of the *Bossier*, absent in *Plaquemine*; and an occasional row of punctations below the brushed zone in *Plaquemine*, not found in *Bossier*. These are minor differences, easily attributable to regional variations, and it would probably be desirable to define a single type, with recognition of minor local variations.

There are 31 *Bossier Brushed* sherds (Fig. 10, I-K, M), of which seven are from rims. Temper is clay-grit or ground sherd; one is bone tempered. Surface colors include two black, four chocolate brown, the others lighter shades of tan, buff, and gray. Only five sherds are 5 mm. or less in thickness; others are 5.5–11 mm., averaging 7.3 mm. (It is thicker than most types.) The seven rim sherds have horizontal brushing on two, diagonal on four, both on one. The body sherds show a similar distribution, with diagonal brushing predominating. Cross brushing or incising is present on seven (Fig. 10, M).

G. Smithport Plain Type and Other Plain Sherds

There are nine plain vessels (Fig. 4, A, B, K-P, R) from the burials

Fig. 10. Brushed, Ridged, and Late Wares. A-F, *Pease Brushed-Incised* (note panel separation by punctations on A, applique notched ridges on B, D-F, and applique nodes on C). G, H, *Belcher Ridged*. I-K, M *Bossier* or *Plaquemine Brushed*. L, *Karnack Brushed-Incised* (note rolled rim, rare). N-S, *Late Glendora Focus* sherds (N, S, shell tempered, incised; O, P, engraved, untyped; Q, linear punctated, untyped; R, *Hodges Engraved*).

and 644 plain sherds from this site which apparently relate to the earlier ceramics. The vessels, all identified as *Smithport Plain*, include three bottles, four simple bowls, one carinated bowl, and one recurved jar. *Smithport Plain* therefore runs the gamut of vessel forms common to decorated types; cylindrical jar forms are included in the sherds. The 644 plain sherds include 65 rim sherds (the only definite *Smithport* sherds), one-fourth as many as the total rim sherds in the decorated types and exceeded only by *Kiam Incised* with 82 rim sherds. The total number of plain sherds in our collection is altered by the element of selectivity in surface collecting; we were less likely to save plain sherds unless they were large or were rim sherds. The frequency of plain wares at this period contrasts with the situation in the later Bossier and Belcher ceramics, where undecorated vessels are infrequent. For example, at the Belcher Site (Webb, 1959) there were only nine plain vessels among the total of 195, and plain sherds constituted only 44 per cent of total sherds (most of these were from undecorated portions of decorated vessels).

The 65 *Smithport Plain* rims include 15 which are everted, 26 vertical, and 18 incurvate; additionally there are rims from two simple, shallow bowls, one rim with an exterior roll, one everted rim with interior bevel and exterior strap thickening, one bottle spout, and one shallow toy dish. The everted rims are unmodified in seven instances, and thinned in eight with rounded lips. Lip thinning of everted rims was effected by exaggerating the outward curve of the rim interior; that of incurvate bowls by exaggerating the exterior curve. The vertical rims are unmodified with rounded lips in 12 instances, thinned and rounded in eight, flat in four, and have beveled exteriors in two. The incurvate rims are thinned with rounded lips in nine, unmodified with rounded lips in five, flattened lips in two, externally beveled in one, and thickened with rounding in one.

The plain sherds include 20 recognizable as bases, nine of which are complete flat discs. These range from 6 to 13 cm. in diameter and are 6 to 12 mm. thick. One large basal sherd has a smooth central perforation, 13 mm. in diameter, and rounded edges. It possibly was used as a spindle whorl. These are frequently found at Bossier and Belcher sites, but usually are smaller and lighter.

An additional 46 plain sherds show the wall-base junction. Eight of these are from open flat bowls, one from a deeper bowl, one from a bottle, four from miniature vessels and 32 from jar, deep bowl or cylindrical vessel forms.

The plain sherds have paste characteristics similar to the decorated types already described. Nine of the 644 sherds are bone tempered.

Glendora Focus and Other Late Ceramics

A group of 37 sherds have characteristics completely alien to the ceramics described above. They are lighter feeling, often with porous surfaces or with obvious shell tempering, confirmed by tests. Eight are engraved; a shell tempered sherd, reddish in color (Fig. 10, P), with horizontal engraved lines from which triangular spurs project; four other shell tempered with red or orange color and engraved lines, untyped; two black shell tempered with indeterminate engraving, and one black polished clay tempered sherd of type *Hodges Engraved* (Fig. 10, R).

There are 11 sherds, shell tempered and orange to gray in color, with curvilinear incising (Fig. 10, N, S). This ware was once termed *Wilkinson Negative Meander* but was never formally described. Another name should be chosen, because the Wilkinson Site, like Smithport, is primarily Alto with transition to Bossier, and has a minimal late (Natchitoches) occupation.

Two sherds have linear punctations on shell tempered ware (Fig. 10, Q) and two others, untyped, have horizontal incising. There are 14 plain, 4–6 mm. thick, of which nine are shell tempered, two bone, three clay.

Other Pottery Artifacts and Negative Ceramic Traits

A fragment of perforated pottery base, presumably a spindle whorl fragment, was mentioned in the discussion of plain pottery. There were also three fragments of fired daub with grass impressions and one flattened surface. One tiny cone-shaped pottery fragment suggested a figurine or doll leg. No other clay or ceramic artifacts were found. Noticeable by their absence are pipes or pipe stem fragments, animal figurines or heads, clay labrets and ear ornaments, all of which are not unusual in this area.

Other negative ceramic traits are the absence of shell temper, except in the small group of obviously late wares; red filming; pigment impression into the lines of decoration; handles or other vessel appendages; squared bases (not unusual elsewhere in Coles Creek and Alto ceramics); squared or castellated rims (Vessel 105, Fig. 4, I is the only instance of scalloped rim); vessel effigies, either whole vessel or rim attachments; stamping (one foreign sherd), and cord marking.

POTTERY ALIGNMENTS AND SEQUENCES

Table I shows the assignment of burial vessel and sherd types to various ceramic complexes, based on the descriptions of Ford (1951), Ford and Willey (1940), and Quimby (1951) for central Louisiana; Newell and Krieger (1949), and Suhm, Krieger, and Jelks (1954) for east Texas Alto; and the author's publications (1948; 1959) and collections from northern and central Louisiana. It becomes apparent that neat typing and alignment of sherd collections from this site, true of many other sites in northwestern Louisiana, is a phantasy. This site lies within a broad contact zone, extending into southwestern Arkansas and eastern Texas, between the expanding populations and flowering cultures of the lower Mississippi-Red River confluence in central

TABLE 1

Pottery Type or Group

	<i>Whole Vessels</i>	<i>No. of Sherds</i>	<i>%</i>
Distinctive Alto Types			
<i>Holly Fine Engraved</i>		10	0.66
<i>Hickory Fine Engraved</i>	2	9	0.60
<i>Holly or Hickory Engraved</i>	..	6	0.40
<i>Carmel Engraved</i>	..	17	1.13
<i>Davis Incised</i>	1	17	1.13
<i>Kiam Incised vessels</i>	4	..	..
<i>Pennington Punctated-Incised</i>	..	36	2.40
<i>Pennington-Crockett Hybrid</i>	..	11	0.73
<i>Weches Fingernail Impressed</i>	..	19	1.26
<i>Smithport Plain</i>	9	65	4.36
Subtotal	16	190	12.67
Distinctive Coles Creek or Troyville Types			
<i>Coles Creek Incised</i>	..	8	0.53
<i>Chevalier Stamped</i>	..	1	0.06
<i>Mazique Incised</i>	..	2	0.13
Subtotal	..	11	0.72
Types shared by Alto and Coles Creek			
<i>Wilkinson Punctated</i>	1	153	10.20
Triangular punctations between parallel lines	..	4	0.26
Subtotal	1	157	10.46
Types shared by Alto, Coles Creek, Bossier and Plaquemine			

TABLE 1 (Continued)

Pottery Type or Group

	<i>Whole Vessels</i>	<i>No. of Sherds</i>	<i>%</i>
<i>Kiam-Hardy Incised</i>	..	174	11.60
<i>Dunkin-Manchac Incised</i>	..	182	12.13
<i>Harrison Bayou Incised</i>	..	9	0.60
<i>Sanson Incised</i>	..	9	0.60
Free and atypical zoned punctations (<i>Pennington-Rhinehart</i>)	1	38	2.53
Small, zoned punctations (<i>Dupree-like</i>)	..	6	0.40
Round punctations between lines	..	7	0.46
Isolated, semilunar punctations	..	1	0.06
Subtotal	1	426	28.40
Distinctive Bossier Types			
<i>Pease Brushed-Incised</i>	..	38	2.53
<i>Belcher Ridged</i>	..	11	0.73
<i>Sinner Linear Punctated</i>	..	4	0.26
<i>Maddox Engraved</i>	..	3	0.20
<i>Glassell Engraved</i>	..	2	0.13
Subtotal	..	58	3.86
Types Shared by Bossier and Plaquemine			
<i>Bossier-Plaquemine Brushed</i>	..	31	2.06
<i>Karnack Brushed-Incised</i>	..	34	2.26
Subtotal	..	65	4.33
Uncertain Affiliation or Untyped			
Curvilinear Incised	..	2	0.13
Untyped engraved	1	2	0.20
Plain body sherds	..	579	38.60
Fingernail pinched	..	8	0.53
Subtotal	1	591	39.46
Subtotal, Early Occupation	19	1498	100.00
Late Occupation, Possibly Historic			
Shell tempered curvilinear incised	..	11	..
Shell tempered engraved	..	7	..
<i>Hodges Engraved</i>	..	1	..
Other untyped decorated	..	4	..
Late plain	..	14	..
Subtotal	..	37	..
Grand Total	..	1535	..

Louisiana and Mississippi on one side and the four-state Caddoan area on the other, in post-Hopewell-Marksville times.

As a result (or as evidence) of this cultural admixture and interchange, we see large groups of sherds from this site, in the punctated and incised categories, which cannot with impunity be assigned to a previously described type in a specific cultural assemblage. They could be as easily assigned to a companion type in one, two or even three other surrounding assemblages. Only by having whole vessels available—from which details of vessel size and shape, and decoration can be determined—or by correlation of sherds with distinctive types, may one draw tentative conclusions about affiliation. I have therefore found it necessary (Table 1) to list certain types from this site as possibly deriving from Alto or Coles Creek ceramics, others from Alto, Coles Creek, Bossier or Plaquemine, and yet a third group of brushed and incised which might derive, insofar as characteristics of a given sherd or group of sherds indicate, from Bossier or Plaquemine. The absence of distinctive Plaquemine types eliminates this assemblage from consideration, but distinctive types of Alto, Coles Creek and Bossier are present and give our clues for major alignments. We should be able to work on the assumption that the indeterminate types will derive from the three complexes, Alto, Coles Creek and Bossier, in about the same proportion as these complexes are represented by distinctive types.

It appears, then, that the major complex at this site is Alto; certainly the burial pottery is of this complex. Coles Creek is present to a minor extent and it is probable that some of the uncertain punctated and incised sherds are from *Hardy*, *Manchac*, and *Rhinehart* types. Finally, occupation seems to have lasted into the Alto-Bossier transition to the stage when distinctive Bossier Focus types had developed, so that there is a respectable representation of this period. The brushed wares and some of the incised and punctated also probably relate to the Bossier pottery complex. It is improbable, however, that Bossier occupation lasted very long, certainly not long enough for a transition to late Glendora Focus times when the small group of shell tempered sherds would have been made. The site was probably deserted for a long time, then briefly occupied by late Natchitoches-related people, possibly in the historic period. The Yatasi village mentioned by Marcelo De Soto (D'Antoni, 1961a) is to be considered.

STONE ARTIFACTS

Dart Points

The 61 larger projectile points which are classified as dart points

are, with few exceptions, comparatively small and rough. Most are made of quartzite, cherts, and petrified wood found locally. Thirty five are of tan chert, four of petrified wood, two of red chert, six of white or light gray quartzite, and others of varying shades of brown, or mottled materials.

Gary points (Fig. 11, N-P) total 14; with most made of tan chert, two of petrified wood, and one of white quartzite. The range in length is 2.8 to 5.6 cm. with nine of the 14 in the category of *Small Gary* (Ford and Webb, 1956: 52). The latter are less than 4.5 cm. in length.

Ellis points (Fig. 11, Q-S) number 16, of which 12 are made of tan, gray or yellow local cherts, two of petrified wood. The length varies from 2.6 to 4.6 cm., the width 1.5 to 2.9 cm. Shoulders tend to be straight, only two having barbs. Stem bases are usually straight or mildly convex.

Carrollton points (Fig. 11, X), four in number, are made of materials different from the prevailing tan chert. One each is of granular quartzite, waxy gray chert, white chert, and black chert. They are 4.1 to 4.5 cm. long, 2.3 to 2.8 cm. wide. Stems are not smoothed.

Kent points total five (Fig. 11, T, U), and are typically crude in manufacture. They are of gray, tan, and mottled cherts. Lengths are 3.7 cm. to 4.5 cm., widths 1.6 to 2.4 cm.; they are somewhat smaller than those in eastern Texas (Suhm and Jelks, 1962).

The three *Pontchartrain* points (Fig. 11, EE, FF) are the largest and best made points from this site. Two are of light tan chert, the third of darker tan. Lengths are 7.7, 9.3, and 9.7 cm.; widths 2.5, 2.9, and 3.2 cm., respectively. The blades are rounded on one face, ridged on the other, have good large flake scars, and typical fine retouch at the edges. One (Fig. 11, FF) has an asymmetrically placed stem; another (Fig. 11, EE) has a rectangular stem and short barbs; the third has a contracting stem.

One projectile point (Fig. 11, Y) is hesitantly called *Ensor* because of the low, narrow side notches and straight stem base. It is small, 3.7 cm. long and 1.8 cm. wide, of tan chert, roughly flaked. The blade edges are convex and irregular serrated.

Two specimens have outlines like *Desmuke* points but are made of poor materials, petrified wood and gnarled chert, and the typing is questionable. Both are thick, with bifacial ridges. A third of similar appearance has an *Almage*-like basal tip, but is much smaller than this type, 5 cm. long, 2.5 cm. wide.

Two points are classified as *Elam* (Fig. 11, V, W). They are short, thick and stubby, slightly asymmetrical and identical in size, 3.5 cm. long, 2.3 cm. wide. They are made of tan and brown quartzite.

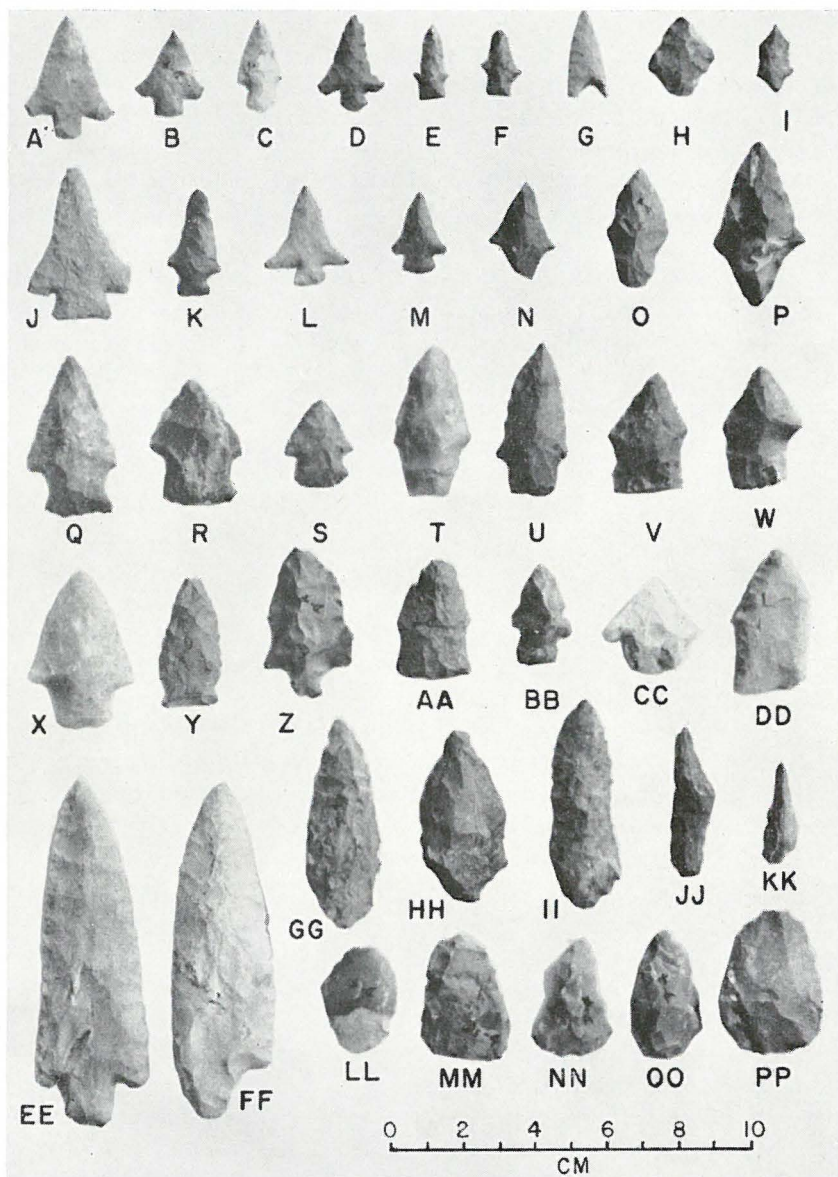


Fig. 11. Projectile Points and Chipped Stone Tools. A, B, *Alba* type. C, D, *Hayes*. E, F, *Friley*. G, *Maud*. H, *Cliffton*. I, *Unyped*. J, *Catahoula*. K-M, *Colbert*. N-P, *Gary*. Q-S, *Ellis*. T, U, *Kent*. V, W, *Elam*. X, *Carrollton*. Y, possible *Ensor*. Z-DD, *Untyped*. EE, FF, *Pontchartrain*. GG-II, *Rough blades*. JJ, KK, *Drills*. LL, *End scraper*. MM-PP, *Small triangular and ovate scrapers*.

Twelve projectile points are unclassified. Three of these are broken. A group of four (Fig. 11, Z) is characterized by rough manufacture, irregular wide blades with poor tips, and small, poorly formed stems. Similar specimens have been found at other sites in north Louisiana, never in large numbers. Possibly they were used as hafted knives or scrapers. One specimen (Fig. 11, AA) has long, shallow side notches which are smoothed and a stubby, poorly made blade. Possibly it is a reworked *Yarbrough* point or an atypical *Trinity* point. A small point of gray quartzite (Fig. 11, BB) has blade edge notches and expanded stem resembling *Evans* points, but it is much smaller than *Evans*. Similar small points with one to several blade edge notches have been found on sites in Bossier and De Soto parishes; they will probably be typed by another name than *Evans* (the name *Sinner* has been suggested because of their frequency at the Jim Sinner Site).

A small point of white chert (Fig. 11, CC) has a greater width than length; the base is wide and short; one shoulder is barbed, the other barely suggested. Another small point has a rectangular stem and triangular blade but is much smaller than *Carrollton*, or even *Elam* points.

The most unusual point (Fig. 11, DD) has a long rectangular stem, a small shoulder on one side only, and a short, asymmetrical blade. Blade and stem edges are beveled bilaterally on each face, with fine re-touch flaking which serrates all edges. The base is mildly concave and is thinned by removal of a long, shallow channel flake on one face, a shorter channel flake on the other, terminating in a hinge fracture. The base and lower stem edges are smoothed.

Arrow Points

There are 55 small projectile points sufficiently intact for typing and 12 broken so that typing is impossible. Materials include tan, red, brown, and gray chert from local gravels; two gray-white chert; one novaculite, and two dark brown to black flint.

Alba points (Fig. 11, A, B), 20 in number, are mostly of tan or reddish-brown local cherts. They vary from slender to wide, with a range of 2 to 3.8 cm. in length. Most recurve to form widened shoulders which may be right angled or barbed; edges may be mildly serrated. I have placed in this type only points with square or rectangular stems.

There are two *Hayes* points (Fig. 11, C, D), of gray and red-brown chert. They are small, 2.6 and 2.8 cm. long, 1.3 and 1.9 cm. wide; the

first differs from the type description in having straight edges and no barbs, but the stem shape is typical.

Five points are of *Friley* type (Fig. 11, E, F), characterized by definite shoulders with extreme curves so that the barbs turn toward the blade tip. Stems are expanded or rectangular. Three are of red-brown chert, two of tan chert. Lengths are 1.4 to 2.5 cm., widths 1.0 to 1.5 cm.

One typical *Maud* point (Fig. 11, G) of tan chert, has a deeply concave base and mildly serrated edges.

Four points are included in the *Cliffton* type (Fig. 11, H). They are hardly more than roughly shaped small, wide flakes but have vague stems and some secondary flaking. They are uniform in size, 2 to 2.3 cm. long, 1.6 to 1.9 cm. wide and all are made of tan chert. A fifth small point (Fig. 11, I) of dark gray flint has a pointed stem, concave blade edges, and a strongly pointed tip; in essence, it is a concave-edged hexagon. It may be a variation of *Cliffton*, but has been left untyped.

A group of 21 points (Fig. 11, K-M) is characterized by expanded stems produced by corner notching, and blades which are much like *Alba*. This point has been the subject of considerable discussion because of its frequency in Louisiana and southern Arkansas; it has been included in the *Alba* type in some publications, in the *Scallorn* type in others, but has distinct and, we believe, meaningful differences from each of these types. We have therefore given it the type name *Colbert*. It rivals the *Alba* type in frequency at sites like Smithport Landing, Colbert, Greer, Swanson's Landing, and Mounds Plantation (Fig. 1) where there are Alto and Coles Creek components in respectable amounts. It is found, along with *Alba*, in central Louisiana, especially in Troyville-Coles Creek context (Ford, 1951: Fig. 45, U-W). Recent excavations at the Crenshaw Site in southwestern Arkansas uncovered Coles Creek and Caddoan burials in Mound B; consistently the Coles Creek burials had points similar to *Colbert* (called *Homan* in Arkansas) and the Caddoan had *Alba* or *Hayes*. The *Colbert* points have triangular blades with concave or recurved edges, distinct and usually wide shoulders, barbs, and triangular or fan-shaped stems. The stem bases may be straight or more often convex, rarely concave. Specimens from Smithport are made of tan, reddish-brown, white and gray local cherts, one of novaculite, and two of white quartz. Lengths are from 1.2 to 3.2 cm., widths from 9 mm. to 2 cm.

A large flat point of tan chert (Fig. 11, J) has the flake characteristics of an arrow point despite its large size, 4.3 by 3 cm. It has the corner notching and wide barbs characteristic of *Catahoula* points.

A small triangular point of brown chert probably belongs to the *Fresno* type. The tip is broken but the original length was about 2 cm.

MISCELLANEOUS CHIPPED STONE TOOLS

Generally, the tools from this site are made from native tan chert cores and flakes, or from petrified wood, and are rough to the point of being almost nondescript. Imagination is often required to attempt assignment to types.

A massive axe-shaped object of petrified wood is worked to a near-blade form at the expanded end (Fig. 12, K), but appears to have been used as a maul. The groove is natural. It is 15 cm. long, 9 cm. wide, and 4.5 cm. in thickness. Two smaller objects of petrified wood (Fig. 12, G, H) are partially shaped, showing some of the original surfaces. They resemble choppers or picks and are $7 \times 5.1 \times 2.3$ cm. and $8.8 \times 4.7 \times 2$ cm. A fourth object of petrified wood, 10.5 cm. long and 4.2 cm. wide, is more suggestive of a pick but shows little evidence of use.

Smaller core tools include two choppers or end scrapers of tan chert and quartzite. The first has much of its original surfaces, with one end pointed by bifacial beveling. It is 5.5 cm. long. The second is uniaxially beveled across one end and onto one edge; it is similar in size. Two possible gouges of red and tan chert, 3.4 and 4.2 cm. long, are ovate in outline and roughly flaked bifacially at one end. Eight smaller objects are keel-shaped core scrapers or small choppers of tan and gray chert. They are irregularly ovate, triangular or elongate, from 2.5 to 4 cm. in length, 1.8 to 3.3 cm. in width. Flaking is bifacial but those with one flat face have minimal flaking on this side. Two larger, thick leaf-shaped forms (Fig. 11, GG, HH) may have served as knives or scrapers.

Other tools are made from flakes. Two might be knives: one (Fig. 11, II) is of gray chert, long and ovoid, rough at the base but well finished around the edges. It is 5.9 cm. long, 2 cm. wide. The second is made from a flat, triangular-shaped piece of petrified wood, which is unmodified at one end (the base), but has good secondary flaking around the edges. It is 5.1 cm. long, 3 cm. wide, and 6 mm. in thickness.

A thumbnail end scraper (Fig. 11, LL) is of gray quartz, 3×2 cm. in diameters, 6 mm. thick. Unifacial beveling on one end and one side is quite steep and the reverse face shows many tiny fractures around the cutting curve.

There are 15 small scrapers (Fig. 11, MM-PP) which are ovate or triangular in outline and made from flakes which vary from 3 to 8

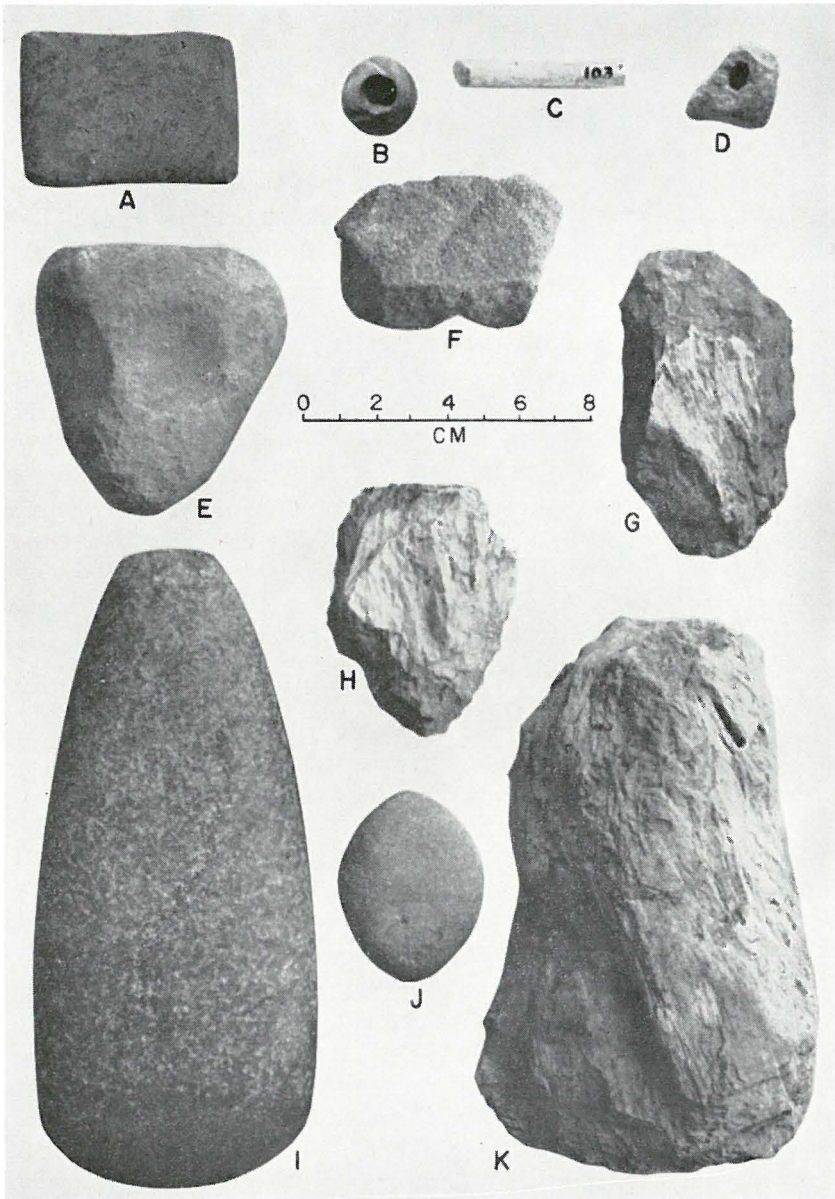


Fig. 12. Ornaments and Stone Tools. A, Polished stone tablet. B, Banded slate bead. C, Bone bead. D, Sandstone bead or concretion. E, Pitted stone. F, Brown sandstone whetstone. G, H, Choppers of petrified wood. I, Polished stone celt. J, Small hammerstone. K, Maul of petrified wood. (All to scale except B, C and D which are only slightly reduced.)

mm. in thickness. They are of tan, brown and mottled gray chert, petrified wood, and gray quartzite. Most are flaked bifacially but some show a preponderance of flaking on the convex face. Sizes range from 2 to 4.5 cm. Five small broken flake objects show some flaking.

There are four drills, all made of tan chert. One flake drill (Fig. 11, KK) has an expanded base, a shaft which is triangular in cross section and a keen point which shows use polish. A second (Fig. 11, JJ) has a geniculate form, is less well made, but shows usage at the tip. The other two are tiny, 2.1 and 2.2 cm. long, have one flat and one keel-shaped face, and are worked on two of the three planes. They could have been used as gravers or drills.

POLISHED AND GROUND STONE OBJECTS

Few objects of polished stone were found. One large celt (Fig. 12, I) is from the surface. It is symmetrically ovate, 17.5 cm. long, 7.5 cm. wide, and 3.8 cm. thick. It shows pecking marks on the faces, but is well ground at the bit and along the edges. A triangular hard sandstone pebble, $7.5 \times 7 \times 3.3$ cm., has round pits, 3 cm. in diameter, on each face, (Fig. 12, E). There are smooth depressions on two edges. A large pitted mortar stone is of ferruginous sandstone, 22×16 cm. One face has an oval depression, 13×12 cm., in the center of which, and on the opposite face, are deep hemispherical pits, 3.5 cm. in diameter.

An oval-shaped hammerstone (Fig. 12, J) of tan chert is smoothed on two faces, roughened by pecking around all edges. A whetstone of brown sandstone (Fig. 12, F) has one deep and two shallow grooves on one face, two grooves on the opposite.

A rectangular flat tablet of mottled brown slate (Fig. 12, A) was found during the burial excavations but not in direct association. It is 6 cm. long, 4.5 cm. wide, and 3.5 mm. thick. The faces are polished and the edges ground smooth with rounded corners, but there are no decorations or perforations.

A bead of gray and brown banded slate (Fig. 12, B) was found on the surface of Hill 1. It is pear-shaped, 9 mm. long, 12 mm. wide, counter-drilled and highly polished. A small perforated sandstone concretion (Fig. 12, D) may have been used as a bead, but the perforation seems to be natural, and the surfaces are not modified.

An oval, reddish claystone concretion was found on the surface. It is 12×6.5 cm., and 2.7 cm. thick. The hard cortex had been removed, exposing the soft ocher, which was a probable source of paint.

BONE OBJECT

A segment of bone, 2.6 cm. long, was found on the surface. The ends are cut squarely across and there is a small (natural?) perforation. It is probably a bead of bird bone (Fig. 12, C), is hard, very white, and the surface is polished. No other artifacts of bone or shell were found, but the test pits in dark soil exposed numerous animal bones as well as mussel and snail shells. No identifications were secured.

DISCUSSION

The Smithport Landing Site is one of a number of village and mound sites along the Red River valley and its tributaries in northwestern Louisiana (Fig. 1) at which varying amounts of Alto Focus pottery, whole vessels or sherds, have been found. The mound sites shown are within the river flood plain, with exception of Thigpen Mound and Village Site, which are on a terrace immediately overlooking the valley; Gahagan, Curtis, Mounds Plantation, and Belcher mounds are on old river channels near the present stream. The burial vessels at Gahagan were Alto types—five *Holly Fine Engraved*, three *Hickory Engraved*, one *Kiam Incised*—and 12% of the 76 sherds from the surface are the distinctive Alto types (*Hickory*, *Carmel* and *Holly Engraved*, *Davis Incised*, *Crockett Curvilinear Incised*, *Weches Fingernail Impressed* and *Pennington Punctated-Incised*). The Thigpen Site is preponderantly Bossier, but included in the scant collection of 102 sherds are one *Weches*, five *Dunkin*, and five *Wilkinson*. We have only a few sherds from the Curtis Mound (Sunny Point in Moore's 1912 report) but *Hickory Fine Engraved* is included. At the Belcher Mound Site (Webb, 1959) the premound level had sherds and burial vessels of both Alto and Haley types.

The Mounds Plantation (Pickett Landing in Moore's 1912 report) Site has recently been explored with some intensity (McKinney, Plants and Webb, to be reported). Twenty-six percent of the decorated sherds in the previous surface collection were of the distinctive Alto types, 4.15% Coles Creek. A trench through one of the mounds showed intrusive Belcher Focus burials but the fill, habitation, and premound level sherds were Coles Creek and Alto, with admixture at all levels but increasing amounts of Alto in the top levels. Alto types are *Davis* and *Harrison Bayou Incised*; *Hickory*, *Holly* and *Carmel Engraved*; *Pennington*, *Crockett*, *Wilkinson*, and *Weches* in the punctated and punctated-incised categories. Coles Creek types were *Coles Creek*, *Chase* and *Beldeau Incised*; *Rhinehart Punctated*; and the shared types

Hardy and *Sanson Incised*. Deep burials in a second mound had scant pottery but the two vessels were *Holly Engraved* and a bowl with *Crockett* and *Pennington* designs, both black and polished.

The non-mound village sites shown in Figure 1 are on hills fronting the valley or on tributaries and lakes. All of those shown have Alto and Bossier pottery types, most have Coles Creek-Troyville, all have a good representation of the shared types *Hardy-Kiam*, *Dunkin-Manchac*, *Harrison Bayou* and *Sanson Incised*, *Wilkinson Punctated*, and *Rhinehart*-atypical, *Pennington Punctated-Incised*. Omitting these shared types and using only distinctive types, the Allen Site has 7% Alto, no Coles Creek; the Wilkinson Site has 10.5% Alto, 0.3% Coles Creek; the Chamarre Site has 14% Alto, 1.5% Troyville; Williams Point has 4% Alto, no Coles Creek; East Smithport has 8% Alto, no Coles Creek; the Colbert Place has 1.6% Alto, 5.45% Coles Creek; Greer has 6.7% Alto, 1.8% Coles Creek; Pease and Sinner are strong Bossier sites but have 0.3% and 0.5% Alto, respectively; Swanson's Landing has 4% Alto and 4% Coles Creek; and Harrison Bayou has 1% Alto.

Not all of the mound or village sites in this same area show this kind of representation of Alto or Coles Creek; there are as many or more which are well developed Bossier sites and have little or no Alto. For example, we have 230 surface sherds from the Vanceville Mound in Bossier Parish with no Alto or Coles Creek types; the 3942 sherds from the lower and pre-mound levels of the Oden Mound include two questionable *Hickory Engraved*, no other Alto or Coles Creek types; 1275 surface sherds from the Marston Village Site show no Coles Creek, one *Holly Fine Engraved*, and three *Pennington Punctated-Incised*. In these same sites, as the distinctive types drop out, the shared incised and punctated types like *Dunkin-Manchac*, *Rhinehart-Pennington* variants, *Wilkinson*, *Harrison Bayou Incised* and even *Hardy-Kiam Incised* are almost completely replaced by *Pease Brushed-Incised*, *Belched Ridged*, and the brushed types (Webb, 1959). Large projectile points and heavy scraper types also disappear, replaced by small arrow point types and thumbnail-size, triangular and rectangular flake scrapers (Webb, 1959: Fig. 126).

The Smithport Landing Site shares with the other hilltop or hill slope village sites of this earlier Caddoan period the carry-over of late Archaic dart points, especially types like *Gary*, *Ellis*, *Kent*, *Carrollton*, *Palmillas*, *San Patrice*, *Evans*, *Maçon*, and *Pontchartrain*. Large as well as small scrapers, pitted stones, manos of hand size, oval metates, small drills, large and small celts, brown and white sandstone

hones, hammerstones, and crude choppers are usual at these sites. Triangular and ovate knives, recurved-edge (*Copena*-like) knives, stone beads and polished stone problematics (boatstones, bannerstones, gorgets) or plummets are all missing or very rare, although stone beads and problematics occur in the late Archaic. The slate bead from Smithport, a recurved (*Copena*) blade fragment from the Thigpen Site, and a two-hole gorget from a small site north of Wallace Lake (Webb, 1948: Pl. 16, 9) are exceptions. Small projectile points, generally of *Alba* and *Colbert* types, about equal the number of large ones at these sites. Ear ornaments, shell and bone tools are infrequent.

In conclusion, the Smithport Landing Site is one of the larger village sites of the earlier Caddoan (Gibson Aspect. Alto Focus) period along the Red River valley in northwestern Louisiana. It shares with a number of other village sites of this period evidences of a carry over of late Archaic projectile points and stone artifact traits. It also shares with numerous village and mound sites evidences of admixture of Coles Creek ceramic types and influences with the Alto pottery types as the earliest pottery at these sites. It seems increasingly clear that the advent of Coles Creek and Alto Caddoan peoples and/or ceramics, arrow points, and riverine mound building into this area were virtually simultaneous occurrences. Out of this blending developed the subsequent Bossier Focus ceramics and other cultural manifestations over a wide portion of northwestern Louisiana, extending into eastern Texas and southern Arkansas.

It is possible that the large ceremonial mound groups, like Gahagan and Mounds Plantation, served as ceremonial centers for a number of villages, including those in the adjoining hill areas, accounting for the frequency of specialized burials, with ceremonial copper and polished stone objects, pipes and ornamentation, and highly developed burial ceramics, in the mound sites, in comparison with the paucity of these objects in the hill villages.

Considerable research is needed (1) to establish the nature of the relationships between mound sites in the valleys and the villages in the hills; (2) to trace the extent of Coles Creek and Alto contacts and the process of amalgamation of these two strong cultures over the wide area from central Louisiana into Arkansas, Oklahoma and eastern Texas (this must have been friendly, as it is inconceivable that Caddoan peoples would have supplanted Coles Creek almost overnight in hundreds of villages); (3) and the development out of this amalgamation of Bossier, Plaquemine, and other later cultures.

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A Guide to Pottery Sorting, and the Meaning of Pottery Types and Attributes*

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ABSTRACT

This paper reviews basic procedures in the classification of pottery. Initially, specimens are sorted into descriptive groups made up of similar pieces, the similarities being based on common attributes—paste, design elements, and so forth. The next step is the setting up of types which are, basically, groups of attributes which appear repeatedly in a given area and time span. The types are established by tabulating the distribution of descriptive groups. Once established, types can be used in tracing historical relationships between prehistoric cultures. Attributes also can be used in this way, independently of types.

INTRODUCTION

The classification of prehistoric artifacts is, basically, a matter of grouping together specimens that look alike. The purpose is twofold. First, the specimens in each group can be described jointly, and this is better than having to describe hundreds of specimens individually. Second, if the sorting has been done judiciously, the groupings can be said to represent past customs, and hence can be used as tools in the work of reconstructing cultural history.

This paper is, specifically, about the sorting and classification of pottery. We start with a pile of potsherds from an archeological site, and we wonder what to do with them that will make it worth while having collected them in the first place. Four major steps are recommended: (1) sort the sherds into groups of similar specimens for purposes of description; (2) tabulate the groups according to the locations of the specimens; (3) see if the groups fall into types according to their distribution in the table; (4) use the types in establishing relationships among archeological complexes. It is also profitable, as a separate procedure, to tabulate the occurrence of the individual features on the

* This article is based on a paper given at the Pottery Symposium of the Houston Archeological Society, at the University of Houston, December 6, 1959.

specimens, and to use them in the same way that types are used in establishing sequences and relationships.

THE REASONS FOR DETAILED ANALYSIS

In this paper we will look into these procedures for setting up types; but first it is worth while to discuss whys and wherefores. The business of sorting and typing specimens is often dull work, and people who are otherwise much interested in archeology are likely to be quite unenthusiastic about this part of the subject. After all, it is the romantic side of archeology, not the rote work, which is one of its main attractions. Finding an implement actually made several thousand years ago can be quite a thrill, because it is a contact with the distant, inaccessible past. Real archeology, however, does not subsist on romance. In the training of every archeologist, be he amateur or professional, there comes a sorting-out process. The pot-hunters and pure romantics drop out in the course of the meticulous digging and recording, the cataloging of the specimens, the classification and description and reporting; and the real archeologists stick it out.

This is not to say that there is no romance to real archeology. The romance is there, the same feeling of contact with the past. But to make *real* contact with the *real* past, the detailed, careful, craft aspects of archeology are absolutely essential. The job cannot be done by enthusiastic day-dreaming.

Therefore, when we are confronted with a pile of broken pieces of pottery, our handling of them should be guided by the constant realization that we really are working to pierce the curtain of time. We intend to look into the past and find out what people were actually doing. It is a slow, careful job. This sort of work is the raw stuff of historical science.

SORTING INTO DESCRIPTIVE GROUPS

We start, then, with a collection of catalogued potsherds. Note that they have been cataloged. They are marked with numbers or letters which show, either directly or by reference to a catalog, where each one was found. If they have not been cataloged, it is not possible to follow through to the setting up of types and the exploration into the history of the makers of the specimens.

Obviously, if we are going to handle all these specimens, we must

organize them in some way or other, and describe them. It is not practical to describe each specimen individually unless there are only a dozen or so. Very evidently the collection has to be sorted into groups which can be handled as units. This, then, is our first job: to organize the collection into groups of specimens that look enough alike so that they can be described together. I shall call these groups *descriptive groups*.

The sorting is done by checking the individual features of the sherds. We call these features *attributes*. They include the nature of the paste, the temper, the surface treatment, shape of the vessel, method and design of decoration, and so forth (see appendix at end of this paper). In sorting, one goes over the sherds one by one, checking their various attributes, and putting them into different piles, each pile representing a first guess as to what should be a descriptive group. The job usually involves going through the collection more than once, since one's ideas as to what the proper divisions should be are likely to change and become more definite as more and more specimens come under scrutiny.

The main rule in this procedure is to work with what is there, and to have as few preconceptions as possible. One should not worry about the groupings that have been worked out in other collections, or about what the books say. It is best to be as independent as possible at this stage of the work. Try sorting according to some likely combination of attributes—tempering material, color, design—and if the first attempt does not work, try another combination. In other words, find out how *these* sherds sort on the basis of their own characteristics. The object is to get them into groups in which the sherds are enough alike so that the groups can be described. As part of the work, one should also keep his eyes open for sherds that fit each other; in this way the lucky worker may end up reconstructing parts of the vessels, or perhaps even entire vessels.

Having accomplished the sorting, the next job is to write descriptions of the groups. This writing is important, because when you have to put things down on paper it is not possible to be as careless as when you are merely thinking about them, and frequently you learn new things about the material in the course of the writing.

The very fact that the pottery can be sorted into groups means that the people who made the pottery had repetitive habits, which resulted in certain features of manufacture appearing on numerous sherds and numerous vessels. In other words, we have already recreated a bit of prehistoric behavior.

SETTING UP TYPES

Now that the material has been sorted into descriptive groups and has been described, we can use it for either of two different kinds of archeological analysis. First, we can use the material in tracing relationships between the people who made it and other groups of people—ancestors, relatives, descendants, or neighbors. This is called *historical analysis*, and it is our main concern here. Second, we can make inferences as to the part the specimens played in the life of the people using them; this is *functional analysis*.

It is appropriate to point out the usefulness of functional analysis, even though it is not the primary concern of this discussion. In many areas, as in the Southwestern U.S. or the Caddoan Area in northeastern Texas, one can combine the descriptive groups into a few large functional categories—cooking and utility vessels, burial vessels, ceremonial vessels, and the like. This sort of analysis, if done with considerable caution, can be a major key in reconstructing the life of the past.

Our major concern here, however, is to use the pottery in retracing history—in detecting relationships and developments between different peoples. We are looking for pottery classes that reflect customs which were transmitted from one group to another, and from one generation to another. Such customs necessarily existed in given areas and in given time spans. Therefore we want to find pottery categories which hang together in time and space; and these will be our *types*. Thus, a type is basically a group of attributes which appear repeatedly together on specimens from a given area and within a continuous time span. Less precisely, a type is a group of similar specimens from a single time and space span. An example of a modern artifact type would be a given make and model of an automobile, represented by thousands of individual cars identified by a series of specific attributes—grille design, body outline, features of the engine, and so forth.

Setting up types is a laborious but fairly straightforward process, in which the main step is the making out of a distribution table (see, for example, Table 1). Across the top of the table, one lists the find spots—the places where the specimens were found. These will be such things as grid squares and levels, stratigraphic zones, parts of the site, particular burials, or (in the case of a surface survey) sites. Down the side are listed the descriptive groups which have resulted from our sorting. Thus we have a vertical column for each find spot, and a horizontal line for each descriptive group. Then the specimens are

taken one by one, the find spot for each one is determined from the catalog, and a mark is made for that specimen in the appropriate place on the table.

Once the table is made out, it is possible to see how certain descriptive groups hang together, whereas others have independent distributions. Perhaps two or three of the original descriptive groups share a number of attributes and always, or nearly always, occur together. If so, they can be put together and called a possible type. We say possible, because the conclusion needs to be checked at other sites to make it firm. If surface collections are being tabulated, some descriptive groups may occur more frequently on certain sites and much less frequently on others; in this case one would suspect that types are emerging from the study.

If you are lucky, someone else will have done similar work elsewhere in your area, and will have described and tabulated his material as carefully and clearly as you have. If so, you can extend your tabulation on the basis of his material. If he has described his original groupings properly, you might find that his and your groupings coincide, each study verifying the other and making a good case for setting up types. On the other hand, you might find reasons to re-group his material on the basis of the further information in your table. Revisions of this sort are now going on, for instance, in the classification of Caddoan brushed pottery.

THE USE OF TYPES

We have now been through the main steps in the establishment of types. The use of types in detecting relationships between archeological complexes is a subject which we can only treat briefly here. An archeological complex, such as the Aransas Focus or the Galveston Bay Focus, is a group of attributes and types, manifested on artifacts and structural features, which recur together repeatedly in sites from a particular area and time span. Such a complex is presumed to represent a group of people who had a common culture; they lived alike. When two separate complexes, such as the Galveston Bay Focus and the Toyah Focus, have certain artifact types in common—*Perdiz* points, for instance—this fact has some meaning in terms of contacts between peoples and the spread of customs. Such complexes are said to be related; how closely related depends on the number of traits

(types and attributes) they have in common. If a type persists in time through several succeeding foci, it gives an indication of cultural continuity from one focus to the next. For instance, Dr. Clarence Webb has recently shown that the Caddoan pottery type *Pease Brushed-Incised* first appears in the Haley Focus and lasts through the succeeding Bossier Focus. The cultural continuity thus demonstrated, combined with the evidence of other types and attributes which also persist from the Haley Focus to the Bossier Focus, gives clear evidence that the Bossier Focus developed from the Haley Focus.

THE USE OF ATTRIBUTES

Although this paper is primarily about pottery types, it is well to point out what has already been indicated in the preceding paragraph: that individual attributes can and should be used in the same way as types, and quite independently of types, in working out prehistoric relationships. It is both possible and practical to make out a distribution table in which each horizontal line is devoted, not to a descriptive group, but to a single attribute—for instance, shell temper, asphalt paint, conical vessel base, or squared lip. The attributes that show a clear time and space distribution on the table, rather than being scattered at random, evidently represent customs just as our types do, and we can make use of them in identifying prehistoric cultures and in detecting relationships between different cultures. The usefulness of attributes has often been overlooked because of an over-emphasis on setting up types, and useful information is neglected thereby. As a matter of fact, there are collections in which it is hard to set up good types; but the attributes can always be utilized to advantage. The analyst is therefore cautioned not to ignore the lowly attributes; they are often as useful as the types. Examples of profitable utilization of attributes, independent of types, can be seen in the studies of the history of certain design concepts in the pottery of the Southeast (Ford, 1952), or of glaze paint in the Southwest (Kidder and Shepard, 1936: 601-628).

SOME GENERAL CONSIDERATIONS

Returning to the matter of pottery types, four general considerations are worth emphasizing.

First. The word "type" is best restricted to those categories which appear to have a given time and space distribution as indicated by

field evidence. People are likely to be careless with the word "type," and to use it in many ways. As a result it is often hard to tell just what some of the categories mean, and whether "types" set up by different people can be effectively compared with one another. Matters will be helped if we restrict the use of the word to groups with specific time and space distributions.

It should be noted, in this connection, that the descriptive groups into which we first sorted our material may or may not correspond to types; the tabulation will show which ones do correspond to types, and which ones do not. Such purely descriptive categories as our preliminary descriptive groups should not be called "types" unless it is established that they have historical significance—that they had continuity in time in a given area.

Second. Types set up from sherds are *sherd types*; types set up from rim sherds are *rim types*; types set up from whole vessels are *vessel types*; and there are other sorts of types. These different kinds of types are not necessarily equal to one another in significance, but they are all useful. Vessel types are doubtless the most valid in the study of past customs, because the Indians made vessels, not sherds. Sometimes, however, sherds are all you have, and in that case you may have to work with sherd types. Obviously it is important that the worker make it clear what sort of type he is talking about.

Third. There are hardly ever firm lines between types. Most classification is a matter of breaking up a continuous series. In every collection there are some sherds which can be put in more than one category. For instance, one type may have developed from an earlier one; in that case where are you going to draw the line? Good judgment is necessary here, and the main problem must be kept in mind: to set up categories which will be most helpful in tracing relationships between sites and complexes, and thus will tell most about the history of customs.

Since judgement enters into the classification, it is natural that different workers will draw the lines in different places. For instance, some people (the "splitters") customarily divide a collection into many small types, whereas others (the "lumpers") feel it is most useful to set up a few broad, inclusive types and, if necessary, subdivide them into subtypes or varieties. There is no final answer to such differences of opinion except that the worker must not only describe his types, but also must tell how he went about setting them up. Then his work can be used and compared with that of someone else who may have come

up with different results because of having gone at the problem in a different way.

It should also be evident, from these considerations, that type definitions will be changed as more studies are made and more knowledge is gained. The problem, after all, is not to set up types, but to understand what happened in the past. To that end, as studies progress, new types will be set up and old types may be dropped. A type may be split into two or more new types if it seems to clarify matters; or several old types may be combined into a single new type. Still other types will stand the test of time.

Fourth. There are always some specimens that cannot be classified into one type or another. They make up the "miscellaneous" column in the tabulation. They constitute the "residual category." These mavericks should not be forced into one type or another; the analyst should face facts and throw them into a pile marked "unclassifiable." Naturally, one tries to put as many of the specimens into descriptive groups as possible; but at the end of the job, it is to be expected that there will remain a pile made up of stubborn specimens each of which stands by itself. Any of them that seem significant should be described individually; otherwise one need only make a few general remarks about why the unclassifiable sherds have presented difficulties.

SUMMARY

We can recapitulate briefly the matters discussed in this paper. The pottery from each archeological project should be sorted on its own merits, divided into *descriptive groups*, which are batches of similar pieces having a number of features (*attributes*) in common. These descriptive groups are the units to be worked with in setting up *types*, which are groupings of attributes with definable space and time distribution. A type has meaning in history; otherwise a grouping should not be called a type. In pottery several kinds of types are possible, such as sherd types, rim types, or vessel types. Types can be expected to grade into one another, and drawing the lines between them is a matter of judgment in the job of most clearly reconstructing the past. Therefore, in presenting a classification, the procedures as well as the results should be described. There will naturally be differences of opinion as to matters of classification, and type definitions will change as further studies are made. A few specimens will always defy classification; they may or may not be important. Finally, the establish-

ment and utilization of pottery types should be supplemented by the study of the distribution of individual attributes, which are as useful as types in the study of culture history.

The procedures described here for the classification of pottery may also be applied to other classes of artifacts, such as chipped stone projectile points, shell ornaments, or bone tools. The ultimate objective is the reconstruction of a valid picture of the past, presented in such a manner that it may be checked against the work of others. Thus we may gain a broader perspective on the course of human events. Types and attributes are tools to that end, and they should be formulated and utilized accordingly.

APPENDIX: LIST OF ATTRIBUTES FOR CLASSIFICATION AND DESCRIPTION OF POTTERY

This is an outline list of many of the terms used in working with pottery. In a brief presentation such as this, the list cannot aim to be exhaustive or to give a full explanation of every term. The best way to become acquainted with pottery analysis, short of doing it oneself, is to study professional reports of archeological projects in which pottery collections are analyzed (for basic references see Colton, 1953; Shepard, 1957).

PASTE

Method of Manufacture: often this is difficult to determine.

Coiled—built by adding rolls of clay in a continuous spiral, or in rings, from bottom to top. Traces of coils, incompletely smoothed out, can sometimes be detected, and sometimes breaks occur evenly along otherwise invisible coil lines.

Modeled—built up from a lump or lumps.

Wheel-made—can be detected by the even parallel curves of the smoothing lines on interior surfaces.

Molded—made in a mold; found in Middle America and South America.

Temper: foreign material mixed into the clay to prevent cracking during drying and firing. Temper can usually be seen with a hand glass where there are fresh breaks.

Common tempering materials are: sand, clay, grit (crushed rock; the rock can often be identified), shell, bone, crushed sherd (hard to distinguish from clay at times), fiber (vegetal material).

Texture: the fineness of the paste, usually shown on broken surfaces.

Described as coarse, medium, or fine.

Hardness: this is an indication of how well the material was fired. The standard mineralogical hardness scale of 1 to 10 (Mohs' scale) is usually used.

Color: usually stated as dominant surface color and variations from it; differences between color on interior and exterior surface of vessel; difference in color between surface and core of paste, as seen in fresh breaks; addition of a slip—a thin layer of clay different from the clay used in construction of the vessel. Color is sometimes described precisely with the use of a color dictionary, such as those by Munsell (Copper, 1941) or Maerz and Paul (1950).

Surface finish (as distinguished from decoration): rough, bumpy, smoothed, roughened, burnished (rubbed almost to a polish), polished, brushed, stamped with a paddle or stick, fabric impressed. Some techniques, such as brushing, can be used as surface treatment or as design, or both.

FORM

Wall thickness: usually given in millimeters; note whether the base is thicker than the walls.

Rim: the margin of the vessel mouth, where it is distinguished from the rest of the vessel body by a change in the direction of the wall, by thickening, or by other differences.

The rim may be incurved, outcurved (flaring), vertical, straight, thickened, or with other variations.

Lip: the top of the rim; the juncture of inner and outer surfaces at the mouth of the vessel.

The lip may be sharp, rounded, flattened (squared), tapered, turned in or out, thinned, thickened, scalloped.

Base: may be convex, concave, flat, pointed.

Vessel size: the various dimensions—diameter, height, width of mouth, etc.—are usually given in the metric system.

Vessel shape: the shape needs to be described in detail, and illustrations are most important.

Some of the terms used are: bowl, jar, bottle; globular, hemispherical, conical, long and tapering.

Appendages: handles, lugs, nodes, etc.

DECORATION

Technique:

Incised—cut with sharp instrument.

Trailed—cut with blunt instrument. Trailing and incising grade into each other.

Engraved—cut with sharp instrument after the clay is dry.

Punctated—punched with the end of a stick, with fingernails (“fingernail punctate” or “fingernail impressed”) or with some other instrument.

Pinched.

Ridged.

Appliqué—clay strips added to the surface for a relief design.

Cord impressed—design created by pressing a cord into the clay.

Cord-marked—paddled with a cord-wrapped stick; this is usually a surface treatment rather than a decoration, but is sometimes done to make designs.

Brushed—may be a rough surface treatment, or may be part of a design.

Stamped—in the Texas area, largely restricted by stamping with the edge of a shell, sometimes toothed (“dentate stamped”). In “rocker stamping,” the shell is “walked” across the clay surface, producing a zigzag pattern. Elsewhere there are many other kinds of stamping.

Neck-banded—the neck coils are not smoothed out, but are left as a design.

Modeled—the clay has been modeled, often into realistic forms (effigy pottery).

Painted.

Design: the design must be described, and illustrations should be used.

Here such terms are used as: circles, squares, diamonds, straight lines, curved lines, hatching, cross-hatching, spirals, scrolls, ticked lines, steps, and so forth.

It should also be specified where the design occurs: on the base, body, shoulder, neck, rim, or lip of the vessel.

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A Guide to Archeological Reconnaissance

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ABSTRACT

The purposes and techniques of archeological reconnaissance or survey, particularly as they apply to Texas, are discussed. Specifically reviewed are the preparatory steps necessary before going into the field, the actual reconnaissance, and the analysis of the sites recorded and the materials collected.

INTRODUCTION

This brief article is designed to set forth, in an abbreviated fashion, some of the most important features of archeological field surveying, as it might be practiced in Texas and similar geographic areas. For those individuals who may wish to pursue the topic further, a select listing of recommended articles and books on the subject is provided in the attached bibliography.

Field survey, or reconnaissance, involves the systematic search for archeological sites and the proper recording of their location and characteristics. Another feature is the collecting of surface (and, less commonly, subsurface) materials which can be studied to obtain information on the physical and cultural nature of the site.

A proper foundation in the goals and techniques of archeological reconnaissance is essential for amateur and professional archeologists alike. Regrettably, many institutions and amateur societies dedicated to the study of archeology have been content to assemble miscellaneous bits of information reported to them by others, rather than conduct their own investigations of specific geographic areas. However, the knowledge that can be acquired from planned reconnaissance is manifold: it can be highly valuable for determining limits of specific cultural complexes; for making distribution studies of specific archeological traits; as well as for conducting other types of research which make use of comparative data. Invaluable information on aboriginal population size, settlement patterns, etc., also emerges from careful surveys.

Thorough regional surveys should be an integral part of the pro-

gram of all organizations that engage in archeological field investigation. The information obtained from them will not only clarify and supplement the results of previous excavations and research, but will prepare a basis for future work. This is especially true with respect to salvage archeology. In this, the archeologist is engaged in a race against time where extensive construction activities (viz., dams, reservoirs, highways, housing) will lead to the destruction of archeological sites. Governmental agencies such as the River Basin Surveys of the Smithsonian Institution and the National Park Service, as well as state and local organizations, must carry out adequate surveys of these regions. Well-founded descriptions of the sites and the materials collected permit evaluation of the sites so that priority in the excavation schedule can be determined. Limitations of time and funds preclude the excavation, usually, of all sites found during any survey. Nevertheless, when the most significant sites can be located in time for study and excavation, an appreciable amount of important data and materials can often be saved from destruction or serious damage.

It is perhaps in the field of archeological reconnaissance that local groups of amateurs have the greatest opportunity for making a substantial contribution to the field. Many groups which have neither the time, funds, nor technical training necessary to carry out extensive excavations can nevertheless make worthwhile surveys in their own areas. Employing methods similar to those set forth herein, these societies can unify the labors of their members and thus obtain much important information. To accomplish this end, a central file may be established to which each individual can contribute data he has gathered and recorded according to standards set forth by the organization. Many such groups engage in archeological surveying activities on week ends or during other free time. This work can be done by individuals or by several persons constituting a small field party. Fairly large tracts of land can thus be covered, and when the sites are accurately located and evaluated, the information can usually be published in a scientific journal as a survey report.

For the amateur living in a region where there are no local organizations, similar survey methods, modified to fit the imposed limitations, can be applied successfully. The adoption of a site numbering system and an adequate method for recording locations and for describing and evaluating the data is just as obligatory for a single individual as for a large organization. The amateur archeologist, working alone, can engage in the same type of investigation undertaken by large groups. Although this work will necessarily be on a smaller scale, he will still

be able to acquire important information about the region which he studies, provided that he work carefully and maintain accurate records.

PREPARATIONS

Before going into the field, there are a number of preparatory steps to be taken regardless of the extent or duration of the trip planned. To begin with, a thorough study should be made of previous archeological research in the area to be covered. This preliminary library work involves an examination not only of the published reports and papers, but also of unpublished site records and field notes. In addition to data contained in the archeological references, helpful information can many times be found in ethnographic and historical accounts of the region.

By means of this review of the extant literature, the field worker should acquire a familiarity with the cultural units represented in the area, the nature of the sites which are generally encountered there (i.e., small open occupation sites, large masonry structures, etc.), and the artifact types which have been established. A knowledge of the local system of culture classification and the terminology utilized by other investigators in the same region will make one's descriptions more easily correlated with the earlier work.

Helpful details can also be gleaned from old field journals, when they are available. For example, earlier workers in a particular locality often solved practical problems of transportation, food requirements, and living conditions in a fashion best suited to the area; these data are frequently set down in their field journals. The present investigator is thus, with this information, spared the necessity of experimenting for himself and, perhaps, of making costly mistakes.

Another phase of preparation for field work which should be considered is the first-hand examination of a considerable quantity of the materials (pottery, stone artifacts, or what not) which may have been recovered previously from sites in the area. A familiarity with these objects will assist the investigator in making his own identifications.

Personal visits or other communication with former workers is also worthwhile since these people provide many useful insights into local problems, based upon actual experiences.

The following institutions have conducted most of the archeological research in Texas and possess records describing the results of their investigations:

- (1) Texas Memorial Museum, Austin

- (2) Department of Anthropology, The University of Texas, Austin
- (3) Texas Archeological Salvage Project, The University of Texas, Austin
- (4) Witte Memorial Museum, San Antonio
- (5) Panhandle-Plains Historical Museum, Canyon
- (6) Sul Ross State College, Alpine
- (7) The Museum, Texas Technological College, Lubbock
- (8) Smithsonian Institution, Washington, D.C.

Also, numerous local archeological and historical societies throughout the state have records of their work which would likely be of benefit to the investigator. By combining the information obtained from professional institutions, local organizations, and from archeologists and amateurs who are familiar with a particular region, the field worker can acquire a fairly accurate picture of the ground to be covered before he actually takes to the field. In this manner he will be able to progress more rapidly and accurately than if he had proceeded without first having made these preliminary investigations.

Another important feature of this preparatory study is the acquisition and careful examination of maps. Among those in Texas which can most frequently be used to good advantage are the following. There are, of course, many others.

- (1) *U. S. Geological Survey (USGS)*: A series of quadrangle topographic maps ranging in scale from 1/24,000 to 1/125,000; these maps, however, cover only a portion of the state.
- (2) *Texas State Highway Department*: General Highway Maps prepared for the various counties, with scales of 1/126,000, etc.
- (3) *United States Forest Service*: Maps for those areas in the state which lie within National Forests.
- (4) *United States Army Corps of Engineers, Bureau of Reclamation, and Private Engineering Company Maps*: These maps cover areas of construction and are especially useful for salvage archeology projects.

The USGS topographic maps are particularly useful for examining details of terrain as an aid in locating archeological sites. By carefully studying drainage systems, river flood plains, terraces, bluffs which might contain rockshelters or caves, etc., one can often select the appropriate areas in which to concentrate one's endeavors. Of course the distribution of archeological sites in any area may not follow a general pattern, but when a pattern emerges, the task of locating new sites becomes much simplified. It must be realized that these distribution patterns, when they do occur, differ from region to region, and that

it is advisable to review the reports and works of investigators who have been in the area previously, in order to determine the nature of any such pattern.

The county highway maps can be best used for determining the most suitable access roads, studying the types of road surfaces, and making plans for operations during inclement weather. Quite often small roads and trails are shown on these maps, and a knowledge of them can be of great aid in planning the route for entering relatively inaccessible areas. Care should be taken, however, to note the date of publication of the maps in view of the fact that changes in highways and road systems are frequent in some areas.

The USGS topographic maps may be acquired from the Office of Map Information, U. S. Geological Survey, Washington 25, D.C., or they may be purchased from any large engineering company or surveying office in the major cities. The county General Highway Maps may be purchased from the Texas State Highway Department, Austin, or at the county seats of the various counties.

Of some limited use to the field worker are the soil maps published by the U. S. Department of Agriculture, Bureau of Soils, Washington, and the Geologic Map of Texas, published by the Bureau of Economic Geology, Austin, Texas. These maps can sometimes be of aid in locating and identifying river terraces, alluvial formations, and other significant natural features. This information may aid in locating sites of some geologic antiquity, particularly the frequently buried sites of the Paleo-Indian and Archaic cultures. When relationships between certain types of archeological sites and geological formations have already been established, these maps and similar geologic publications show the researcher where to direct his studies.

In recent years much attention has been given to aerial photography. Good aerial photographs, or composite maps made from these photographs, can be used successfully as supplements to the topographic sheets. Detailed information about specific natural features and vegetation, and sometimes even archeological sites themselves can be discovered from such photographs. For example, a disturbance on the ground will show on a photograph as a difference in tone, either because of a variation between the color, or the reflecting power, of the particular feature (or area) and its surroundings. By way of illustration, the shadows formed by mounds, thick midden areas, or raised structures can readily be recognized. So, too, can the darker areas caused by concavities in the earth's surface representing pit houses, borrow pits, or other man-made depressions. In certain regions

differences in soil color, due to the presence of a rich, dark midden humus, can be recognized. For best results, two photographs taken from slightly different angles should be observed with a stereoscope in order to produce a three-dimensional view, thus emphasizing the relief. Such photographs, however, are not easily obtainable, and the cost of having them made is extremely high. Excellent aerial photographs of much of the United States can be purchased from the U. S. Soil Conservation Service, Department of Agriculture, which has offices located in the various county seats.

Another preparation which cannot be overlooked before starting actual field reconnaissance is the establishment of a site designation system for recording the finds. For professional archeologists or institutions working in Texas, the three-part numbering system of The University of Texas is recommended: (1) state number (41 for Texas), (2) county abbreviation, and (3) the site number within the county. For example, the George C. Davis Site of the Alto Focus has been assigned the number 41CE19, indicating that this is the 19th site located in Cherokee County (CE), Texas (41). For a complete listing of county abbreviations see Table 1.

The amateur who would like to coordinate his investigations with those of major institutions, may report the sites which he locates to some university or museum in his area. The report should be made in a manner which conforms to the recording specifications of that institution. In this way numbers will be assigned to the sites and the amateur may then utilize them in his own records. Not only will these organizations acquire new data through this arrangement, but the amateur will also profit. First, he will probably have access to additional information which the university or museum already has recorded in its files. Second, his site designation problem is solved since he is provided with official numbers. Finally, cooperative relations are fostered between the professional institution and the amateurs in its area.

There are a number of less complex systems for designating sites which are quite adequate and are, in fact, preferred by many amateurs and local archeological societies because of simplicity and ease of application. For example, sites may be numbered solely by employing the county abbreviation and a site number within that county. Thus, HZ-2 is site number 2 in Hudspeth County; another possibility is to employ the initial of the investigator's surname plus a number assigned to the site. Hence, J-105 is the 105th site located by Mr. Jones.

TABLE 1

COUNTY SYMBOLS FOR ARCHEOLOGICAL SITE DESIGNATION

TEXAS (41)

Anderson.....AN	Crane.....CR	Hartley.....HT	Madison.....MA	San Patricio..SP
Andrews.....AD	Crockett.....CX	Haskell.....HK	Marion.....MR	San Saba.....SS
Angelina.....AG	Crosby.....CB	Hays.....HY	Martin.....MT	Schleicher....SL
Aransas.....AS	Culberson....CU	Hemphill....HH	Mason.....MS	Scurry.....SC
Archer.....AR	Dallam.....DA	Henderson...HE	Matagorda...MG	Shackelford..SF
Armstrong....AM	Dallas.....DL	Hidalgo.....HG	Maverick....MV	Shelby.....SY
Atascosa....AT	Dawson.....DS	Hill.....HI	McCulloch...MK	Sherman.....SH
Austin.....AU	Deaf Smith..DF	Hockley.....HQ	McLennan...ML	Smith.....SM
Bailey.....BA	Delta.....DT	Hood.....HD	McMullen...MC	Somervell....SV
Bandera.....BN	Denton.....DN	Hopkins.....HP	Medina.....ME	Starr.....SR
Bastrop.....BP	De Witt.....DW	Houston.....HO	Menard.....MN	Stephens....SE
Baylor.....BY	Dickens.....DK	Howard.....HW	Midland....MD	Sterling.....ST
Bee.....BE	Dimmitt....DM	Hudspeth...HZ	Milam.....MM	Stonewall....SN
Bell.....BL	Donley.....DY	Hunt.....HU	Mills.....MI	Sutton.....SU
Bexar.....BX	Duval.....DV	Hutchinson..HC	Mitchell...MH	Swisher.....SW
Blanco.....BC	Eastland...EA	Irion.....IR	Montague...MU	Tarrant.....TR
Borden.....BD	Ector.....EC	Jack.....JA	Montgomery..MQ	Taylor.....TA
Bosque.....BQ	Edwards....ED	Jackson....JK	Moore.....MO	Terrell.....TE
Bowie.....BW	Ellis.....EL	Jasper.....JP	Morris.....MK	Terry.....TY
Brazoria....BO	El Paso....EP	Jeff Davis..JD	Motley.....MY	Throckmorton.TH
Brazos.....BZ	Erath.....ER	Jefferson...JF	Nacogdoches..NA	Titus.....TT
Brewster....BS	Falls.....FA	Jim Hogg...JH	Navarro.....NV	Tom Green....TG
Briscoe.....BI	Fannin.....FN	Jim Wells...JW	Newton.....NW	Travis.....TV
Brooks.....BK	Fayette....FY	Johnson...JN	Nolan.....NL	Trinity.....TN
Brown.....BR	Fisher.....FS	Jones.....JS	Nueces.....NU	Tyler.....TL
Burleson...BU	Floyd.....FL	Karnes.....KA	Ochiltree...OC	Upshur.....UR
Burnet.....BT	Foard.....FD	Kaufman....KF	Oldham.....OL	Upton.....UT
Caldwell....CW	Fort Bend..FB	Kendall....KE	Orange.....OR	Uvalde.....UV
Calhoun.....CL	Franklin...FK	Kenedy.....KN	Palo Pinto...PP	Val Verde....VV
Callahan....CA	Freestone..FT	Kent.....KT	Panola.....PN	Van Zandt....VN
Cameron....CF	Frio.....FR	Kerr.....KR	Parker.....PR	Victoria.....VT
Camp.....CP	Gaines....GA	Kimble.....KM	Parmer.....PM	Walker.....WA
Carson.....CZ	Galveston..GV	King.....KG	Pecos.....PC	Waller.....WL
Cass.....CS	Garza.....GR	Kinney.....KY	Polk.....PK	Ward.....WR
Castro.....CAS	Gillespie..GL	Kleberg....KL	Potter.....PT	Washington..WT
Chambers...CH	Glasscock..GC	Knox.....KX	Presidio...PS	Webb.....WB
Cherokee...CE	Goliad.....GD	Lamar.....LR	Rains.....RA	Wharton.....WH
Childress..CI	Gonzales...GZ	Lamb.....LA	Randall....RD	Wheeler.....WE
Clay.....CY	Gray.....GY	Lampasas..LM	Reagan.....RG	Wichita.....WC
Cochran....CQ	Grayson...GS	La Salle...LS	Real.....RE	Wilbarger...WG
Coke.....CK	Gregg.....GG	Lavaca....LC	Red River...RR	Willacy.....WY
Coleman....CN	Grimes....GM	Lee.....LE	Reeves....RV	Williamson...WM
Collin.....COL	Guadalupe..GU	Leon.....LN	Refugio....RF	Winn.....WN
Collingsworth.CG	Hale.....HA	Liberty....LB	Roberts....RB	Winkler.....WK
Colorado....CD	Hall.....HL	Limestone..LT	Robertson...RT	Wise.....WS
Comal.....CM	Hamilton...HM	Lipscomb...LP	Rockwall...RW	Wood.....WD
Comanche...CC	Hansford...HF	Live Oak...LK	Runnels....RN	Yoakum.....YK
Concho.....CJ	Hardeman...HX	Llano.....LL	Rusk.....RK	Young.....YN
Cooke.....CO	Hardin....HN	Loving.....LV	Sabine.....SB	Zapata.....ZP
Coryell....CV	Harris....HR	Lubbock...LU	San Augustine.SA	Zavala.....ZV
Cottle.....CT	Harrison...HS	Lynn.....LY	San Jacinto..SJ	

FIELD RECONNAISSANCE

Assembling necessary field equipment is the first step in beginning actual explorations. There are, of course, many items which can be of use; however, the following brief list of materials will probably fulfill the requirements of most situations.

1. *Cameras and accessories.* Any sturdy, easily usable camera is suitable for the field.
2. *Maps.* These have been described above in the section on preparations.
3. *Army compass or Brunton pocket transit.*
4. *Measuring tapes.* A 100-ft. steel tape and a small 6-ft. or 8-ft. steel tape.
5. *Hand or eye level.* This is used for obtaining approximate elevations or for drawing maps.
6. *Machete or brush knife.* Used for clearing undergrowth.
7. *Shovel.* One with a rectangular blade is useful for digging small test pits and cleaning walls of erosional cuts.
8. *Mason's trowel.* Used for the same purpose as the shovel, but for work on a smaller scale.
9. *Sacks.* Of paper, or cloth, for collecting specimens.
10. *Whisk broom and paint brushes.* For cleaning exposed features.
11. *Looseleaf notebook.* This should contain lined paper for notes, graph paper for sketches and maps, site survey forms, and carbon paper for duplicate copies if desired.
12. *Pencils.* No. 2 or 3 for general writing, 3H for drawing, and perhaps a set of colored pencils for maps.
13. *Protractor with straight edge.* For making sketch maps.
14. *Scales.* A device in inches or the metric system to be used in all photographs to show scale of site and features.
15. *Directional Arrow.* Of fairly large size and painted white; for indicating direction of north in photographs. This may be combined with item 14.
16. *India ink and crow quill pen.* For placing catalogue numbers on specimens collected in the field.
17. *First aid kit* (snake bite kit may likewise be useful).
18. *Canteen.*
19. *Knapsack, or the like.* For convenience in carrying equipment, food, etc.

At the beginning of the reconnaissance the survey party ought, if possible, to interview people in the area from whom useful information or assistance might be secured. Visits may be made to local construction contractors, research institutions, museums, and libraries. Amateurs, collectors, and "old timers" who may have an intimate knowledge of the geography and history of the area may also be sought out and consulted. By carefully explaining the nature and purpose of the proposed study, the investigators can often interest others in their

activities and thereby obtain valuable information and assistance. Needless to say, establishing cordial relations with influential persons in the area to be visited is sometimes important. It is helpful to explain to these people—especially to those who are civic-minded and interested in the history and background of their community—the significance and goals of the research which is to be undertaken. Such individuals can frequently pave the way for smooth personal dealings with possible informants. This is a phase of archeological investigation which should not be overlooked.

Another important factor in the planning of a reconnaissance trip is the division of the area into convenient sections which can be covered singly. In this way several persons or groups can work over different parts contemporaneously, and much time may be saved in the preliminary search.

The next task is to make a quick trip through the entire area to be surveyed, accompanied, if at all possible, by local people. This is necessary so that the survey party can become familiar at the the outset with the topography, the roads, and the over-all situation which will confront them.

Next, any sites which have been reported by local informants should be visited, mapped, and recorded. Then the investigators are ready to choose one of the divisions of the area in which to begin an intensive reconnaissance. By utilizing information obtained from the reports of other workers and from topographic maps, the survey group will be in a position to select the most likely geographic locations (i.e., river terraces, river bottoms, cliffs with caves, etc.) in which to begin their search. After one area has been completely reconnoitered, work in a new division is begun. By carefully explaining the purpose of the work to landowners and tenants and by asking permission to search for sites on their land, tactful and considerate field workers can accomplish infinitely more than those individuals who barge through the countryside leaving gates open and treading upon crops and who, in general, are inconsiderate of the rights and privacy of others.

Some familiarity with the type of sites frequently encountered in an area is often necessary in order to be able to recognize archeological sites readily, assuming, of course, that previous investigations have been carried on. Generally speaking, sites are recognized by surface indications which may consist of potsherds, fragments of bone, shell, flint debris, or other remains of human occupation and activity. Frequently the discoloration of soil in long-inhabited spots and the dense vegetation which feeds on humus-rich midden soil offer clues to the

existence of a site in the locality. For instance, the difference in the density, color, and height of cotton or other crops in large fields may serve as an indication of occupation zones in many sections of the state. For sites of very great antiquity, especially belonging to Paleo-Indian cultures, some previous experience with similar localities and a knowledge of geology are often necessary for accurate field identification.

When an archeological site has been located, a minimum-data *Site Survey Form*, such as the one presented here, should be carefully completed and any other information, not specifically called for on the form, of possible importance should be recorded and attached to the form. A sketch map of the site, drawn to scale, perhaps on graph paper, should also be prepared and attached to the form. Duplicate copies may be made of both the form and sketch map for the use of other individuals and institutions.

SITE SURVEY FORM

1. SITE NO. 2. STATE..... 3. COUNTY
4. LOCATION
-
-
-
5. TYPE OF SITE
6. CULTURAL AFFILIATION
7. OWNERSHIP DATA
-
8. INFORMANTS
9. SITE DESCRIPTION
-
-
-
10. AREA OF OCCUPATION

- 11. PRESENT CONDITION: vegetation
cultivation..... erosion.....
- 12. CHARACTER AND DEPTH OF FILL
- 13. PREVIOUS INVESTIGATION OR EXCAVATION
- 14. PREVIOUS DESIGNATIONS FOR SITE
- 15. WORK DONE BY SURVEY: surface collection....., test pits,
excavation.
- 16. MATERIAL COLLECTED
- 17. MATERIAL OBSERVED OR REPORTED
- 18. POSSIBLE OBSTACLES TO WORK
- 19. PHOTOGRAPHS..... 20. MAPS OF SITE.....
- 21. RECORDED BY..... 22. DATE.....

EXPLANATION OF SITE SURVEY FORM

- 1. *Site No.* The site should be assigned a number in accordance with the recording system used by the particular field workers, institution, or archeological society.
- 2. *State,* 3. *County.* Fill in where applicable. In other states the township and range designations should also be included.
- 4. *Location.* Include the following data: (a) location by land surveys where possible, and (b) location by distances from towns, road junctions, or natural geographic features. These distances should be measured, if possible, with the automobile mileage indicator.
- 5. *Type of Site.* It should be stated whether the site is an open occupation site, a burial area, a rockshelter, a ceramic or lithic site, etc.
- 6. *Cultural Affiliation.* This may be determined by an examination of artifacts or features present. Frequently this is not possible until the completion of the laboratory analysis of the materials collected.

7. *Ownership Data.* Here should be included the name and address of the owner of the land, as well as the names and addresses of tenants and former owners, when the information is available. The attitude of the owner towards further investigation or excavation should also be ascertained and recorded.
8. *Informants.* The names and addresses of any persons whose aid led to the location of the site should be included to aid future investigators.
9. *Site Description.* After the site has been thoroughly investigated, data on the geographic and topographic setting, the position of the site with respect to water, natural features, houses and other man-made objects, and any additional items which the recorders consider pertinent should be noted in this space.
10. *Area of Occupation.* For large sites this should be estimated in acres; for small sites in terms of feet, yards, or meters. In some instances tape measurements can be made.
11. *Present Condition.* The presence of vegetation or cultivated areas and the degree of soil erosion should be carefully described.
12. *Character and Depth of the Fill.* The nature and depth of the soil deposits, or fill, can often be ascertained by cleaning and examining road cuts and erosional cuts. Where no such examination is possible, a few small test holes, only a few feet in diameter, may be dug at shallow sites. Data from these investigations should be recorded as follows: "surface to 8 inches, plow zone; 8 inches to 18 inches, dark, humus-stained sand, etc." Any such test pits should be recorded carefully in the notes and sketch map, and should be marked in the field, for example, by including a bottle or other modern artifact in the pit before it is refilled, in order to prevent any misinterpretation of the feature by later investigators. It is a problem to say just how much subsurface investigation is desirable during a survey. At some sites it may be feasible to carry on rather extensive testing. It is frequently desirable in determining the vertical extent of midden soil, for instance, to establish a coordinate grid system upon the surface and to sink pits with an auger at regular intervals on the grid pattern. Portable motor-driven augers, designed for use by two people, are available for this type of testing. In particular sites, such as those at which elaborate subsurface features are suspected, proton-magnetometers and like devices may be successfully used.
13. *Previous Investigation or Excavation.* An entry is to be made when a site has been previously recorded or excavated. Give the source of information and references to publications if any exist.
14. *Previous Designations for Site.* Include here all the former names or designations for the site whether applied by local inhabitants, amateurs, or professional archeologists. List all sources of information or bibliographic data.
15. *Work Done by Survey.* Check appropriate spaces.
16. *Material Collected.* While the site and adjacent areas are being investigated, surface artifacts and other material of interest should be collected and placed in properly labelled bags. In the field it is sufficient to state that the material collected includes "potsherds, projectile points," or whatever. Sometimes a field number is placed on an artifact as soon as it is found in order to insure that its correct location will be recorded. This is especially important in the case of stone axes, pottery vessels, and other objects which may conceivably be handled before they are sent to the laboratory. After a laboratory examination of the artifacts is completed, they should be tabulated by type and quantity and this tabulation should be attached to the site survey form.

17. *Material Observed or Reported.* This section should be used for recording materials which were said to have been collected at this site, but which are in the possession of others.
18. *Possible Obstacles to Work.* This space should be reserved for describing situations which might interfere with excavation, such as thick, tangled underbrush, or the lack of coöperation on the part of the landowner.
19. *Photographs.* Several photographs, taken from different vantage points, should be made of the site. It is helpful to include natural features and man-made objects so that the site may easily be identified. Photographs should be assigned field numbers and recorded on a field photograph record form. The field numbers assigned should be recorded both on the field photograph record and in section 19 on the Site Survey Form.
20. *Maps of the Site.* This space is provided to indicate that a map of the site has been prepared and is attached to the field survey form. The sketch, preferably drawn to scale on graph paper, should give information which would be useful to any individual trying to locate the site. In it should be included (1) an approximate distance scale, (2) a directional arrow, (3) the main geographic features such as hills, streams, etc., (4) heavy vegetation such as woods, thickets, swamps, etc., (5) cultivated fields, (6) houses or other man-made structures, (7) roads or paths, fences, walls, telephone poles, etc., (8) the area of the aboriginal occupation as can be determined from surface indications, preferably shaded in colored pencil, and (9) any other important features or landmarks.
21. *Recorded by.* The names of the individuals responsible for completing the site survey form should be listed here.
22. *Date.* Give the date or dates when the survey was made.

Information, in addition to that on the site form, that may be pertinent at some sites includes (1) approximate elevation of the site above mean sea level, when determinable from topographic sheets or nearby surveyors' benchmarks, and (2) the coördinates of the site in degrees, minutes, and approximate seconds of latitude and longitude if this information can be determined from maps at hand.

When this examination has been completed, the exact location of the site is to be plotted on the USGS topographic sheets, county road maps, or other maps used by the survey party.

In practically all instances a *field journal* proves to be of immense value not only for the investigators conducting a reconnaissance expedition, but also for subsequent investigators who may wish to review the work, the trials and tribulations of their predecessors. Some important data which may be included in a day-by-day account of happenings during the survey are the names and addresses of informants along with the information which they provided, details concerning the use and functioning of equipment, and an account of the expenses incurred during the progress of the survey.

ANALYSES

When the survey party has returned from the field, the artifacts which were collected should be washed and catalogued. The maps and field notes, together with the photographs, should be organized and filed for further reference. It is suggested that amateur societies establish a general or central file to which individuals can contribute copies of the site data forms and notes which they have made in the field. Thereby an appreciable quantity of important information can be compiled through the years.

After proper cleaning and labelling, the artifacts from the various sites should be spread out for examination, and typological studies should be made. After this analysis has been completed, seriation studies are often possible; the areal distribution of artifacts can likewise be plotted. The importance of surface collections for establishing the distribution of artifact types should not be underestimated, for the results of such studies, limited as they be by lack of stratigraphic data, can nevertheless add much to the understanding of the archeological situation in a particular area.

Finally, after the completion of this work, recommendations for the future excavation of important sites should be made to those institutions and agencies which engage in excavation. Usually the sites which are selected for intensive study are those which (1) seem to offer unusual data not yet encountered in the area, (2) hold hope for solving special regional archeological problems, (3) are in danger of imminent destruction, (4) offer the largest amount of data and material. It should be emphasized here again that accurate field excavations can be carried out only by individuals properly trained in that type of work. However, those who have not received this training can learn much about the archeology of a particular region, and can accomplish useful investigations, by concentrating their endeavors on systematic and accurate field reconnaissance.

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Book Reviews

The Archeology of Carcajou Point, with an Interpretation of the Development of Oneota Culture in Wisconsin. By Robert L. Hall. The University of Wisconsin Press, Madison, 1962. 2 volumes, xiii + 200 pp., 83 plates, 15 tables. \$8.00.

Carcajou Point is a site on Koshkonong Lake in southeastern Wisconsin that has long been linked with the Siouan-speaking Winnebago Indians. As previously made surface collections were rich in European trade materials, the site was excavated for the purpose of documenting the material culture of the Winnebago in the late 18th and early 19th centuries. The results of excavation were somewhat surprising. Below the historic Winnebago materials was abundant evidence of a lengthy prehistoric occupation by a people whose culture can best be characterized as Mississippian. Contrary to what might have been expected in the lower levels, very few Woodland artifacts were found. On the basis of this earlier Mississippian occupation at Carcajou Point and similar materials from other sites in the same area, Hall has defined a Koshkonong Focus, and this he associates with the Oneota tradition in the Upper Mississippian cultural phase.

Most of Hall's report is concerned with the Koshkonong Focus and its cultural affiliations, and we learn relatively little about the culture of the historic Winnebago as represented at the Carcajou Point Site. To begin with, before making controlled excavations, Hall and his associates shoveled away the plow zone, without troweling or screening the material, and thus disposed of much historic Winnebago material. Of 79 features below the plow zone, only three yielded European trade objects, and these three features contained very few identifiable native Winnebago artifacts. Hall also chose to ignore the extensive surface collections made by various persons at Carcajou Point over the past 80 years. As a consequence, those who are interested in Winnebago archeology or in European trade objects referable to the late 18th and early 19th centuries will be disappointed by Hall's report. This is not to minimize Hall's contribution to the prehistoric archeology of Wisconsin and surrounding states, which is impressive, but to point out that he could also have added valuable data to the historic archeology of that area if he had chosen to do so.

As indicated above, most of the data from the Carcajou Point Site pertain to the Koshkonong Focus. The main characteristics of this local Upper Mississippi culture are: an economy based on hunting, fishing, plant-food collecting, and simple agriculture; rectangular houses; underground pits, presumably for food storage but later used for burials and disposal of refuse; extended and bundle burials; shell-tempered pottery, both plain and decorated, with the main decorated types characterized by broadly trailed designs below the rims and by indented or notched lips; and small, unnotched, triangular arrow points. Three charcoal samples from prehistoric Carcajou Point refuse pits yielded radiocarbon dates of A.D. 998, 1028, and 1528. Hall thinks it is safe to say that the earlier prehistoric occupation began about A.D. 1000, but he is somewhat uncertain as to the duration of this occupation. One of his charts indicates a terminal date of A.D. 1400. Although he suspects that the site was abandoned several hundred years before being occupied by the historic

Winnebago, he thinks it is likely that the Koshkonong Lake area was more or less continuously occupied until 1832, when the Winnebago abandoned this locality.

Hall broadens the concept of the Oneota culture, and he sees the Koshkonong Focus as a western Great Lakes variant of the Oneota complex with "attenuated" Middle Mississippi characteristics. He follows Griffin and others in deriving these Middle Mississippi traits from the Old Village Focus near St. Louis, Missouri, and the Rock River Focus of southern Wisconsin, best represented by the site of Aztalan, a northern outpost of Middle Mississippi culture. Hall derives the modern Winnebago from these Middle Mississippi sources through the Silvernale, Koshkonong, Grand River, Huber, and Lake Winnebago foci; and he derives the more westerly Chiwere Sioux (Ioway, Oto, and Missouri) from the same sources through the Apple River, Blue Earth, and Orr foci. Thus Oneota represents a late, peripheral, prehistoric Mississippian cultural tradition that is linked with certain modern Siouan-speaking Indians.

It is of interest to note that excavation at the Carcajou Point Site was done mainly by volunteers who worked on weekends. As the site was not patrolled during the week, unauthorized persons also dug there, sometimes looting features whose excavation was still incomplete. In this respect the state of public morals does not seem to be any higher in Wisconsin than elsewhere in the United States.

The format of Hall's two-volume work is unusual because each volume is constructed differently. Volume I, the text, is stitched and cloth-covered in the standard manner; but Volume II, which contains only illustrations and tables, is paper-covered and held together by spiral wire. Presumably both author and publisher considered this a convenience to the reader. After using this publication, I still prefer a single volume with illustrations and tables placed near the text references.

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