

# **PROJECTILE POINTS OF THE CALF CREEK HORIZON FROM FRIO, MEDINA, AND UVALDE COUNTIES, SOUTHERN TEXAS**

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## **ABSTRACT**

In this paper, a number of projectile points variously typed as Andice, Bell, and Calf Creek, from sites in Frio, Medina, and Uvalde Counties, are documented and illustrated. Descriptive data are supplemented by observations derived from technological analysis and examination of raw materials.

## **INTRODUCTION**

Large, basal notched dart points, classified as Andice, Bell, and Calf Creek points, are distributed throughout Texas, Oklahoma, Arkansas, and Missouri. (Prewitt 1983; Justice 1987; Wyckoff et al, 1991; Turner and Hester 1993). The exact temporal and cultural relationships of these three point types remain unresolved. Overall, they appear to be linked through time and space. To prevent unwieldy references to all three type names used in this paper, we have followed Wyckoff (1991a,b) by including them in the Calf Creek Horizon.

Turner and Hester (1993:71-72) describe Andice points as large, broad, triangular points with convex lateral edges and long, essentially rectangular, stems. Prominent, massive barbs extend downward and are narrowest at the juncture with the body. They are closely related to Bell points morphologically, but are distinguishable by their greater size, stem length, and barb length. On the other hand, some of this variation may be related to resharpening, reworking, breakage patterns or other technological variables. The Bell point (Turner and Hester 1993: 80) is characterized as a wide, thin, triangular body and long, narrow barbs formed by basal notching.

Calf Creek points have the same overall attributes as Andice and Bell. Weber and Patterson (1985) and Weber (1986) offered quantitative and discriminant function analyses to try to distinguish quantitatively between Andice and Bell, and Weber (1986) found that the Bell-Andice spectrum likely represents a single type.

Indeed, Wyckoff (1991a:3) considers the three types to be overlapping varieties of the same form and goes on to say that "Much of the more obvious variation results from different amounts of blade resharpening and reshaping."

## **THE STUDY SAMPLE**

The artifacts reported in this paper were found on the surface of sites in the drainages of the San Miguel Creek in Frio and Medina Counties, and the Leona River in Uvalde County. The San Miguel Creek's headwaters, the Francisco de la Perez and Chacon Creeks, originate directly on the land form that divides the Medina River drainage from the Frio River drainage, between Castroville and the small community of Quihi. Both tributaries and the San Miguel itself drain areas of enormous lithic resources. The San Miguel empties into the Frio River in McMullen County.

The Leona River enters the coastal plain directly off the Balcones Escarpment in Uvalde County west of the Frio River. It also drains an area full of high quality lithics. The Leona River joins with the Frio River in Frio County just north of the Interstate 35 crossing of the Frio.

## **Lithic Resources of the Area**

The lithic resources of the study area can be lumped into two groups, Edwards cherts (or flints) and Uvalde gravels. There are outcrops of Edwards all along the Balcones Escarpment between Del Rio and Georgetown. In the area around Uvalde, the Nueces River contains high quality chert nodules, especially downstream from the 19-Mile Crossing on Highway 55 northwest of Uvalde. Two Edwards sub-types, Salmon Peak chert and tabular chert are found in the bed load of the river.

The chert or flint from the Salmon Peak formation occurs in fist to watermelon-sized, amoeba-shaped nodules. Cortex is smooth,

thin, chalky, and usually tan in color. Microfractures beneath the cortex are very distinctive—thin, short, and curved black lines. The texture grades from fine and glassy to coarse. It is generally of high quality for knapping and the material color ranges from tan to light brown and lavender.

Tabular chert found in the Nueces River bed load is generally of very high quality, although it is usually fractured into smaller pieces. Cortex is thin, smooth, and light brown. Few microfractures occur beneath the cortex. Modern knappers compare the Nueces River tabular chert to that found in and around the Pedernales River. The local material is usually very high grade and glassy, ranging from tan to dark brown in color.

“Uvalde Gravels” is a term applied to highly variable lag gravels topping the uplands and eroding into stream beds in the study area (Turner and Hester 1993). Calame has collected examples for knapping experiments, and find the cobbles difficult to reduce because of large microfractures and interior stress fractures beneath the cortex. The small size of these “gravels” also precludes the manufacture of large bifaces.

The Francisco de la Perez and Chacon creeks both drain off extensive deposits of Uvalde gravels lying in a roughly triangular area between Castroville, Hondo and Devine. North of Highway 90 in this area, the gravels have a whitish cortex and is of a glassy dark brown chert known to knappers as “root beer flint.” Calame observed deposits of this material at site 41ME100, near the community of Quihi, at the head of Francisco de la Perez creek. The fields in this locale are covered with these distinctive chalky white cobbles.

South of Highway 90, the Uvalde gravels change to cobbles with thin and hard orange to orange-brown cortex. The glassy cherts of the 41ME100 area drop off remarkably, replaced by cherts that are highly fossiliferous, and often with many inclusions. Colors of the chert include white and tan, dull brown, and brown with light red streaks. These cobbles are hard, extremely well rounded, and very difficult to knap. Calame used heat treatment, up to 500 degrees F, to improve the chipping qualities of this material (see Hester and Collins 1974).

## DESCRIPTION OF THE SITES

The sites were recorded by the senior author and are summarized below.

**41FR34** -Upland site approximately one mile east of the San Miguel Creek and two miles south of the northern Frio County line. The site is on a high point for the area, at 610 feet above sea level, while the San Miguel Creek, one mile due west, is at 570 feet above sea level. The site has a commanding view of the San Miguel Creek valley.

A variety of Archaic and Late Prehistoric projectile points and stone tools have been surface collected from the site including Andice, Bulverde, Edwards, Frio, Montell, Palmillas, Pedernales, Perdiz, Scallorn, Tortugas, and one possible Midland. Seven Guadalupe and five Guadalupe-like bifaces have also been collected, along with two Clear Fork tools and one Nueces biface. In addition, one bison tooth, fragments of mussel shell and a mano have also been collected. Snail shells of the species *Rabdotus* are present, widely scattered. Small pieces of fine-grained red ochre are also present at this site. No knappable lithic material occurs naturally at this locale, so all lithics have been introduced by humans.

The site is now in coastal grass pastures. It should be noted that this site is on the senior author's property and therefore a much more thorough survey of this site has been conducted than of other sites in this report. In addition, the site being one mile from the San Miguel Creek and more than one and a half miles from the nearest paved road, it is believed the site was previously unknown and therefore collecting has been minimal.

**41ME97** - Open campsite on the southern tip of the first terrace above the flood plain of the Francisco Creek in south central Medina County. Site is bisected by a county road and sits on the west side of the creek. Site actually sits on the southern tip of this terrace. Artifacts collected from this site include Andice, Edwards, Langtry, Perdiz, Guadalupe, Clear Fork, and various untyped scraping tools.

**Field Site # 042** - This was an isolated find of an Andice or Calf Creek point (Larry Banks, personal communication). No evidence was

apparent to the author of any cultural debris at this site. The site is an upland location approximately one mile east of the Francisco Creek in south central Medina County.

**41UV351** - This site sits on a high spot on the northwest bank of the Leona River at the Two Mile Water Hole. This specimen was collected from the site after trenching for a fiber optic line passed through the site. This specimen represents a previously unknown buried component at this site. Previously the site was known to consist only of Late Prehistoric period artifacts. A Guadalupe biface was also salvaged from the trenching spoil dirt, as well as a Perdiz point, an untyped biface (knife?), some very large, high quality chert blades, and some faunal material (including a possible deer mandible). With these artifacts recovered, the time period for this site can now be linked to the Early Archaic as well as the Late Prehistoric.

#### DESCRIPTION OF THE ARTIFACTS (Carey Weber)

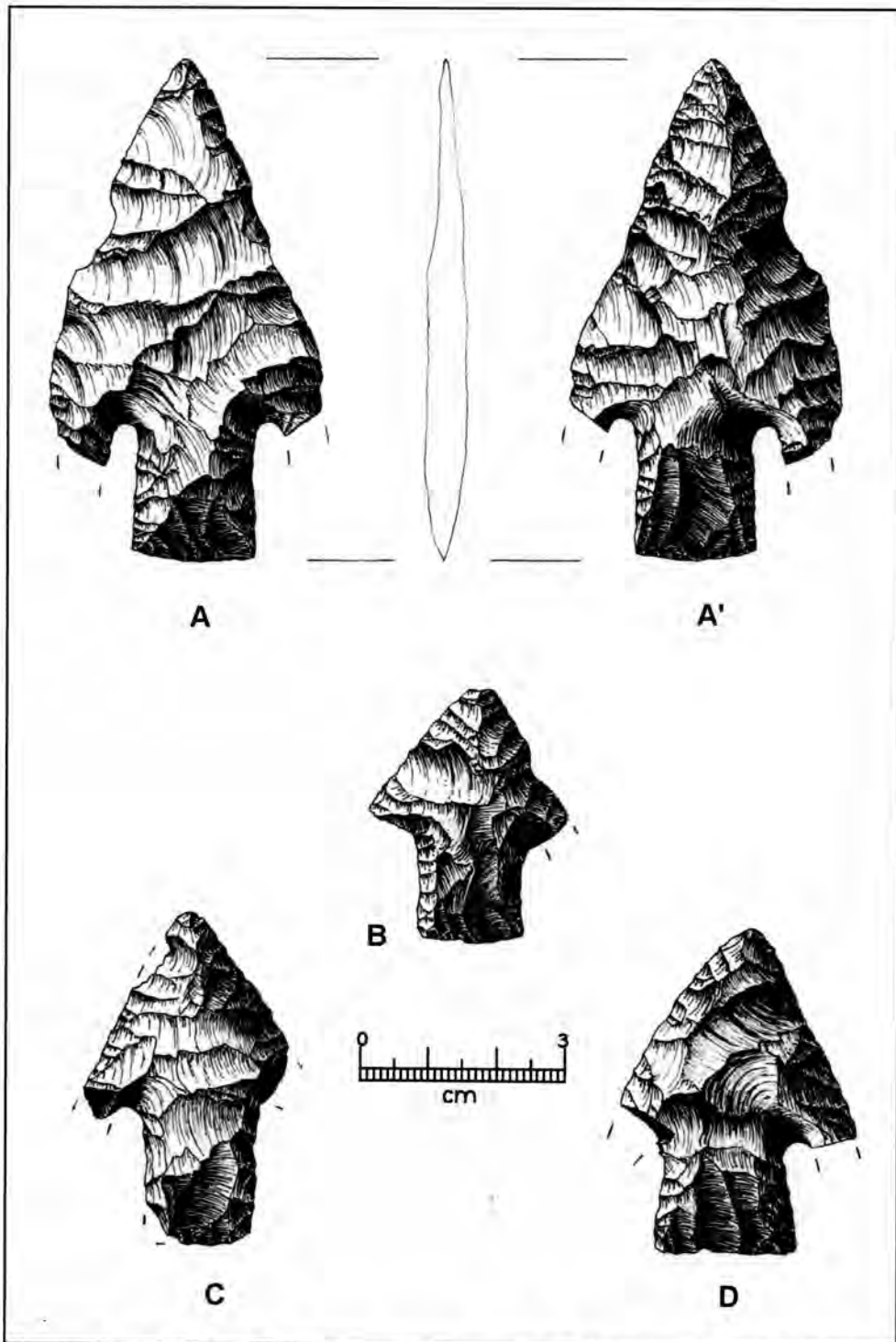
##### **Specimen #1, 41UV351, Figure 1, A, A'**

The frequency of occurrence of this form is about 1 in 9 in terms of specimens that Weber has seen. This specimen was originally a fairly large, wide and thin biface. Face 2 was the flatter face, but both faces appear to have been well contoured. Even though the material is reddish, it does not appear to have been heat treated. A large pressure flake from the Face 2 left blade edge carried to the right edge, and it may have overshot slightly, removing a small portion of the right blade edge. The blade appears to have been damaged somewhat, and both barbs were likely lost concurrent with the blade damage. To repair the damage to the blade, Face 1 was re-flaked from both edges using long pressure flakes, causing a moderate reduction in size. These flake scars intrude into and have reduced the terminal notching flake scars. Three long flake resharpening flake platforms from the Face 1 right edge were excessively strong for the very thin blade edge, and detachment of the flakes removed a significant part of the blade edge. The blade edges are very thin and sharp. Face 1 stem contouring is very good, with a wedge-shaped long section and precise, clean basal thinning and notching flake scars. Mean notching flake scar expansion is greatest from the

right stem edge on Face 1 and is equal on Face 2. Notching flake scars show best alignment and spacing on the Face 1 left stem edge. The basal thinning scars on Face 1 were removed after notching had begun. On the Face 1 left stem edge basal thinning scars intrude into all adjoining notching flake scars, indicating that this notch was complete when the last basal thinning flake was removed. On the Face 1 right stem edge basal thinning scars intrude into notching flake scars half the way up, and the final notching flake scars intrude into the same basal thinning scar. This indicates that the Face 1 right/Face 2 left notch was half complete when the last basal thinning flakes were removed. Basal thinning on Face 2 of the stem failed, so the contour is not evenly tapered. This caused the stem to be the maximum thickness of the biface. The Face 1 right/Face 2 left notching platform was crushed, and that notch is not as deep as the Face 1 left/Face 2 right notch. The stem shape is Variation 3, with incurvate, more or less parallel lateral edges tapering to a slightly expanding, convex base. Basal alignment is very good. Final microflakes were removed toward Face 2.

##### **Specimen # 2, 41FR34, Figure 1, B**

The frequency of occurrence of this form is about 1 in 8. The original point was fairly small and thin relative to width. The blade has been resharpened to a late stage of reduction. The final sequence of resharpening flake removals is typical of Andice/Bell points, with microflakes and short flakes from the right blade edges and long flakes from the left edges. The final microflake removal series is unifacial to Face 1. It is uncertain whether damage to the Face 1 left blade edge is incidental to use or the result of removing a resharpening flake from an excessively strong platform. Use of long flake resharpening and development of ridges, blade twisting and thinning was limited by the thinness of the original blade; however, these features are present to some degree on both faces. Original thinness also limited intrusion into terminal notching scars; however, the Face 2 left barb loss scar and terminal notching scar have been completely removed by resharpening. Notching flake scars on the Face 1 right/Face 2 left stem edge are classically excellent. Spacing and shape are very uniform, indicating precise



**Figure 1.** Calf Creek Horizon points. A, A' Specimen 1, 41UV351; B, Specimen 2, 41FR34; C, Specimen 3, 41FR34; D, Specimen 4, 41ME97.

control of notching flake platforms and removals. These scars show almost no retouch. Those from the Face 1 right edge show classic slightly forward expansion and simple curvature, while those from the Face 2 left stem edge show classic lateral expansion and S-shaped curvature. The stem shape is Variation 3 with incurvate lateral stem edges and a slightly expanding, convex base. Stem thinning has produced only a somewhat wedge-shaped long section. This is because the original preform was thin relative to width and because of intrusion into the interior of the stem face by lateral scars without subsequent basal scars (the stem was already too thin). The basal edge is thin with good edge alignment, and it has been slightly dulled.

#### **Specimen # 3, 41FR34, Figure 1, C**

Per Weber's experience, the frequency of occurrence of this form is about 1 in 8. The specimen has been resharpened to a late stage of reduction, and it is covered almost entirely with manufacturing and resharpening pressure flake scars. Four edges of the point have sustained recent (post-patination) damage/reflaking. The blade is covered almost entirely with resharpening flake scars. On Face 1 limited thinning, twisting and ridges are present from the left edge, while the Face 2 blade face is not significantly different from the stem face. Remaining terminal notching flake scars have been reduced in size by blade resharpening. The Face 2 right terminal notching flake scar has been removed by a burin from the blade edge. The angle of the burin scar is acute in relation to the long axis of the point, indicating that the flake was detached after barb loss and after the blade had been considerably shortened, although the last series of resharpening scars intrude slightly into the burin scar. While notching flake scars expansion is limited, almost none of the classic notching flake scar attributes are present. Lateral stem scars are somewhat atypical of Andice or Bell points in irregularity of removal, and on the Face 2 left stem edge, beveling, nearness to Face 1 and reduction of notching flake scars by unifacial stem edge alignment scars are atypical. This indicates poor control of notching flake platforms and removals, and it suggests that the finished notches may have been somewhat wider than usual, especially the Face 1 right/Face 2 left notch. The stem shape is typical of Variation 4, with more or less parallel lateral

stem edges and a convex base. Basal thinning is typical post-lateral large pressure. Final basal edge alignment is poorer than usual, especially considering that edge damage (Face 1 left basal corner) that existed on the preform prior to finishing was not completely removed.

#### **Specimen # 4, 41ME97, Figure 1, D**

The frequency of occurrence of this form is about 1 in 9. The body of the point has been reduced moderately in size by microflake and short flake resharpening. The material is relatively coarse and appears to have a waxy luster, which may be evidence of heat-treating. If true, this would be the first evidence of heat treating that Weber has seen in Andice and Bell technology in Texas. However, it may also be an attribute of exposure. The material, overall shape and size and the manner in which the resharpening was performed give this point the look and feel of some Calf Creek points from Oklahoma. There is minor roll snap damage at the tip on Face 2 which has not been resharpened. Blade resharpening has produced slight asymmetry relative to the stem axis. Short flake resharpening scars have intruded into and reduced, but not greatly altered, original manufacturing scars. Only two possible long flake resharpening scars are present, one from Face 1 right and one from Face 2 right. The direction of these removals is upper right to lower left. The location and low number is atypical, but not unknown for Texas Andice or Bell points. The final microflake series is from right blade edges, which is typical for Andice or Bell points. Because long flake resharpening was limited, there is no blade thinning, twisting or ridges. The Face 1 left barb was removed by a lateral-in snap, and the Face 1 right barb was removed by a transverse snap. The Face 1 left barb loss scar shows minor intrusion by subsequent flakes; however, the lack of pronounced shoulders and lack of major intrusion and reduction in size of the barb loss scars indicate that barb loss occurred after the point reached its present size and shape. While the Face 1 left/Face 2 right terminal notching scars have been removed by the lateral-in barb snap, those on Face 1 right show intrusion, and those on Face 2 left show reduction by resharpening flakes. The stem shape is classic Variation 1, with an expanding stem and incurvate to fish-tailed basal edge. Notching flake expansion is limited, and those from the left stem edges show

some regularity; however, most other classic attributes, such as differential expansion and curvature, are not present. Pre-lateral percussion basal thinning produced a generally wedge-shaped stem long section, which was not greatly enhanced by subsequent pressure flaking. Basal edge alignment is good to very good, but not very thin and sharp. The final microflake alignment is unifacial toward Face 2. It is uncertain whether the flake that primarily formed the fish-tailed appearance was intentional or incidental. The Face 1 right half of the basal edge is dulled.

**Specimen # 5, 41ME(042), Isolated Find,  
Figure 2, A, A'**

The frequency of occurrence of this form is about 1 in 370. This specimen has been only slightly reduced from its original size by resharpening. It is essentially whole, with minor snap damage at the center of the base and transverse snap damage of the Face 1 right barb tip. Both of these fractures were contemporary with original manufacture and use of the point (pre-patination). About 2/3 of each blade face retains original manufacturing scars, which include lateral percussion thinning, lateral large pressure contouring and final pressure edge alignment scars from the left edges. Numerous serial microflakes and short flakes from right edges indicate early resharpening. Incipient shoulders are present on the blade edges where the last series of resharpening flakes stopped. The blade is slightly asymmetrical, partially because it was made that way and partially because the asymmetry has been accentuated by the resharpening. The faces are not well contoured, and Face 2 is more convex than Face 1. This is probably because the preform was not greatly larger than the size of the finished point (the maker wanted to get as large a piece he/she could out of the preform). The blade forward of the point of maximum thickness was manufactured to be thinner than the stem and slightly twisted. Notching flakes show some classic attributes; however, overall they are somewhat irregular. Mean notching flake scar expansion is greatest from left barb and stem edges, with the exception of two reversed scars on the Face 1 right edge of the left barb near the notch termination. The terminal notching scars show S-shaped curvature from left edges, and notch edges are irregularly zigzagged. Alignment and spacing of notching flake scars is irregular. The stem shape

is typical Variation 3.

**Specimen # 6, 41FR34, Figure 2, B**

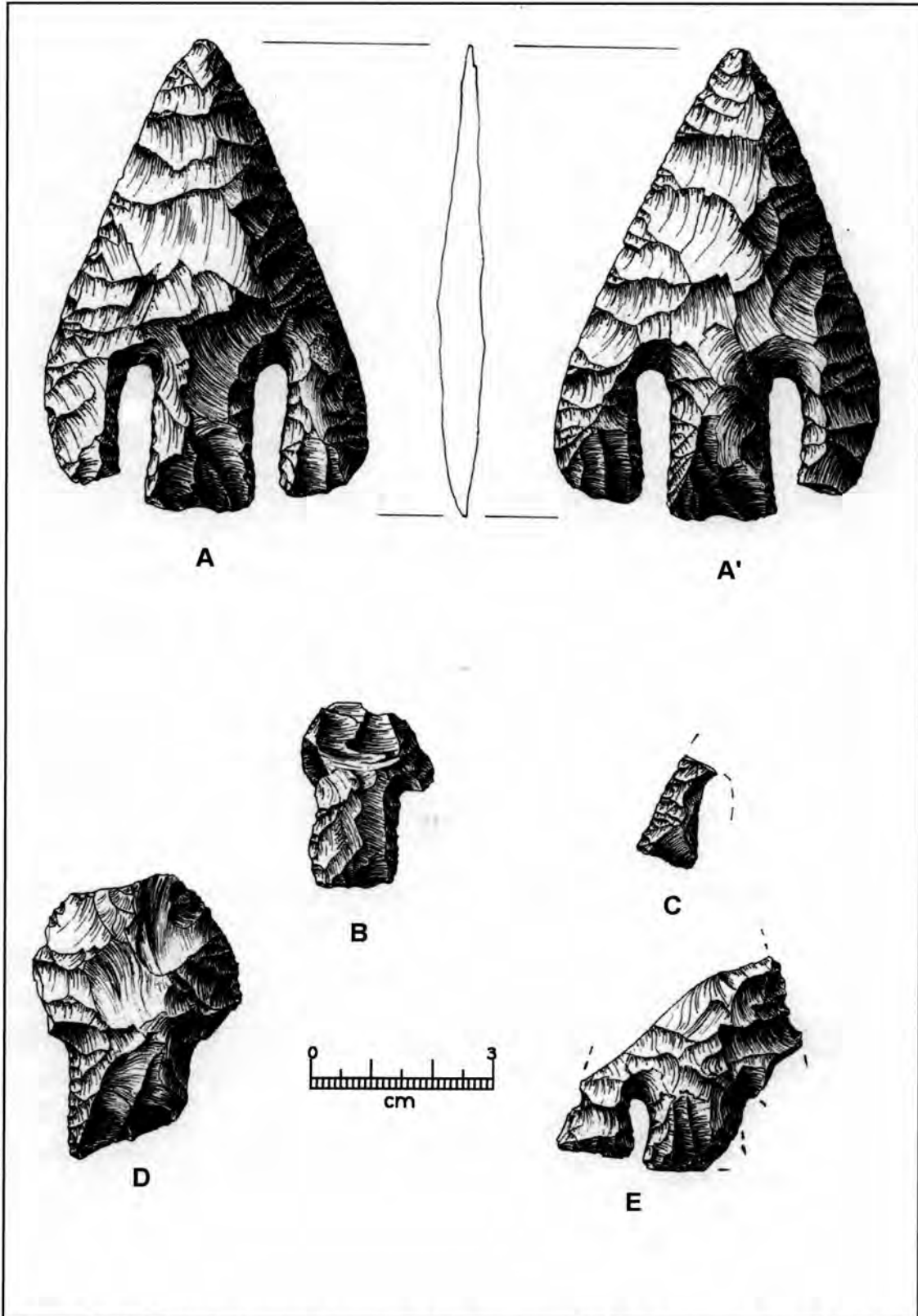
The frequency of occurrence of this form is about 1 in 93. This specimen was originally a relatively small, thin biface. It has been extensively resharpened to a late stage of reduction, when its apparent use as a projectile point caused roll snap impact fractures that reduced the blade size to the degree that the damage could not be repaired, and the point was discarded. Burins have removed both barb loss scars, and the Face 1 left scar was reflaked after the burin was removed. The burin removals and reflaking indicate that the barbs were likely missing prior to final use of the point as a projectile point. The stem shape is Variation 4, with more or less straight, parallel lateral stem edges and a straight to slightly convex base. Face 2 is the more convex and more well-contoured face. The stem is not evenly tapered (wedge-shaped) on Face 1, but it is classically excellent on Face 2. Notching flake scars show typically greater mean expansion from left stem edges. Notching flake scars from the Face 1 left/Face 2 right notch edge are classically excellent. The notching platforms were precisely controlled and the flakes were cleanly detached to produce uniform spacing, shape, alignment and zigzag notch edges. On the Face 2 right stem edge the notching flake scars show typical forward expansion and simple curvature, while those from the Face 2 left edge show typical lateral and reversed expansion with S-shaped curvature. Notching flake scars from the Face 1 left/Face 2 right notch edge are irregular.

**Specimen #7, 41FR34, Figure 2, C**

This is a barb fragment detached by transverse snap. It is a typical Andice or Bell barb in four ways: 1) it is wider at the base than near the notch termination; 2) it shows flake scars from the barb base; 3) it shows typical notching flake scar attributes; 4) it has been narrowed by delicate resharpening using microflakes and short flakes, primarily from the right edge. Notching flakes show greater mean expansion from the left edge, and the notch edge is closer to Face 1. The Face 1 right terminal notching scar shows reversed expansion.

**Specimen # 8, 41FR34, Figure 2, D**

This specimen is a Pedemales point, was



**Figure 2.** Calf Creek Horizon points and fragments. A,A', Specimen 5, Isolated Find (41ME042); B, Specimen 6, 41FR34; C, Specimen 7, 41FR34; D, Specimen 8, 41FR34; E, Specimen 9, 41FR34;

originally typed erroneously as Andice by the senior author. Weber's Andice expertise corrected this error. It is included in this paper because it is felt the senior author's mistake may help others in the future with the identification of this type artifact. The original size, shape and manufacturing scars remain except where removed by damage that was contemporary with alignment of blade edges. Large pressure flake scars, one of the hallmarks of Andice or Bell manufacturing, are not present on either face. There is no evidence of re-sharpening, indicating that this is the original size and shape of the artifact. The blade width and curvature do not suggest that this artifact ever had wide, long barbs. The stem is atypical of Andice or Bell points in several ways: 1) the shape is classic Pedernales; 2) the maximum notching flake expansion is high; 3) the depth of the basal concavity is high; 4) the lateral stem edge scars do not show any of the classic Andice or Bell attributes.

#### **Specimen # 9, 41FR34, Figure 2 E**

In Weber's view, the frequency of occurrence of this form is about 1 in 75. However, this is not the original form of the artifact at the time it was abandoned. This specimen was originally very thin and very well contoured by large pressure flakes. It was likely abandoned by its makers in an almost whole, unresharpened condition. While recent (post-patination) damage has altered most of the edges, there are no apparent resharpening scars on the interior of the faces. The stem shape has the narrow, more or less straight base of Variation 2; however, the base also expands slightly like Variation 3 and has been included in this category. The basal edge has been lightly ground or dulled. Notching scars on both left edges show classic S-shaped curvature. Those from the Face 2 left stem edge are classically excellent in spacing and alignment.

#### **RAW MATERIAL ANALYSIS OF SPECIMEN #4, 41ME97, Figure 1D (Larry Banks)**

At the request of Calame, an attempt to identify the raw material source for an Andice or Calf Creek dart point found in Medina County was done by the author. The dart point in question macroscopically resembled a variety of fossiliferous Edwards chert from the Georgetown, Texas vicinity. But, in comparison to mi-

croscopic analysis and ultra-violet light fluorescence, the artifact and the Edwards did not match at all, and in particular, the UV light fluorescence was dramatically different. While the use of UVL has not always been found to be a conclusive type of discrimination between some chert types, it has proven time and again to be quite reliable in distinguishing a variety of Edwards materials (Hoffman et al. 1991). In trying to match the chert type of the dart point with others in the comparative collection of Banks (cf. Banks 1990), materials as far away as the Ozarks that shared superficial similarities also proved to be incompatible under careful examination. Gary White, a friend of Banks who often collected specimens of chert for him from any number of locations almost worldwide where he (White) was sent as a welder, had collected some chert materials from a creek and workshop area north of Brownwood, Texas in the late 1980s. In this collection of materials, several of the pieces of chert were similar to the Medina County dart point, but one chert sample exhibited all of the same physical characteristics, and the UVL fluorescence in both long and short wave radiation were an identical match. At the present time the author has yet to conclusively identify the geological source of the origin for the material collected from the creek north of Brownwood, Texas but the comparative macro and UVL analysis strongly suggest the two rock types are from the same source that contributes gravels to the aforementioned creek, and possibly the rock from which the dart point was manufactured came from that same creek. The descriptions of chert apply both to the dart point and the chert type that so closely matches the artifact. In the collection of chert from the creek reported by White, there is a variety of 10 slightly different materials occurring mostly in white and as light to medium dark grey and grayish brown. The only chert specimen described in detail in this report is the specimen which so closely matches the material of which the dart point from Medina County was manufactured. It must also be noted that in the absence of identification of the geologic source of origin there may be any number of other localities closer to the site from which the dart point was recovered, and that are simply unknown at present.

The subject chert type reflected in both the dart point and the raw material collected near Brownwood, Texas under natural light and dry



condition, is a mottled white 10YR8/1, light grey 10YR7/2, and light greyish-brown 10YR6/2 with slightly darker gray splotching. Some tiny vugs contain slight degrees of iron oxide stainings around the open edges. It also exhibits early stages of patination that is reflected primarily in the whitish coloring. Under 17X hand lens and 40X microscope, the rock contains numerous small white blebs and clasts of unidentified paleozoic fossil foraminifera. The rock is opaque even on thin edges. It is not one of the more superlative knappable chert types, but the fracture patterns in both the raw material and the subject dart point are essentially identical.

The UVL fluorescence under long wave is a basic matrix of reddish brown and purplish tinged color with greenish yellow splotching. Under short wave the coloration is essentially reversed with background of greenish yellow and purplish red splotching. Under neither short or long wave does the fluorescence remotely resemble Edwards materials.

The suspected source of the rock is from an unnamed creek entrenched in the Strawn Group of Pennsylvanian age that is a westerly flowing tributary of Pecan Bayou. According to the *Brownwood Sheet of the Texas Geologic Atlas* most of the geological formations of the immediate area is the Strawn Group, and within that group the only chert-bearing formation is the Ricker Station Limestone. The chert in the limestone is defined in the *Brownwood Sheet* (above) as "locally subrounded chert, thin, discontinuous, grayish brown." It can also be noted that the Ricker Station Formation is fossiliferous. There are no Pennsylvanian-aged rocks anywhere near the Medina County location where the subject dart point was found, and at the present time, until more definitive and refined field work can be done to positively identify the geologic source

of origin for the chert, the best and only candidate at this time is the Ricker Station chert from the general Brownwood, Texas vicinity.

## SUMMARY

Locales with evidence of Calf Creek Horizon occupation have been described for three counties in southern Texas, supplementing the known distribution of Bell, Andice and Calf Creek points in Texas. The distribution of lithic resources used in the study area has been explored. The known cultural affiliation and stratigraphic picture at 4IUV351 has been expanded. Qualitative analysis of flake scars and contouring done by Weber was carried out, and this analysis distinguished a Pedernales specimen that superficially resembled the Calf Creek Horizon artifacts. A detailed analysis of the raw material used in the manufacture of one artifact from south central Medina County suggests that the material originated at a distant source. This paper adds to the growing body of data on the manufacture, breakage and resharpening patterns for bifaces of the Calf Creek Horizon.

## ACKNOWLEDGMENTS

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