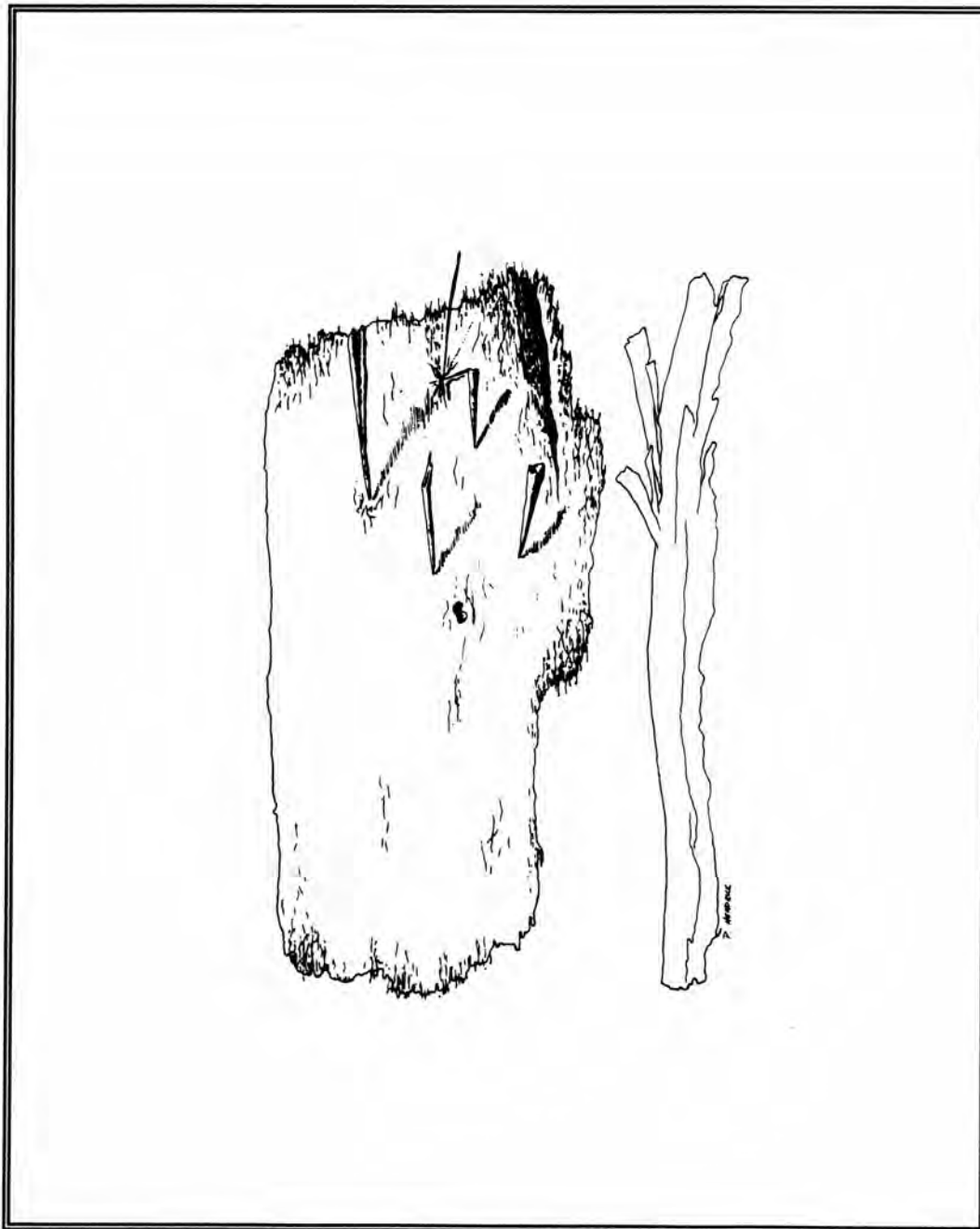


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Evelyn Lewis
Editor

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About the Cover: Drawing by Pamela Headrick of an agave pincushion from Mexico. See report on Page 20. Illustrations by Richard McReynolds are found on pages 8, 19, and 37.

Manuscripts for the Journal should be sent to: Evelyn Lewis, Editor, *La Tierra*, 9219 Lasater, San Antonio, Texas 78250. Past issues of the Journal and Special Publications available by requesting an order form from STAA (Jim Mitchell), P. O. Box 791032, San Antonio, Texas 78279. Dr. T. R. Hester may be contacted at the Texas Archeological Research Laboratory, Pickle Research Center, Building 5, 10100 Burnet Rd, Austin, Texas, 78712-1100.

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ANIMAL, VEGETABLE, OR MINERAL?

When is this a question in an archaeological excavation? It seems obvious that a lithic or metallic artifact is mineral, bone and shells are animal, and wood or seeds are vegetable. Actually, most objects are combinations of materials which have resulted from modifications made by man or nature.

A flint projectile point may have a residue of hafting materials, as well as fibers and stains resulting from its use. Pollen grains on its surface may identify its environment. To appreciate the roles of the artifact and its maker and user, these non-mineral components must also be considered. Recent discussions about mastic or pitch for hafting, and recognition and identification of stains as blood, microbiological coatings or plant pigments indicate how important they can be to "simple lithics."

The vegetable item which receives a great deal of attention because of accompanying materials is the Shroud of Turin. While the fabric was made from fibers of flax, their modification by microbiological agents is under intensive investigation because they have changed the carbon-14 content from its original value. The presence of mineral colors in the form of fine crystals of mercury sulfide raises questions about the possibility of modification of the images on the cloth. Since the original artifact has been modified by fire, microorganisms and man, the consequences of each is being estimated.

Bones provide general information about the size, age, physical condition and possibly the cause of death of the animal which provided them. The animal species inferred from the bones offers some clues to the probable climatic and environmental conditions. The chemical composition of the bone minerals and the isotopic composition of its organic content can shed light on the animal diet. When bones are made into tools, decorations, or weapons, all of the associated materials can give additional information about the maker and the user of the objects.

Whether the original artifact was animal, vegetable, or mineral it carries with it a wide variety of additional evidence about the circumstances that brought it to its present condition. In trying to reconstruct the technical skills, culture and life-style of those who fabricated and used these objects all aspects of the artifact must be considered.

D. R. Lewis
Associate Editor

NOTES ON SOUTH TEXAS ARCHAEOLOGY 1996-3

Mesoamerican Obsidian at Sites in the Falcon Reservoir and Lower Rio Grande Area of Southern Texas and Northeastern Mexico

*Thomas R. Hester, James B. Boyd, Frank Asaro, Fred Stross,
Robert Giaque, Don Kumpe, and Jacob Bourbon*

INTRODUCTION

Recent research by the Texas Obsidian Project (TOP) has led to the recognition of obsidian artifacts, from Mesoamerican geologic sources, at the Falcon Reservoir in southern Texas (Figure 1). In addition, a specimen from the lower Rio Grande delta was also analyzed (adding to the data already obtained from that area; Hester 1994), along with another obsidian artifact from the coastal plain of northeastern Nuevo León (Figure 1). One of these obsidian specimens is also Mesoamerican in origin and the other derives from a New Mexico source.

Though Mesoamerican obsidian is rare in Texas (Hester 1994), several examples have been documented by the TOP, ranging from the Clovis-age biface at Kincaid rockshelter in Uvalde County (Hester et al. 1985) to a beachrolled stemmed biface, likely of Archaic age, at McFaddin Beach on the upper Texas coast (Hester et al. 1992). However, a pattern has begun to emerge that reflects a concentration of Mesoamerican obsidians at sites on the lower Rio Grande and in the Rio Grande delta (Hester 1994). These include specimens chemically sourced to the Sierra (or Cerro) de las Navajas obsidian from the state of Hidalgo, in central Mexico (this is also known as the Pachuca source, characterized by green obsidian) and to the Zacualtipan source, also in Hidalgo. The Sierra de las Navajas obsidian came from a site in Willacy County investigated by Prewitt and Associates, Inc. (Day 1981). The Zacualtipan specimen was found by A. E. Anderson in Cameron County, and is part of the Anderson Collection housed at the Texas Archeological Research Laboratory (TARL). In addition, two specimens (TOP 53, 54) from site 41WY40 have been linked to the Ojo Zarco source [in Guanajuato; TOP 164 is a sample from this source analyzed at the Lawrence Berkeley National Laboratory (LBNL) for comparisons; it, and other data, on the Ojo Zarco source were provided by David

O. Brown and Clint Davis; ms. in preparation with Hester]. Hester (1994) has suggested that these specimens reached the Rio Grande delta as part of the Huastecan trade connection that also brought jadeite and ceramics into the area.

THE ARTIFACTS

Boyd brought to Hester's attention an obsidian biface collected by Mrs. Cynthia Scott from the surface of site 41ZP8, near present-day Falcon Lake in Zapata County (Figure 1). It is a fragment of a plano-convex specimen 36 mm long, 32 mm wide and 12 mm thick. The obsidian was a gray opaque obsidian, with some striping. It may have been made on a segment of a large obsidian blade. Retouch along the edges suggests that it may have functioned as a scraping tool. Non-destructive precise x-ray fluorescence analysis (PXRF; Giaque et al. 1993) done at the LBNL has shown that this specimen (TOP-187; Figure 2,a) is derived from the well-known Otumba source, near the great site of Teotihuacan in central Mexico. This geologic source located south of Teotihuacan was widely used in ancient Mexico and is broadly distributed both temporally and spatially. Otumba obsidian has been recognized only once previously in Texas. A stemmed dart point of Teotihuacan style was found on the surface at a site near Sabinal in Uvalde County and linked to Otumba through XRF analysis (TOP 61; Cunningham collection).

The second specimen from Falcon Reservoir (TOP 193) was obtained during the salvage work done by the University of Texas in the early 1950s, prior to the completion of the dam. It is in the TARL collections. According to handwritten notes by Alex D. Krieger, the specimen was found in the "Falcon Reservoir area; site unknown; given to Phil Royer and donated by him, ...probably 1951-1952." The specimen is the distal portion of an end-scraper, made on

a large obsidian blade. It is heavily used on the lateral edges, with some ventral resharpening flakes on one side. It has a slightly worn or abraded appearance, as if it had been exposed on a site surface. Curiously, the proximal end appears to have been cut, as if with a rock saw. There are no notes to explain this, but perhaps it represents an 1950s effort to sample it for geological study. This specimen was not sent to the LBNL. Its distinctive green color permits us to link it to the Sierra de las Navajas source, as no other important source in Mexico is equivalent in its color. However, this specimen has a golden surface sheen in addition to the green color. According to Spence (1985), this is a "particular variant" of Sierra de las Navajas obsidian, and he notes (p. 83) that it was heavily used in Aztec times. The artifact is 47 mm long, 37 mm wide and 12 mm thick (Figure 2, d). Since we do not have site provenience for this artifact, it is reasonable to question whether it reached the area in prehistoric times via the same Huastecan trade routes that brought this obsidian into the delta or if it was perhaps "imported" in more recent times by workers from Mexico. Additionally, it could have been obtained in central Mexico as a tourist item and eventually routed to Mr. Royer, with the story that it was found in the Falcon area. It is, of course, impossible to know for sure, but the discovery of the Otumba specimen at 41ZP8 indicates the presence of other central Mexican obsidian and strengthens the likelihood that TOP-193 is also of ancient origins. We cannot securely date either specimen, though at 41ZP8, both Archaic and Late Prehistoric artifacts were exposed on the surface.

What is important about the Falcon specimens is their Mexican geologic sources, especially when viewed in the light of the Mexican sources (including Sierra de las Navajas) found in the Rio Grande delta. Did the Falcon specimens make their way upriver through local trade, after reaching the delta via the Huastecan-Brownsville Complex trade connection? Or do they represent earlier trade, perhaps in Archaic times, given the presence of Archaic artifacts of Mexican obsidian in at least two other localities in Texas? As so often in archaeology, the data raise

these questions but our small sample and the lack of contextual information prevents us from answering them at this time.

Other obsidian from the Mexican side of the lower Rio Grande has been provided by Don Kumpe. One specimen (TOP 183; Figure 2,b) is from the Rio Grande delta, from Kumpe's site T63 near Matamoros, Tamaulipas. It is the medial fragment of an obsidian prismatic blade 9 mm long and 13 mm wide. PXRf reveals that it is from the Zacualtipan, Hidalgo source, identical to the A. E. Anderson specimen from the delta noted above. This source identification clearly ties it into the Huastecan-Brownsville Complex trade relationship.

The second specimen (TOP 184; Figure 2,c) provided by Kumpe was found by Michael Ryan 35 miles west-southwest of Reynosa in the Mexican state of Nuevo León. It was found on the surface of a site along the Arroyo Paraguay, near the town of Peña Blanca. It is the distal tip of a biface, probably a dart point, 30 mm long and 20 mm wide. PXRf analysis clearly demonstrates that it is from the Cerro Toledo source in the Jemez mountains of northern New Mexico. This is surprising in that we expected it to be from a Mesoamerican source, given its location and given the cluster of Mesoamerican obsidians described here. Additionally, no Cerro Toledo obsidian has been found this far south. The nearest specimen comes from the Armstrong site in Dimmit County, southern Texas (TOP 1; Hester et al. 1975). Other specimens are known from Val Verde County, and at several sites in Central Texas and elsewhere in the western and northern parts of the state.

ACKNOWLEDGMENTS

Analysis of these obsidian artifacts was done through a contract between the Texas Archeological Research Laboratory, The University of Texas at Austin and the Lawrence Berkeley National Laboratory, Berkeley, California. Funding was provided by the Texas Archeological Research Laboratory, including support from the Friends of TARL.

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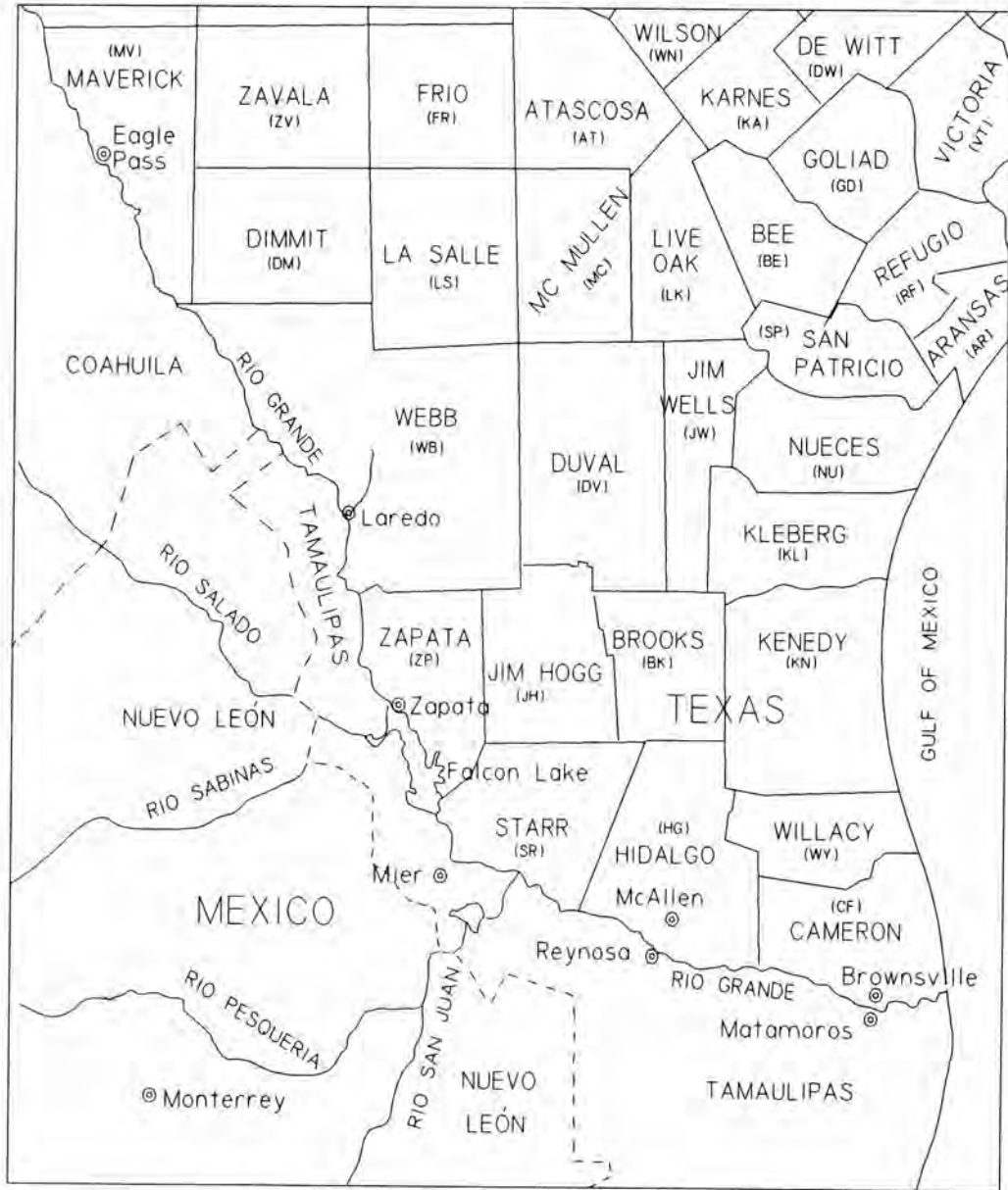


Figure 1. Map of Southern Texas and Northeastern Mexico.

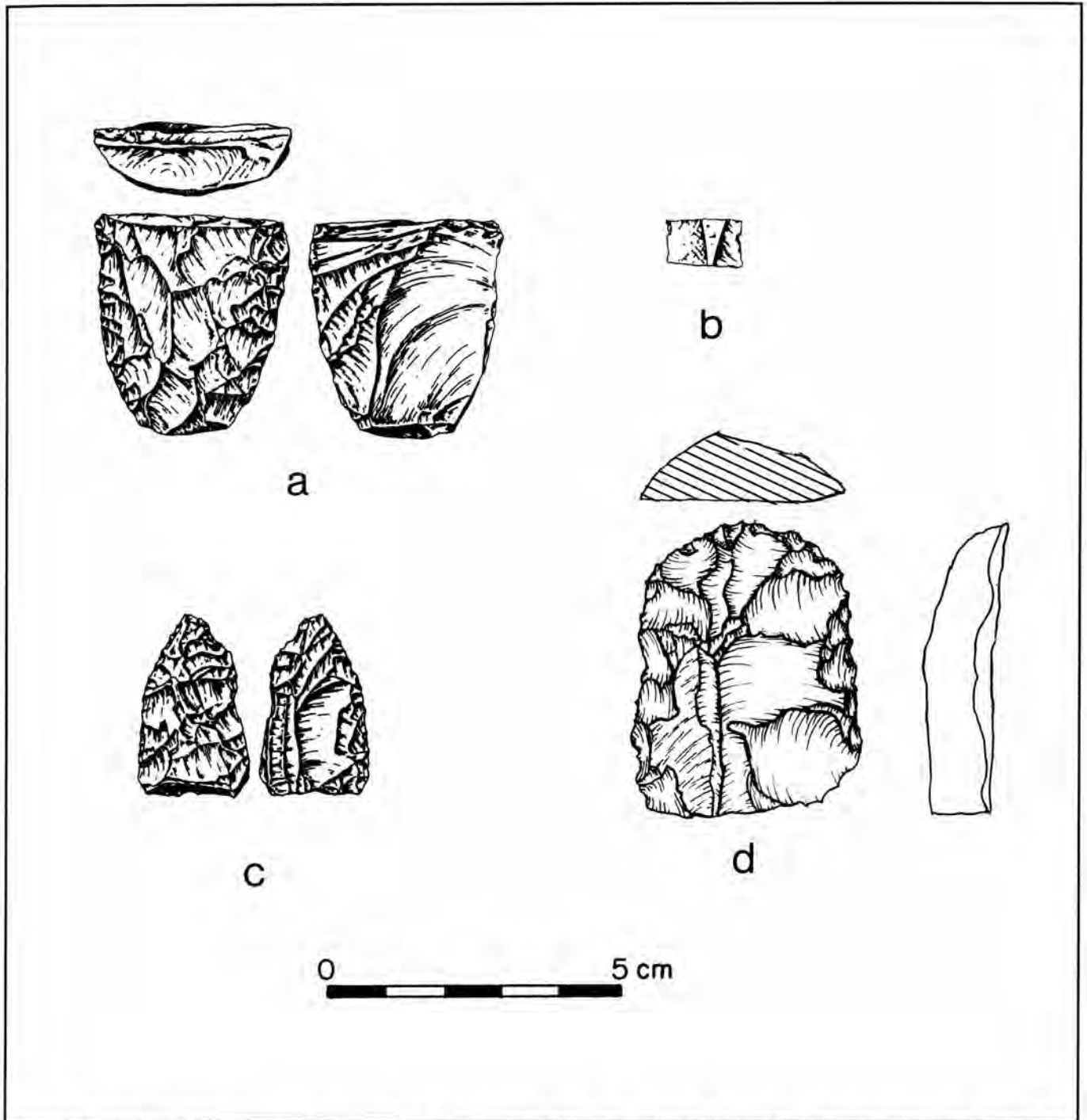


Figure 2. Obsidian Artifacts from the Lower Rio Grande Area. a, TOP187 [41ZP8; Falcon Reservoir area]; both sides and transverse cross section at break are shown; b, TOP 183 (T-63 site; Tamaulipas; medial blade fragment); c, TOP 184 (Arroyo Paraguay, Nuevo Leon); both sides of this distal fragment are shown; d, TOP-193 (Royer Coll., TARL; "Falcon Reservoir area"); dorsal view and transverse cross section shown. Illustrations a-c were drawn by Pamela Headrick; d, was drawn by Clay Hake.

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FROM FIELD NOTES, ARCHAEOLOGY MAGAZINE

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PENSACOLA GRAVEYARD

U. S. Navy contractors digging a foundation for an addition to a building at the Pensacola Naval Air Station in Florida have uncovered the oldest cemetery between Tallahassee and New Orleans. Its seven graves date to ca. 1699 and contain the remains of some of Pensacola's earliest Spanish settlers.

MAY/JUNE 1996

LUCY WAS A GUY?

A recent study by two Swiss anthropologists suggests that Lucy, the 3.2-million-year-old *Australopithecus afarensis*, may be male. If correct, these findings may re-ignite an acrimonious debate among scholars over whether *A. afarensis* is one species or two.

ARTIFACTS OF ALIBATES DOLOMITE FROM SOUTH TEXAS

C. K. Chandler and Richard McReynolds

ABSTRACT

Two lithic specimens made of Alibates agatized dolomite are documented and illustrated. One is from Wilson County and one is from San Patricio County. There are no known artifacts of Alibates dolomite previously reported from these areas of South Texas.

ARTIFACT DESCRIPTIONS

Specimen 1, Figure 1, A, is a large curved uniface made of excellent quality chert that has been identified as "Classic Alibates" of the type from the Alibates agatized dolomite quarry in the Texas Panhandle near Amarillo. This unusually large flake tool was discharged from a large platformed core that had previous large blade removals. It is sub-triangular in shape with a strong curve from end to end. About one-third of the dorsal surface is coated with reddish brown cortex paralleling the shorter side of the dorsal face. The dorsal surface below the cortex has a series of thin brown streaks that extend through the bluish-gray body and are prominent on the ventral side. They give the appearance of sliced bacon.

The cortex is smooth and polished. All surfaces are glossy and polished. The chipped edges and the flake arrises are rounded and polished. Both edges are chipped to the dorsal face only.

The extensive rounding and polish of all edges and arrises with the polish extending on to all surfaces with no prominent striations indicate this tool probably had long term use in scraping a relatively soft material, such as the flesh side of hides.

It is 158.5 mm in length, a maximum of 62 mm in width and 19.5 mm thick at 47 mm from the wide end. The bulb end is 11 mm thick and 18 mm wide. It weighs 198 grams.

This well-used tool is a surface find in a plowed field in northern Wilson County near La Vernia. It is part of a larger collection from this field that included a Folsom point, a Corner Tang Biface and four unstemmed thin bifaces. These artifacts had been so scattered by many years of cultivation that they could not be directly associated in a manner that might

indicate they were part of a cache.

Specimen 2, Figure 1, B, is a fragment of Alibates dolomite found by David R. Espy (deceased) in 1968 at site 41SP75 in San Patricio County. It is of many colors—reds, blues, yellows and whites. It is 35.5 mm in length, 20.6 mm in width, 9.7 mm thick and weighs 6.2 grams. This piece of Alibates appears to be a fragment broken from a blade core.

This site is located on Chiltipin Creek, west of Sinton in San Patricio County. Several Plainview points were reported from this site along with other Paleo points recovered along Chiltipin Creek. One of those was a near complete Clovis (Chandler 1982).

DISCUSSION

An occasional artifact made of Alibates dolomite is found in Texas, far distant from the Alibates source, as is true of the two specimens reported here. A Folsom point found in Henderson County at Lake Palestine is of Alibates (Pertulla 1993). One of four Clovis points from the Gault Site (41BL323) in Bell County is made of Alibates agatized dolomite (Collins, Hester, Olmstead and Headrick 1991; (Hester, Collins, and Headrick 1992). A small end scraper of Alibates dolomite is reported from Dimmit



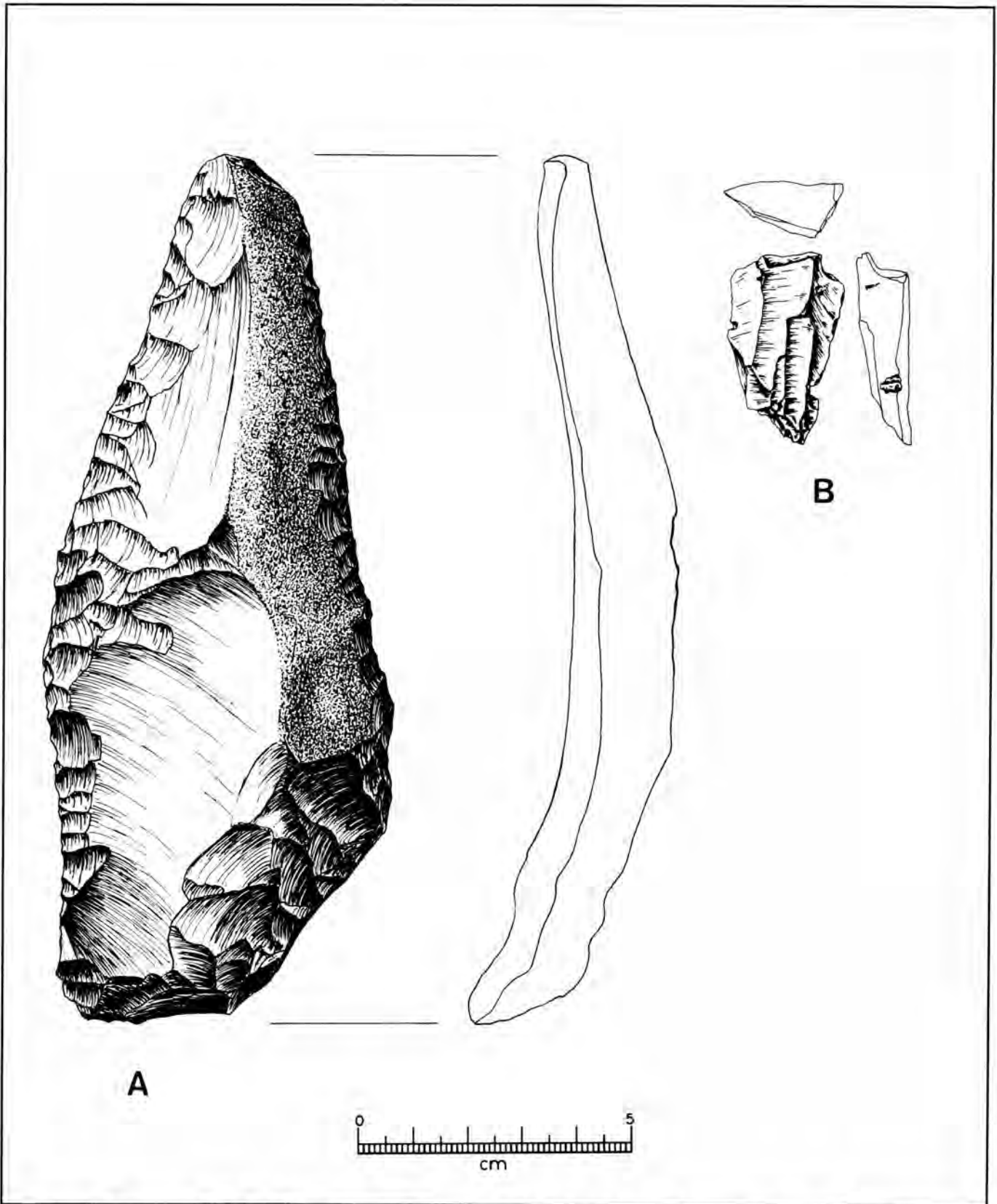


Figure 1. A, a large unifacial tool from Wilson County. B, a Clovis blade core fragment from San Patricio County, Texas. Both specimens are of Alibates dolomite

County in southwest Texas (Hester 1972).

The easternmost occurrence of an artifact made of Alibates is a Clovis point from McFaddin Beach on the upper Texas coast (Long 1977).

This small number of Alibates occurrences in Central and South Texas appears to indicate the near to total absence of any established trade or other movement of Alibates dolomite to the south from the source area. However, Alibates materials apparently were moving to the east and west and to the northern plains (Mallouf 1994).

Sources for Alibates gravels are reported in the Arkansas River in Oklahoma, in the Red River along the Texas-Oklahoma border and the Canadian River that empties into the Red River (Banks 1990).

These river gravel sources for Alibates may be

within access or trade for some of the known Alibates occurrences in South Texas but none of these sources have been substantiated for any of the documented Alibates specimens referred to in this report.

ACKNOWLEDGMENTS

We extend our sincere appreciation to the finder and owner of the Wilson County specimen for its loan for documentation and examination. Several other individuals were very helpful in many ways that we sometimes fail to acknowledge how dependent we are on them. We extend our thanks to Dr. Michael Collins, Dr. Thomas R. Hester, Robert J. Mallouf, Pat Mercado-Allinger, and P. J. Headrick.

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LOCATION OF FORT ST. LOUIS ON GARCITAS CREEK IS SUPPORTED BY TEXAS' ONLY NATIVE PALM TREE

Chris Kneupper

ABSTRACT

The location of the LaSalle expedition's colony on the Texas coast, Fort St. Louis, has been the subject of lively debate for many years, even though it is commonly assumed to have been in the area of Matagorda Bay and Garcitas Creek. A journal-keeper on the LaSalle expedition into Texas (late 1600s) noted tree-like palms near the site of their ill-fated colony, along with other typically Texan flora and fauna.

Since botanical research has now shown that native tree palms and other South Texas plant species existed on the Texas coast northward to about Matagorda Bay, and still exist there today, these small bits of evidence reinforce the model that supports the location of Fort St. Louis in the Matagorda Bay area.

INTRODUCTION

The French explorer, René Robert Cavelier, Sieur de la Salle, is well remembered in Texas as the founder of an ill-fated colony or fort on the Texas coast known as Fort St. Louis. Monuments to La Salle can be found at the site of the former town of Indianola (in the general area of his colony) and in downtown Navasota (near to where he is believed, by some authors, to have met his death). Due almost solely to his representation of France in exploration of Texas in the late 1600s, Texans today claim the interesting addition of the "fleur-de-lis" to the flags that have flown over the state. This article will not cover the history of La Salle or his colony, but provides a small new piece of evidence supporting the location of Fort St. Louis on Garcitas Creek near its entrance to Lavaca Bay (which is a branch of Matagorda Bay) in southeastern Victoria County. A nearby farming community has been known as La Salle since 1927.

Kathleen Gilmore has presented archaeological evidence that ties an existing site on Garcitas Creek (41VT4) to the La Salle expedition (Gilmore 1984).

In this article, she cites some of the journal descriptions made by La Salle's subordinate, Henri Joutel, of typically Texas flora and fauna, such as prickly pear, Spanish dagger, pelicans, alligators, and rattlesnakes, as part of a "model" to support the conclusion that Fort St. Louis was established in that vicinity. Interestingly, one additional piece of evidence has recently come to light which further supports this reasoning, and it involves Texas' only native tree-like palm.

NEW INFORMATION

A tree-like trunked palm, known variously as Mexican Palm (*Sabal mexicana*) or Texas Palm (*Sabal texana*), is commonly found on the Gulf Coast of Mexico and has a natural range which encompasses the lower Rio Grande Valley (Cox and Leslie 1988; Simpson 1988). A dense grove of these trees is preserved by the National Audubon Society in the Sabal Palm Grove Sanctuary a few miles southeast of Brownsville. In fact, the Rio Grande River has often, and incorrectly, been identified as the river called Rio de las Palmas by the early Spanish explorers; however, this antique name is now thought to correctly apply to the Rio Soto la Marina in Tamaulipas, Mexico (Chipman 1995). Mexican Palm is not rare in Texas since it is occasionally used in landscaping, most commonly in the coastal area and South Texas. It is used and found winter-hardy as far north as San Antonio and Austin (Simpson 1988; Cox and Leslie 1988). Its palmate leaves are similar in appearance to, although larger than, the common ground-hugging "palmetto" (*Sabal minor*) found in East, Central and coastal Texas. The Mexican Palm and palmetto are part of a related series of palm species extending along the Gulf Coast to the Atlantic Ocean (Brockman 1986). The Mexican Palm is found in Mexico and South Texas; it is a large caulescent (trunked) palm which can grow to 50 feet in height and two



feet in diameter. The palmetto is found from the Texas Gulf Coast across the southeastern United States to the coasts of Florida, Georgia, and the Carolinas, having evolved a more hardy habit by growing without an aboveground trunk. Then, in Florida and on the Atlantic coast of Georgia and South Carolina, a trunked palm known as Cabbage Palmetto (*Sabal palmetto*) is found, similar to Mexican Palm. Thus, a gap exists from the Texas coast to Florida where no true trunked palms were found in a native state.

New botanical research indicates that a disjunct native population of Mexican Palm exists on Garcitas Creek, just upstream from the reputed site of Fort St. Louis. In several articles in botanical journals (Lockett 1990; Lockett and Read 1990; Lockett 1991), Landon Lockett has described the discovery and identity of this isolated and breeding population, in addition to a putative *Sabal mexicana/Sabal minor* hybrid population further up the coast (by two counties) in extreme southwestern Brazoria County. He makes a case that the natural range of Mexican Palm included the Central Texas coast, but the smaller and/or scattered populations there were logged for wharf pilings or removed for landscaping purposes. This discovery seems to pin down the extreme eastern limit of Mexican Palm as the Matagorda Bay area (Victoria and Jackson Counties). Lockett has cited Joutel's journal as evidence that trunked palms existed on Garcitas Creek, since Joutel mentioned seeing "...some trees resembling the Palm, whose lofty and long branches spread like that called the Latanier, bearing a fruit, said to be indifferent good" (Joutel 1714). Latanier is a French form of a native term for tree-like fan palms found in tropical regions

of the Atlantic Ocean (Lockett, personal communication). This term was used earlier in Joutel's journal as describing palm trees seen from the ship on the Isle of Pines south of Cuba. Also, since the palmetto does not make an edible fruit, but Mexican Palm does, Joutel seems to be describing a trunked palm tree distinct from palmetto, which can only be what is today called Mexican Palm.

There is another entry of botanical interest in Joutel's journal, which says "There is a sort of tree, which bears small berries, which, when ripe, are red and indifferent pleasant. It bears twice a year, but the second crop never ripens." This could be the small evergreen tree known as Anaqua (*Ehretia anacua*), which is endemic to South Texas and which has an edible reddish-orange fruit relished by birds. Due to its subtropical nature, it tends to bloom intermittently from fall through spring depending on seasonal conditions, a characteristic not shared by other red-berried native plants in the temperate zone of Texas. The extreme eastern limit for Anaqua is Calhoun and Victoria Counties (Simpson 1988), which form the western shore of Lavaca Bay and Garcitas Creek.

CONCLUSIONS

Since the natural range of Mexican Palm has now been shown to extend to Matagorda Bay, and a similar eastern limit is found for Spanish dagger (Cox and Leslie 1988) and Anaqua (Simpson 1988), it seems likely that La Salle's colony could not have been any further east on the Gulf Coast. Further, these small botanical facts can be added to Gilmore's model, and support the conclusion that Garcitas Creek is the site of Fort St. Louis.

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A PREHISTORIC BURIAL FROM THE RIO GRANDE DRAINAGE, TAMAULIPAS, MEXICO

James Bryan Boyd and Diane Wilson

ABSTRACT

A human burial salvaged at Falcon Reservoir in 1990 is discussed. Artifacts apparently associated with the burial were recovered and are described. A brief comparison is made with other burials salvaged from the same site.

THE BURIAL

On June 8, 1990, while recording archaeological sites on the Mexican side of Falcon Reservoir, the senior author discovered a human burial which had washed out along the shoreline in a large surface site.

The water level of the reservoir had been declining for about one month prior to the discovery of the burial. This drop in the lake's water level is a common occurrence during the spring and summer months. During that part of the year water is released through Falcon Dam in increased quantities in order to meet irrigation and other demands in the Lower Rio Grande Valley of Texas, as well as the northern state of Tamaulipas, Mexico. As the level of the reservoir drops many archaeological sites become exposed. Some of these sites are eroded appreciably by a prevailing southeasterly wind which blows almost incessantly in the area, creating large waves washing the shoreline.

When discovered, the burial had been completely eroded and the partial skeletal remains were found distributed over an area of recently exposed beach about 15-20 meters in diameter. All skeletal remains observed on the surface were collected for preservation purposes.

In 1995 the recovered skeletal remains were taken to the Texas Archeological Research Laboratory (TARL), The University of Texas at Austin, where they were examined in the Department of Anthropology. Due to the fragmentary nature of the remains, little beyond identification of an adult and associated faunal material was possible. Sex could not be determined and no pathological conditions were observed. The recovered skeletal material includes the right

parietal (top portion of skull), fragments of the left parietal (skull), femoral (upper leg), humeral (upper arm), ulnar (lower arm), clavicular ("collar bone"), and rib fragments.

THE SITE

The burial was located in a large archaeological site on the Mexican side of Falcon Reservoir across from Zapata, Texas. The site is located on a large peninsula which is located at the north edge of the Arroyo Custes, and becomes exposed only when the lake's water level is very low. The location of the site is west of the original Rio Grande riverbed, and northwest of the junction of the Rio Grande and the Rio Salado, which flows into Falcon Reservoir just west of Zapata, Texas (see Figure 1).

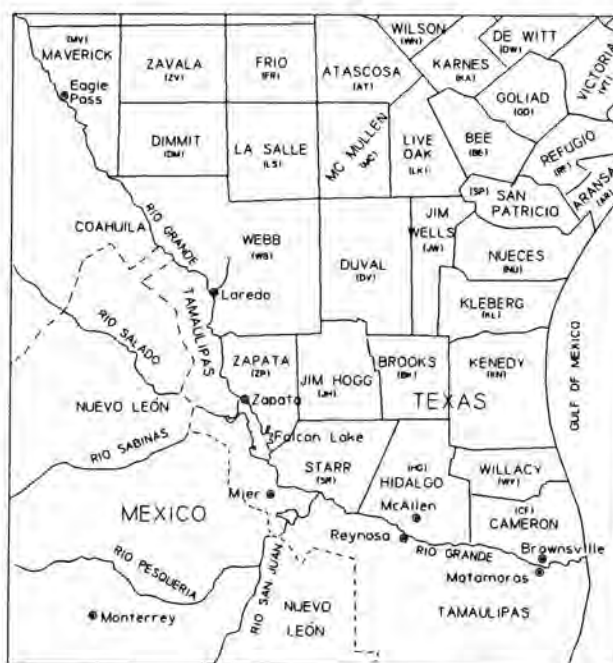


Figure 1. Location of area referred to in text. Falcon Reservoir is located near the center of the map.

The site is well known to relic collectors who frequent the lake, and is quite popular with them as it has yielded large numbers of projectile points, probably in the thousands, over the last 13-14 years. Many types of arrow points have been collected in the site, including Caracara, Perdiz, Starr, Toyah, and other styles. Dart points collected in the site include Abasolo, Catan, Desmuke, Langtry, Lerma, Matamoros, Pandora, Plainview, Shumla, Tortugas, and other styles.

The site is approximately 400 meters in length and 200 meters in width, oriented in a generally north to south direction. The burial being discussed was recovered in the southeastern quadrant of the site. The site lies within the vega zone as described by Nunley (1989:194-195), and within the Zapata terrace as described by Evans (1962:39-40).

On the date the burial was discovered, the elevation of Falcon Reservoir was 278.13 feet above mean sea level (International Boundary and Water Commission [I.B.W.C.] personal communication 1990). The normal pool elevation of the reservoir is 301.2 feet above mean sea level (I.B.W.C. 1975), therefore the water level of the reservoir was over 23 feet low.

THE ARTIFACTS

When the burial was initially discovered in June 1990, no associated artifacts were observed or collected. On September 1, 1990, the senior author was contacted by two avocationalists who reported that they had recovered numerous bone beads at the site where the burial had earlier been salvaged. The bone beads were reportedly scattered across a small section of the site. The following day the senior author accompanied them to the site where several more bone beads were subsequently recovered. The beads were found distributed over the same area where the skeletal remains had been salvaged nearly three months earlier.

There had been considerable rainfall in the area during the intervening months, and it is believed that the beads eroded out due to rain and wind erosion. Since the distributional pattern of the bone beads and the skeletal remains corresponded, it is believed that the artifacts were, in fact, associated with the burial. A small incised fragment of mussel shell was also recovered from the area where the bone beads were

found. It is unknown whether it was actually associated with the burial.

Bone beads

A total of 79 complete small bone beads were recovered in the area of the burial. The beads are of the type often found with burials in South Texas and northeastern Mexico. They appear to be the bones of small animals, perhaps birds. Similar bone beads have been noted in four other burials salvaged by the senior author at Falcon Reservoir, as well as numerous other burials discovered there by avocationalists during the last few years (notes on file with the senior author). Similar bone beads have been reported in the Lower Rio Grande Valley (Collins, Hester and Weir 1969:138-141), Falcon Reservoir (Cason 1952:239-243), and near Laredo, Texas (McGraw 1983:36-39), as well as many other portions of the state.

When strung, the 79 bone beads form a strand 48 centimeters in length. It is unknown whether the beads were in fact strung together in their original context. The longest bead measures 9.87 mm in length, while the shortest measures 3.96 mm. The width of the beads varies from 3.15 mm to 7.42 mm. One of the beads is incised along its circumference. Figure 2 illustrates the bone beads.

Incised mussel shell fragment

A single fragmentary portion of mussel shell with several incisions along one edge was recovered from the surface in the area where the bone beads were found (see Figure 3). Due to the fragmentary nature of the specimen it is impossible to determine the species of the mussel.

The artifact measures 23.11 mm in length and 8.07 mm in width. The specimen measures only 1.65 mm in thickness. There are 7 "U"- and "V"-shaped incisions along one edge of the specimen, apparently cut with a very sharp and fine instrument. Salinas reports (1981:25) that [chert] flakes and bifaces often form such marks when they are used in a sawing motion on shell.

Decorated mussel shell artifacts have been reported infrequently in the Falcon Reservoir area (Chandler and Kump 1992:8-14), as well as other areas of Texas. The senior author recovered a decorated mussel shell in a site on the Rio Salado in north-

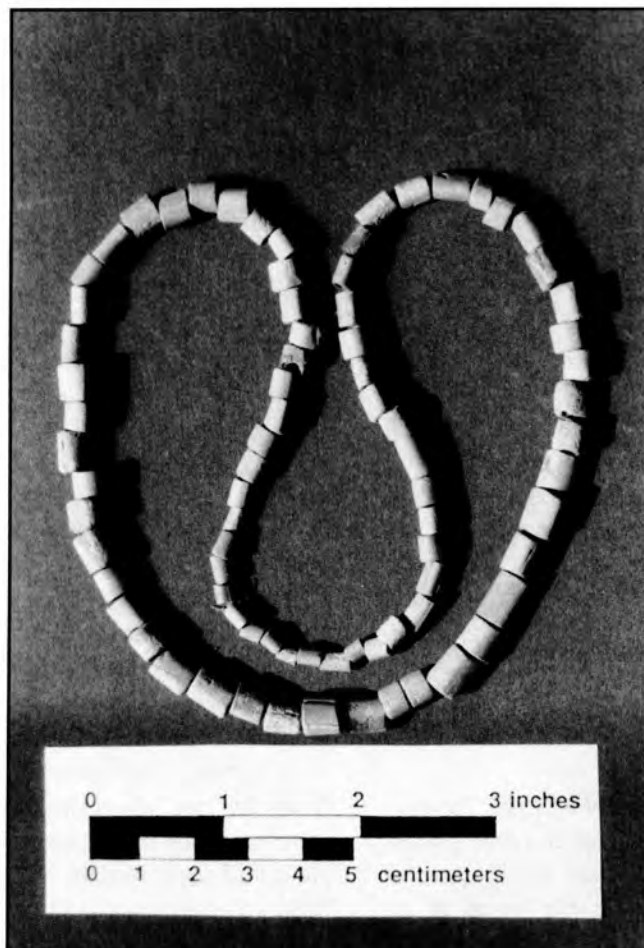


Figure 2. Bone beads recovered from burial site. The beads were not necessarily strung in this fashion in their original context.

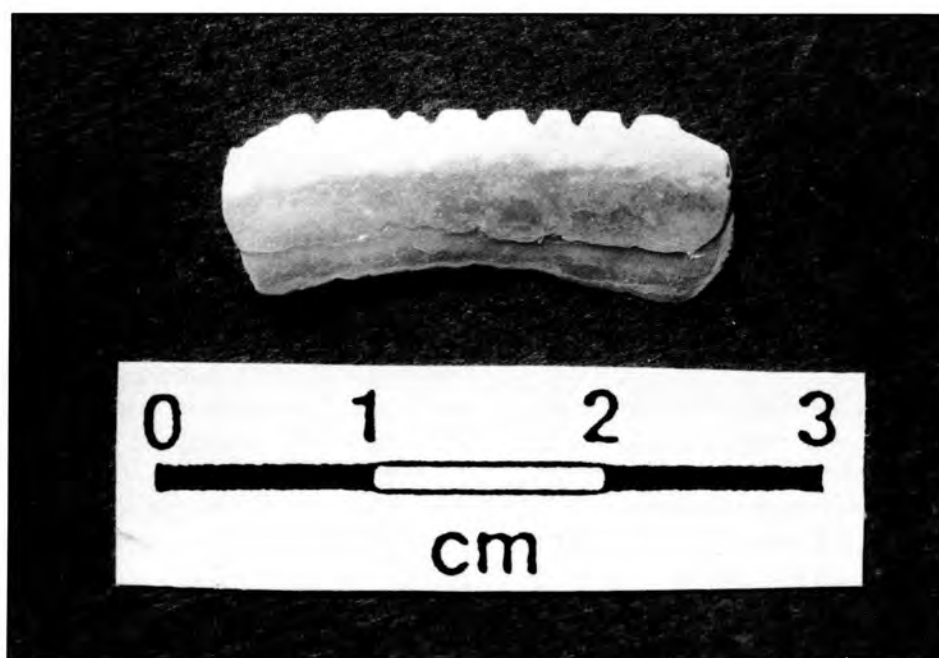


Figure 3. Serrated mussel shell fragment recovered from burial site.

ern Tamaulipas, Mexico in 1987. Other mussel shell artifacts, including beads, are found infrequently in the Falcon Reservoir area (Boyd, notes on file; Cynthia Scott, personal communication 1985; Erick Kruger, personal communication 1990). Additionally, Doug Bryan has recovered two serrated mussel shell pendant-like artifacts from Falcon Reservoir (personal communication 1987).

OTHER BURIALS

Three other human burials have been reported from the site which produced the burial at the focus of this report. Two of the burials had associated artifacts, but little or no skeletal remains were collected for analysis. In another case no associated artifacts were found, and only the skull and mandible were collected. A brief description of the burials is given below.

Kruger burial.

A burial discovered in May 1984 by Erick Kruger, formerly of McAllen, Texas, was that of a fully grown adult male. The senior author assisted Mr. Kruger the week following the discovery of the burial in an attempt to recover any associated artifacts with negative results. The cranium and mandible were salvaged, and were taken to TARL in 1995 for examination.

The examination revealed that the skull belonged to a middle-aged adult male, 35-49 years of age at the time of death, with an overall rugged appearance. Of particular interest were cut marks observed on the frontal, parietal, and occipital areas of the cranium indicating that defleshing might have been performed prior to burial. The cut marks are short and parallel and are most evident running perpendicular to the temporalis on the left parietal. They appear to have been produced by (chert) flakes rather than bifaces because they are narrow rather than broad and V-shaped.

Huston burial.

A burial discovered in February 1990 by the late Bob Huston, formerly wintering at Zapata, Texas produced numerous artifacts including 27 triangular projectile points or bifaces, three *Oliva sayana* shell beads, and one stone pipe (Hester n.d.: notes on file). This burial became exposed by dropping water levels when Falcon Reservoir was at an elevation of 277.22

feet above mean sea level. Unfortunately no information is available regarding the skeletal remains, which were apparently very fragmentary (Bob Huston, personal communication, 1995).

Scott burial.

A burial discovered on January 1, 1995 by Cynthia Scott, of Zapata, Texas produced a cache of 50 large triangular bifaces including one stemmed specimen (Cynthia Scott, personal communication 1995). A majority of the bifaces are made from Edwards Plateau chert (Michael Collins, TARL, personal communication 1995; see Hester 1995:443 Figure 20). Unfortunately so little skeletal remains were collected that no conclusions could be made other than they were of a single adult, sex undetermined, with no observable pathologies. This burial became exposed when Falcon Reservoir was at an elevation of approximately 280.0 feet above mean sea level.

Altogether, four human burials have been reported from the site, suggesting that it could well be a cemetery (Boyd n.d.: ms on file at TARL) and may yield still more burials as the water level of Falcon Reservoir continues to fluctuate.

CONCLUSION

The reporting of these four human burials contributes significantly to the sketchy database of information regarding burials in the area. Comparatively few human burials have been recorded in the area of Falcon Reservoir, and considerably more research is needed there in order to save a resource which is rapidly being destroyed by natural and manmade processes.

ACKNOWLEDGMENTS

Sincere appreciation is extended to Dr. Thomas R. Hester and Dr. Michael B. Collins of the Texas Archeological Research Laboratory, The University of Texas at Austin, for their invaluable help and contribution of information used in the preparation of this report. Special thanks also to Doug Bryan and Eric Hansen for alerting the senior author to the discovery of the artifacts associated with the burial. Information provided by Erick Kruger, Cynthia Scott, and the late Bob Huston regarding the other burials from the site was very interesting and informative.

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CLOVIS POINTS FROM KENDALL, TOM GREEN AND WALKER COUNTIES, TEXAS

C. K. Chandler

ABSTRACT

Clovis points from Kendall, Tom Green and Walker Counties are documented and illustrated. There is one from each county plus one that is without provenience.

DISCUSSION

Results of the Texas Clovis Fluted Point Survey (Meltzer 1987) documented only one Clovis point from Kendall County and none were reported from Walker and Tom Green Counties. This survey recorded a total of 205 Clovis points from 95 of the 254 counties in Texas. The one point from Kendall County was documented by Chandler (1983). Since the original survey Meltzer has updated his Clovis information (1989) and added 13 new counties to the known distribution and 36 new reports of previously unreported fluted Clovis.

There have been a number of previously undocumented Clovis points reported in *La Tierra* since Meltzer's 1989 update, and information on new specimens continues to move to *La Tierra* for publication. One new specimen from Kendall County was added by Chandler (1990). The new specimen reported here will increase to three the known number from Kendall County, making Kendall one of the few counties in the state with as many as three reported Clovis points.

This report and illustration of the two Clovis, one each from Walker and Tom Green Counties, adds these two counties to those having a Clovis fluted point presence.

THE ARTIFACTS

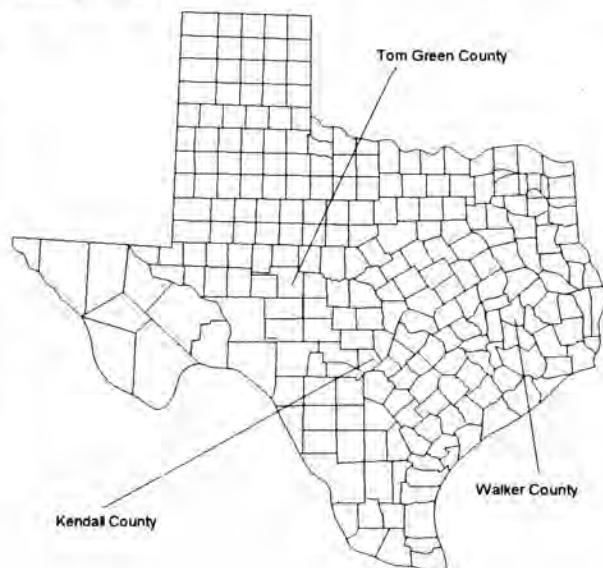
Figure 1, A, A' illustrates the one Clovis from Kendall County. It is an isolated find from north of Comfort near the Gillespie County line. It is made of good quality khaki tan Edwards chert. Flaking is irregular with some broad, lateral thinning flakes. It has fine edge trimming that has produced fine edge

serrations. The distal end is broken and approximately 20 mm of the distal end is missing.

Maximum dimensions are: 68.8 mm in length, 29 mm in width at 22 mm above the base, and it is 6 mm thick. Base width is 26 mm and base concavity is 4 mm. Lateral edges and base are not ground. It has a single flute on each face. The obverse flute is 14 mm long and 12 mm wide. The reverse flute is 15 mm long and 9 mm wide. It weighs 16 grams and is without patina.

Figure 1, B, B' is a complete Clovis point made of mottled brown chert of good, but not excellent, quality. It is a surface find from about one-half mile west of the Middle Concho River near Tankersly in west central Tom Green County southwest of San Angelo.

This point is 110.5 mm in length and has a maximum width of 28 mm at 35 mm above the base. It is 8.7 mm thick at 35 mm above the base. Base width is 27.3 mm and it has a basal concavity of 4 mm. Lateral edges are parallel to 55 mm above the base and are heavily ground 32 and 37 mm above the base. The base is also ground. Flaking is broad parallel to irregular. There are two flute scars on the obverse that are 30 mm long by 17 mm wide. The single flute on the reverse is 25 mm long by 10 mm wide. It weighs 30.5 grams.



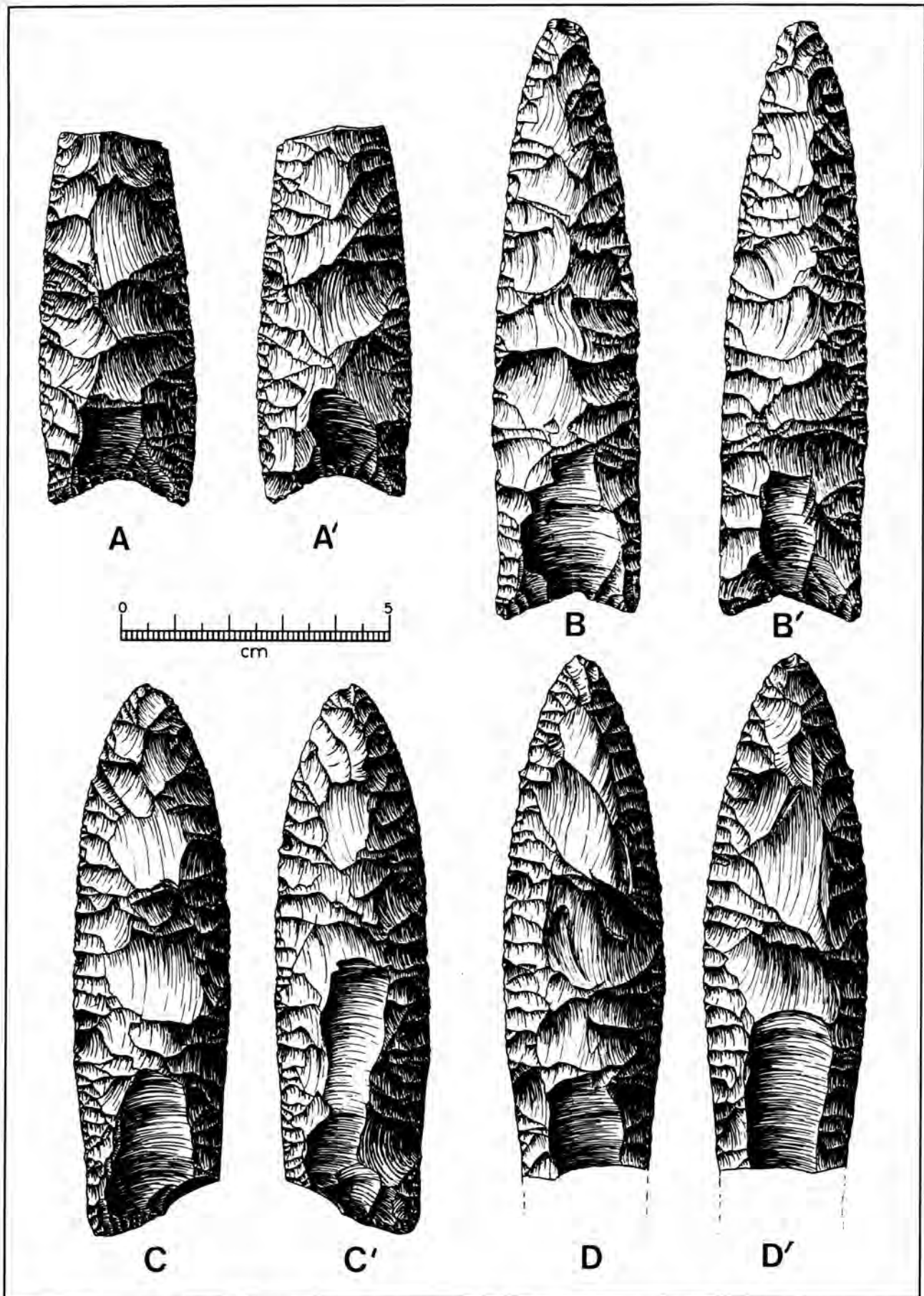


Figure 1. Specimen A, A', A fluted Clovis point from north Kendall County; B, B', A fluted Clovis point from west Tom Green County; C, C', A fluted Clovis point from near Huntsville in Walker County; D, D', a fluted Clovis point without provenience. This specimen is believed to be from East Texas.

Figure 1, C, C' is a near complete fluted Clovis made of good quality khaki tan heat treated chert with a large gray streak occupying much of the distal half. It is a surface find from a cultivated field near Huntsville in Walker County. There are no previous reports of fluted Clovis points from Walker County.

This point is 101 mm in length, 29 mm maximum width and is 8.4 mm thick. Base width is 24 mm. Edges are ground 32 mm. There is a single flute on each face. The obverse flute is 47 mm long by 12 mm wide. The reverse flute is 25 mm long by 14 mm wide. It has a basal concavity of 2 mm and weighs 35 grams. There are broad lateral thinning flakes on both faces. Overall flaking is parallel to irregular.

Figure 1, D, D' is a near complete fluted Clovis with a broken base that has been reconstructed. This specimen is without provenience but is believed to be from East Texas. It is made of good quality medium gray Edwards chert.

This point is 110 mm in length with a maximum width of 31 mm at 61 mm above the base. Maximum thickness is 9.4 mm at 32 mm above the base. It is fluted with a single flute on both faces. The obverse flute is 24 mm long and 15 mm wide. The reverse flute is 32 mm long and 15 mm wide. The base flares slightly and it appears to have had a basal concavity. It weighs 35 grams.

ACKNOWLEDGMENTS

The Clovis point from Tom Green County is in the Mike Redwine collection and I extend my sincere appreciation to him for the loan of this specimen for documentation and illustration. I also extend my appreciation to the owners of the other specimens who have asked that they not be named. Richard McReynolds prepared all of the illustrations and I extend my sincere thanks to him.

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AN AGAVE PINCUSHION FROM A DRY ROCKSHELTER IN COAHUILA, MEXICO

Solveig A. Turpin

ABSTRACT

A simple artifact found in a dry rockshelter in northern Coahuila contributes to a better understanding of the well-developed fiber industry in northern Mexico and southwestern Texas. A blocky desiccated piece of agave, impaled by the terminal spines of at least four agave leaves, was apparently used as a pincushion that served several purposes, including keeping the stripped fibers out of the ashy shelter fill, protecting the worker from the sharp spines, and holding the raw material close at hand where it could be woven or sewn using the spine as the needle.

ARTIFACT DESCRIPTION

An unusual artifact collected from a dry rockshelter in the Sierra de la Encantada, in northern Coahuila south of the Big Bend (Figure 1), is apparently a prehistoric pincushion. Although simply fashioned from readily available material, this artifact illustrates one systematic way of ordering materials for use in the fiber industry. The cushion is a roughly oblong piece of thick agave leaf, probably maguey or century plant (Figure 2), but now deprived of its epidermis. Impaled in the now-desiccated vascular tissue are four spines, the tips of agave leaves that had been stripped of pulp to expose the fibrous strings used in sandals, baskets, cordage, and rabbit skin robes, among other items. This simple artifact served the triple purpose of safety, convenience, and cleanliness, keeping the strings near at hand, buffering the sharp spine that held them together, and holding it all up out of the ashy dirt that dominates the shelter deposits.

LOCATION

The source of this unusual artifact is a rimrock shelter overlooking the huge intermontane Valle de Encantada which is surrounded by the mountains of the same name. The Encantadas are an exceptionally precipitous outlier of the Sierra Madre and the Sierra del Carmen (Smith 1970), fronted on the west by the

Bolsón de Mapimí and on the east by the Arroyo de la Babía, the well-traveled route between Spanish outposts at Santa Rosa (Muzquiz), San Vicente, and finally, El Presidio del Norte (Flores 1881). Verticality lends biotic diversity, with vegetation ranging from mixed pine-oak forest to desert scrub with an abundance of fiber-producing succulents available within easy reach of the site (Muller 1947). The climate is arid and at present there is no natural source of potable water in the valley although springs flowed historically.

DISCUSSION

No systematic excavations have been undertaken in the site where the pincushion was found, but investigations in another similar shelter indicate episodic, probably seasonal occupations that were apparently oriented toward the exploitation of vegetal resources. At nearby Cueva Encantada, sandals were relatively common, as were pieces of matting and bundles of unprocessed sotol leaves and grass that were apparently raw material for the fiber industry (Turpin and Carpenter 1994).

A major problem in any of these dry rockshelters is the fine ashy sediments that are easily stirred by the slightest motion. A number of the grass-lined features commonly found in these sites seem to be padding used to keep raw materials or foodstuffs away from the all-pervasive dust. The pincushion would serve just such a purpose while also protecting bare feet and hands from the sharp spines at the tip of the agave leaf. Modern cottage industry agave processors in this region use a modified draw knife, pulling the fibrous leaf beneath its blade, stripping the pulp. The leaves are then reversed and pulled through again to remove the last traces of cellulose. In the case of the pincushion threads, the leaves were less completely stripped, leaving the sharp terminal spine to hold the single threads together until they were used. Conceivably, the spine was the needle used to weave the threads through bulkier material, such as the body of a sandal or the twisted fur of a rabbit skin robe.

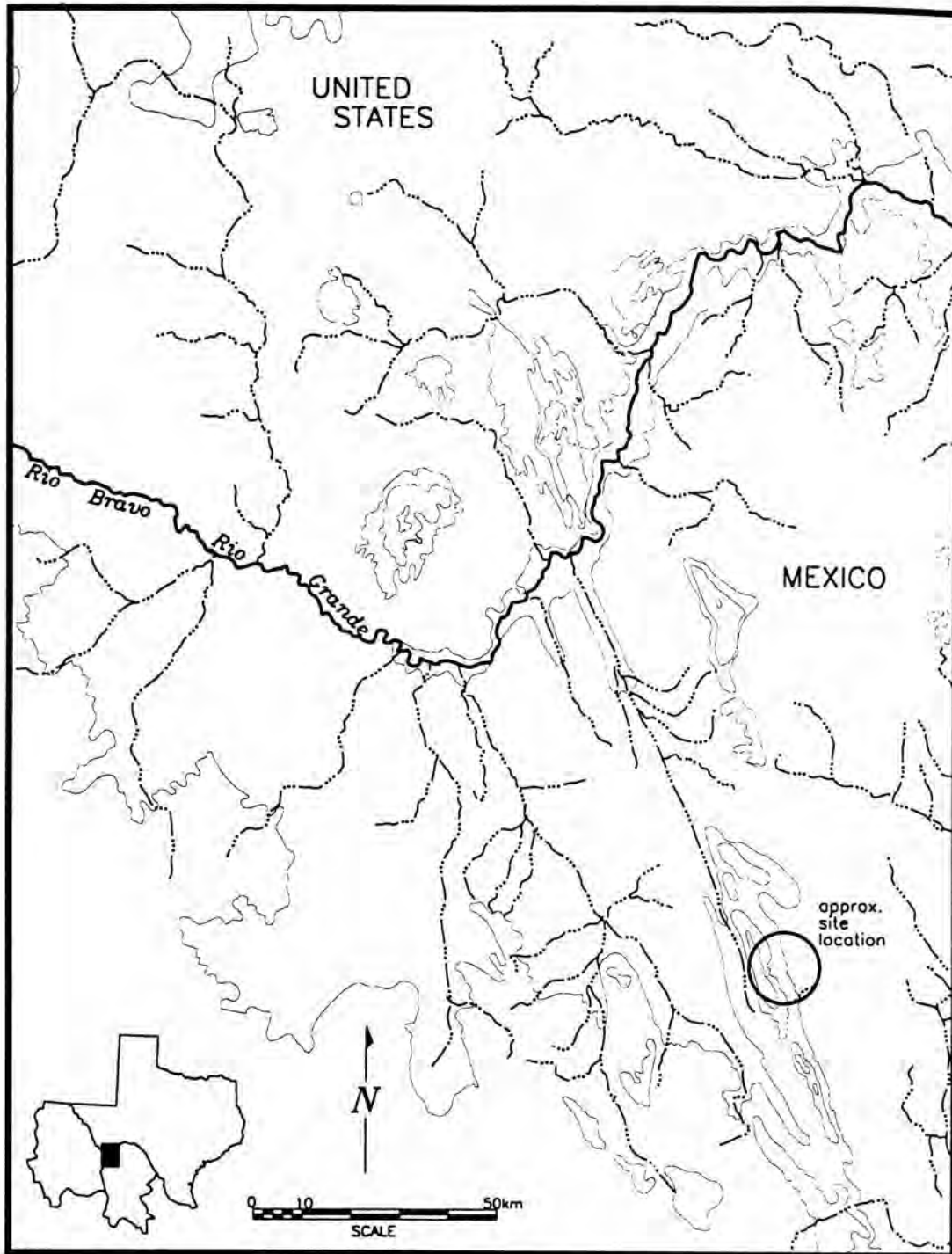


Figure 1. Map showing general location of rockshelter.

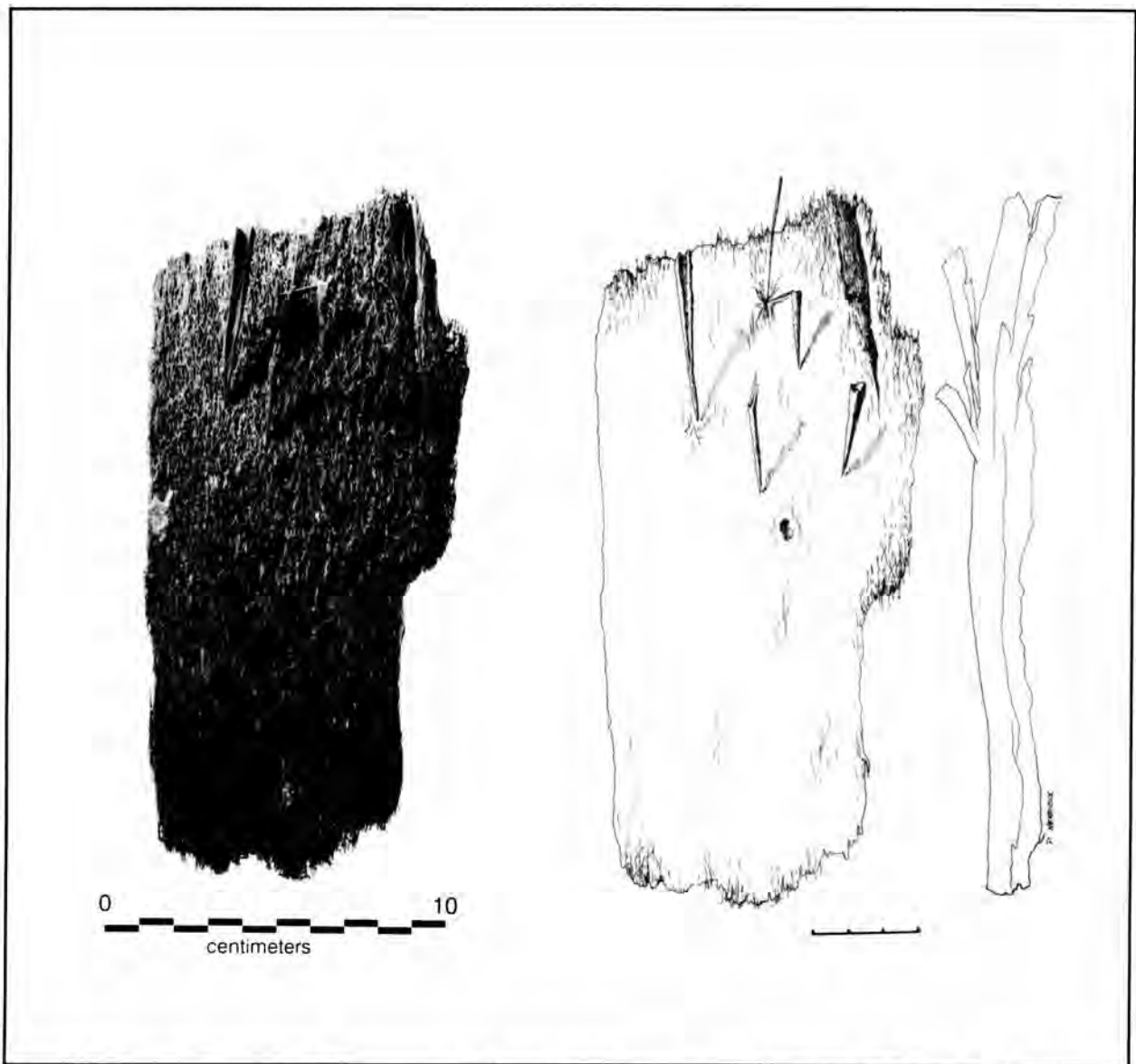


Figure 2. Agave pincushion. Photograph (left) and artist's rendition, front and side view (right, same scale).

The survival of such a simple artifact is the fortuitous result of its discard in a well-protected dry environment. Fortunately, this unremarkable piece of agave caught the eye of John Woodhull of San Antonio who visited the cave over 30 years ago when a local ranch worker turned up with a number of painted bones he had exhumed there (Turpin 1996). The artifact so intrigued Mr. Woodhull that he rescued it from the relic hunter and kept it stored away until he learned of my interest in the site. The mundane use of readily available material so clearly exemplifies the

systematic and efficient production of raw material for the fiber industry that it merits this reporting.

ACKNOWLEDGMENTS

Mr. John Woodhull of San Antonio loaned me the agave pincushion after he learned from Alden Scott McKellar, former owner of the Mariposa ranch, that I was working on the material culture of the Encantada valley. David Riskind kindly helped me with the botanical details. Carole Medlar drafted the location map and Pam Headrick drew the artifact illustration.

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FROM FIELD NOTES, ARCHAEOLOGY MAGAZINE
 SEPTEMBER/OCTOBER 1996

TUT ALE

A beer similar to that brewed in ancient Egypt has been created by the Scottish and Newcastle Breweries of England in collaboration with the Egypt Exploration Society of London.

Using a malt from emmer wheat and coriander, the brewers produced an initial run of 1,000 bottles of "Tutankhamun Ale," proceeds to benefit Egyptian archaeology.

MIDDLE-AGED ICE MAN

Microscopic analysis of the Tyrolean Ice Man's bones indicates he was close to 50 years old when he died 5,000 years ago.

Earlier estimates had put his age between 25 and 40.

PARK SERVICE INVENTORY

The National Park Service's completed inventory of Native American remains and associated funerary objects in its collections has been sent to 139 Indian tribes and Native Hawaiian groups.

The inventory took five years to complete and was mandated by the 1990 Native American Graves Protection and Repatriation Act. Much of the material may be returned to Native American groups.

THE HATFIELD SHELTER PICTOGRAPH SITE (41KR493) IN WESTERN KERR COUNTY

Bryant Saner, Jr.

ABSTRACT

This report is to document and discuss the pictographs at the Hatfield Shelter located in western Kerr County, Texas. Prehistoric paintings in this county are extremely rare and every effort should be made to preserve, document and record them.

INTRODUCTION

Pictographs in the Hill Country of Texas are very rare. Several people have mentioned Indian paintings in the Kerr County area. When attempts are made to track down these "cliff paintings" it is difficult to obtain information about them. Site 41KR493 is the first documented Indian pictograph site in Kerr County, Texas, and it was documented and recorded in 1992 (Hatfield 1992). As a youngster in the early 1960s the author visited this site. Unfortunately, the pictographs were not noticed. Two other pictograph sites are mentioned in the literature as being in Kerr County. These sites are in the western part of the county. Both sites are described as being very dim or practically wiped out by the weather (Jackson 1938). There are three pictograph sites 15-20 miles southwest of 41KR493, in northeastern Real County. Two pictograph sites are also mentioned in the literature about 35 miles northwest of 41KR493 in Kimble County (*ibid.*). Another pictograph site can be found at the Lehmann Rock Shelter, 40 miles to the northwest, in Gillespie County (Newcomb 1967). Fifty-five miles to the east, near Sisterdale in Kendall County, is still another pictograph site (Neureuther 1984).

THE SITE

41KR493 is located in western Kerr County, Texas, on the banks of the north fork of the Guadalupe River. It is a cliff shelter that faces the southwest. The length of the shelter is approximately 100 feet (ca. 30 meters). It has very little overhang, except in the center where it goes back 8 to 10 feet (2.5 to 3 meters). The floor varies in width from three to 15 feet (one to 4.5 meters). Large boulders are scattered

about the floor and some down the slope in front of the shelter. Burned rock is seen on the floor and down the slope. In the center of the site is a large oak tree, approximately 6 feet (2 meters) out from the bluff. There is a rock wall approximately 3 feet (1 meter) high from the back of the shelter to this tree. To the east side of the tree is a ring of rocks, perhaps used for a campfire. South of the ring of rocks is a large pile of rocks (Figure 1). It appears the wall, the circle and possibly the pile were intentionally made. It is the opinion of the author and members of the survey team that these features were made by modern man and not by the prehistoric inhabitants. There are two reasons for this line of thought. First, the author does not recall seeing these when visiting this site in the early 1960s. Second, the ranchers in this area would use caves and cliff shelters to protect their livestock from the weather. They would build windbreaks to further protect them, and traps to aid in catching livestock and wild hogs (Bill Armstrong, personal communication 1996). There has been uncontrolled digging in the overhang area near the center of the shelter. This involves only a small area of the site. The remainder of the floor and talus appear intact.

The pictographs at this site are located on the southeastern one-third of the shelter. They begin on this end and extend 25 feet (7.5 meters) to the northwest (Figure 1). Starting approximately 16 feet (5 meters) from the southeast end are red faded areas



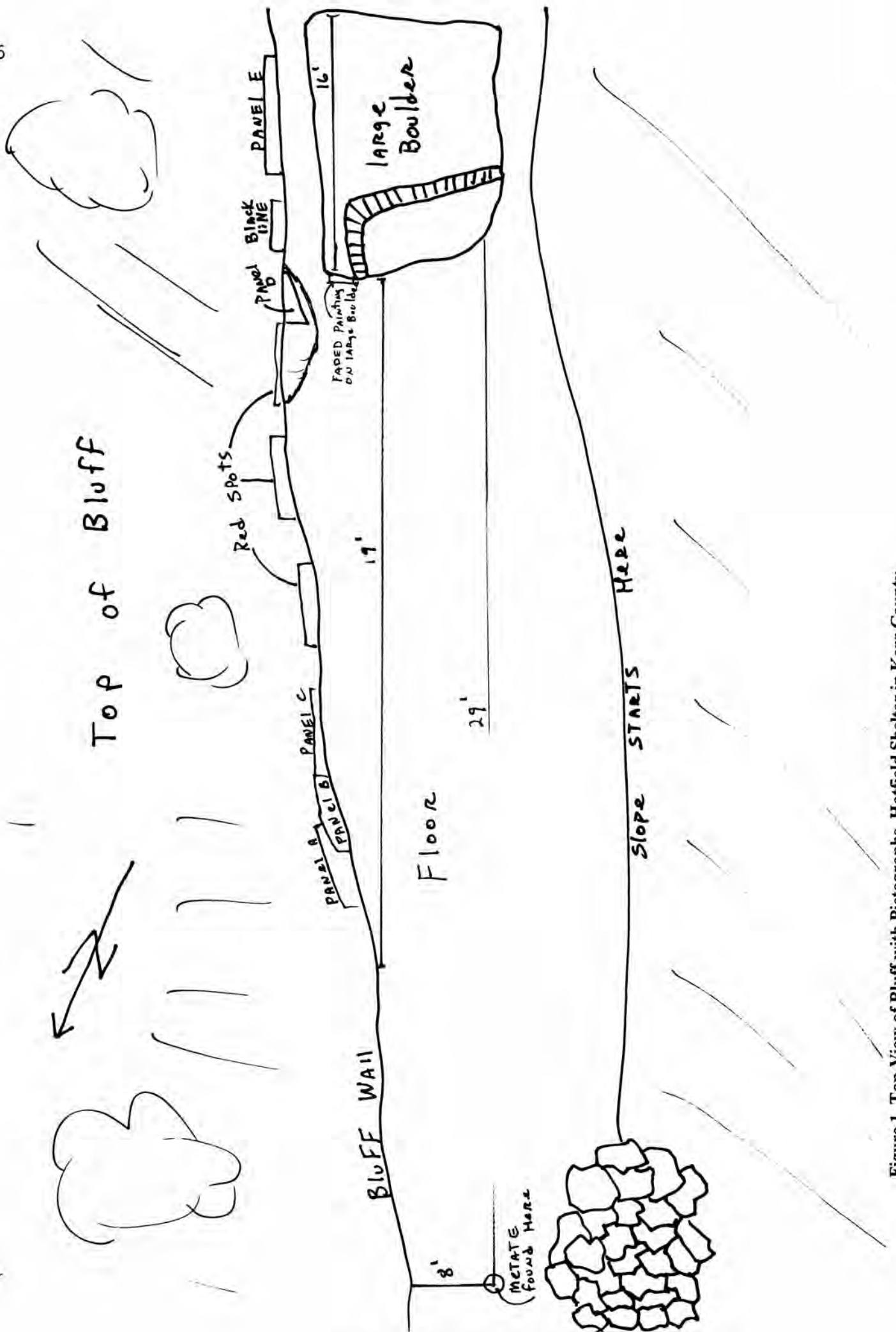


Figure 1. Top View of Bluff with Pictographs. Hatfield Shelter in Kerr County.

mixed with the pictographs. Beyond this, starting at 25 feet (7.5 meters), there are red faded areas that continue toward the center of the shelter that may have been pictographs at one time. It is also possible these red spots are moss or lichen that have dried leaving the appearance of faded red paintings. No designs are seen in this area. There is a large boulder at the southeast end of the shelter that has a faded painting on the northwest face, perpendicular to the bluff (Figure 2). This boulder has a step-like area on the south corner that is very smooth and may have been used as a work area (Komatsu 1991). It appears that the drawings in Panel D (Figure 6), Panel E (Figure 7) and the black line shown below Panel E (Figure 2), were made while the painter stood on top of this boulder. There is very little slope to the bluff wall where the paintings are located. This allows sunlight and rain to reach the pictographs with little difficulty. The constant exposure to the elements has contributed, and continues to contribute, to the demise of these drawings.

ARTIFACTS

The only lithic artifact found at this site during the author's visit, many years ago, was a Frio dart point (Turner and Hester 1993). The proximal end of a deer ulnar tool was also recovered at this time (Hester 1980). During recent visits several artifacts were found. They consist of a Marcos dart point, a mano and a metate (Turner and Hester 1993). The mano and metate do not appear to be a set. The metate was found with the grinding surface down (Figure 1). There is a pinkish-red color around the bowl. This may be pigment left while grinding material for paint. It also could be moss or lichen that has grown on the metate and dried, leaving this color on the stone. This pigmentation is very similar to that found on the bluff wall mentioned above. A large, wide bone was recovered that may be bovine in origin from recent times. One other bone was recovered. It appears to be a limb bone of a medium size animal. This area of Kerr County has been, and still is, used for ranching. Several types of livestock are raised in this area, including cattle, sheep and goats. All recent artifact finds at this site were removed from the site and given to the appropriate authority for safekeeping. Most of the artifacts were surface finds. One was found extending from soil in an area where uncontrolled digging took place. It is reported that a burial was

taken from this site (Hatfield 1992). It is also reported that this burial was removed from a ravine that is on the north side of the shelter in 1963 or 1964 (Donnie Harmel, personal communication 1996). No excavating was done at the time of the recent visits.

THE PICTOGRAPHS

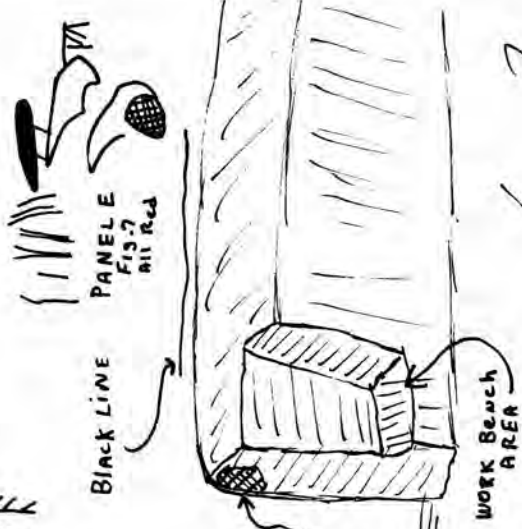
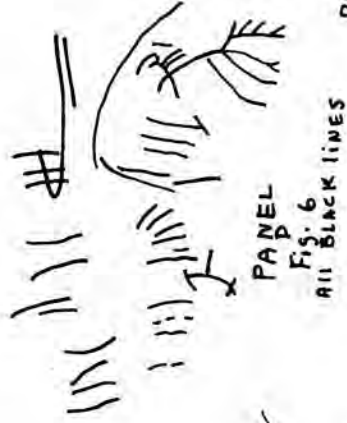
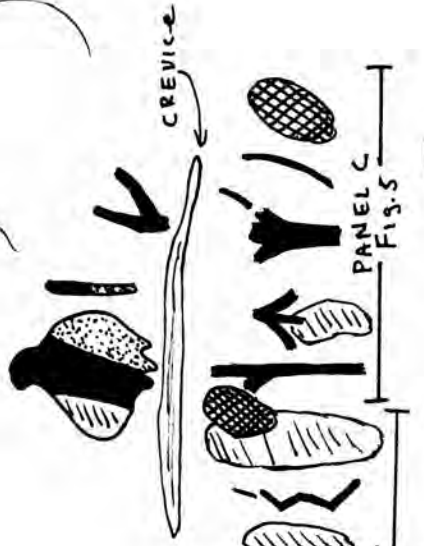
The predominant color of the pictographs is red with some yellow noted. There are slender black lines found in Panel D (Figure 6) and a single black line shown in Figure 2. Red lines are present in Panel E (Figure 7). In the discussion below all designs are red in color unless otherwise noted.

Panel A (Figure 3) consists of a directional arrow-shaped design pointing up (Figure 3-1). The only other detectable design in Panel A is a line, curved at the bottom, going up and to the right. Approximately one-half of the way up there is a short, stubby line going in a downward direction (Figure 3-2). There are many faded spots and one red and yellow faded spot on Panel A.

In Panel B (Figure 4), the directional arrow, pointing up, is found again (Figure 4-1). It sits atop a long main stem that has two branches that extend out and downward. The one on the left is long, the one on the right is short and stubby. The long branch on the right goes into a faded area that may be part of the design. Next to the faded area is a vertical line with many short branches that go down and out from the main shaft (Figure 4-2). The left side has five of these short branches, all in the lower half. The right side has six short branches that start near the top, with the last one being at the bottom. Next in this series is a curved line (Figure 4-3). Due to the fading, it is difficult to determine if this is part of Figure 4-2 or a separate painting. A faded spot is to the right of the curved line. Next to this is a zig-zag line with a short, vertical line above it (Figure 4-4). It is difficult to tell if this line is part of the zig-zag line. There is a faded area to the right of Figure 4-4 with no detectable design seen.

The top part of Figure 5 (Panel C) consists of faded red paint that blends with an area of red paint. Adjoining the red paint on the right side is an area of yellow paint (Figure 5-1). A lively imagination could create an anthropomorphic figure from Figure 5-1, but there is no detectable design here. There is a thick vertical line to the right of Figure 5-1. It has red on the top half and yellow on the bottom half (Figure 5-2). These two figures may be part of the same design,

BLUFF WALL



- RED
- ▨ FADED RED
- ▩ YELLOW
- ▧ ROCK FLAKED OFF

NOT TO SCALE

FLOOR

Figure 2. Front View of the Bluff Wall with Pictographs, Hatfield Shelter, Kerr County.

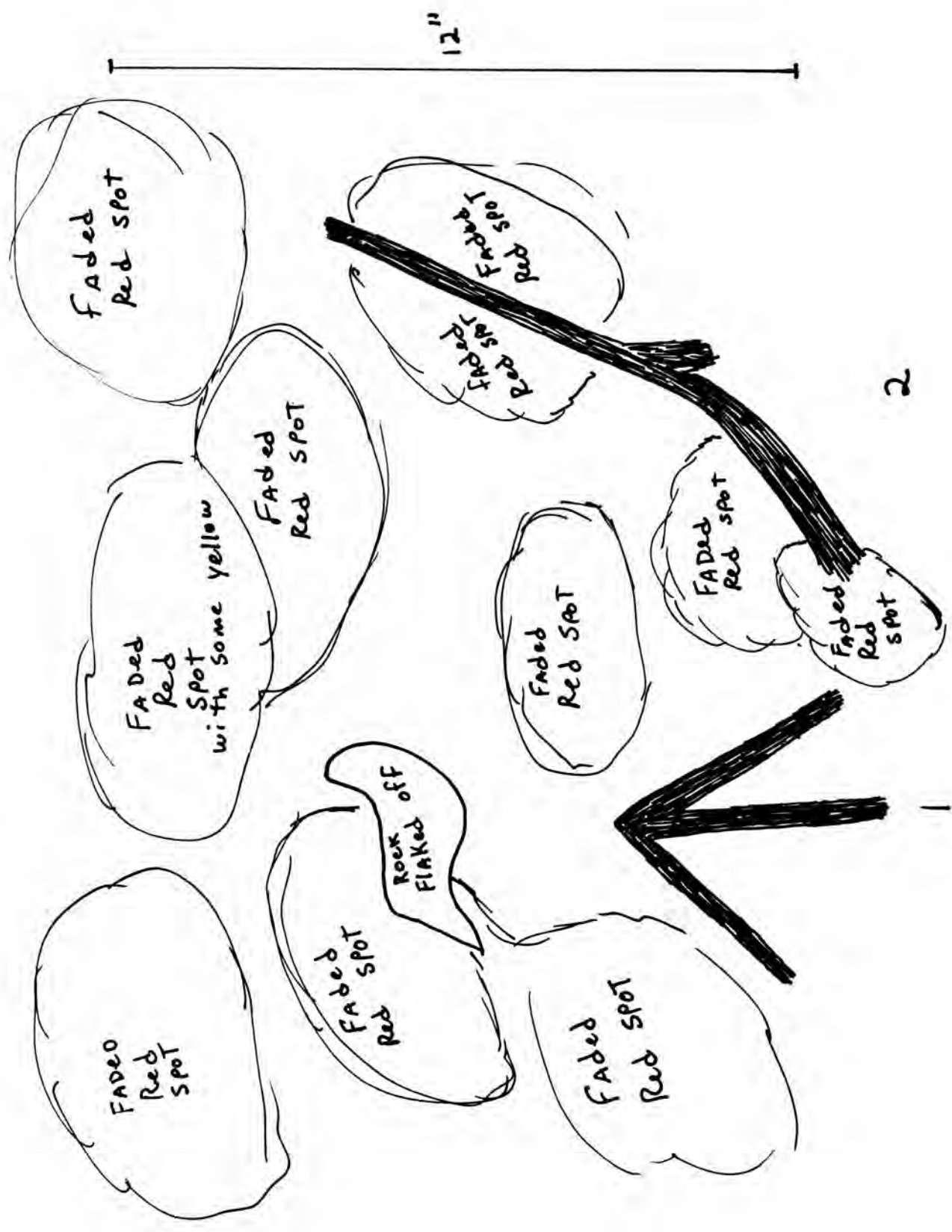


Figure 3. Panel A is composed of red pictographs and faded areas.

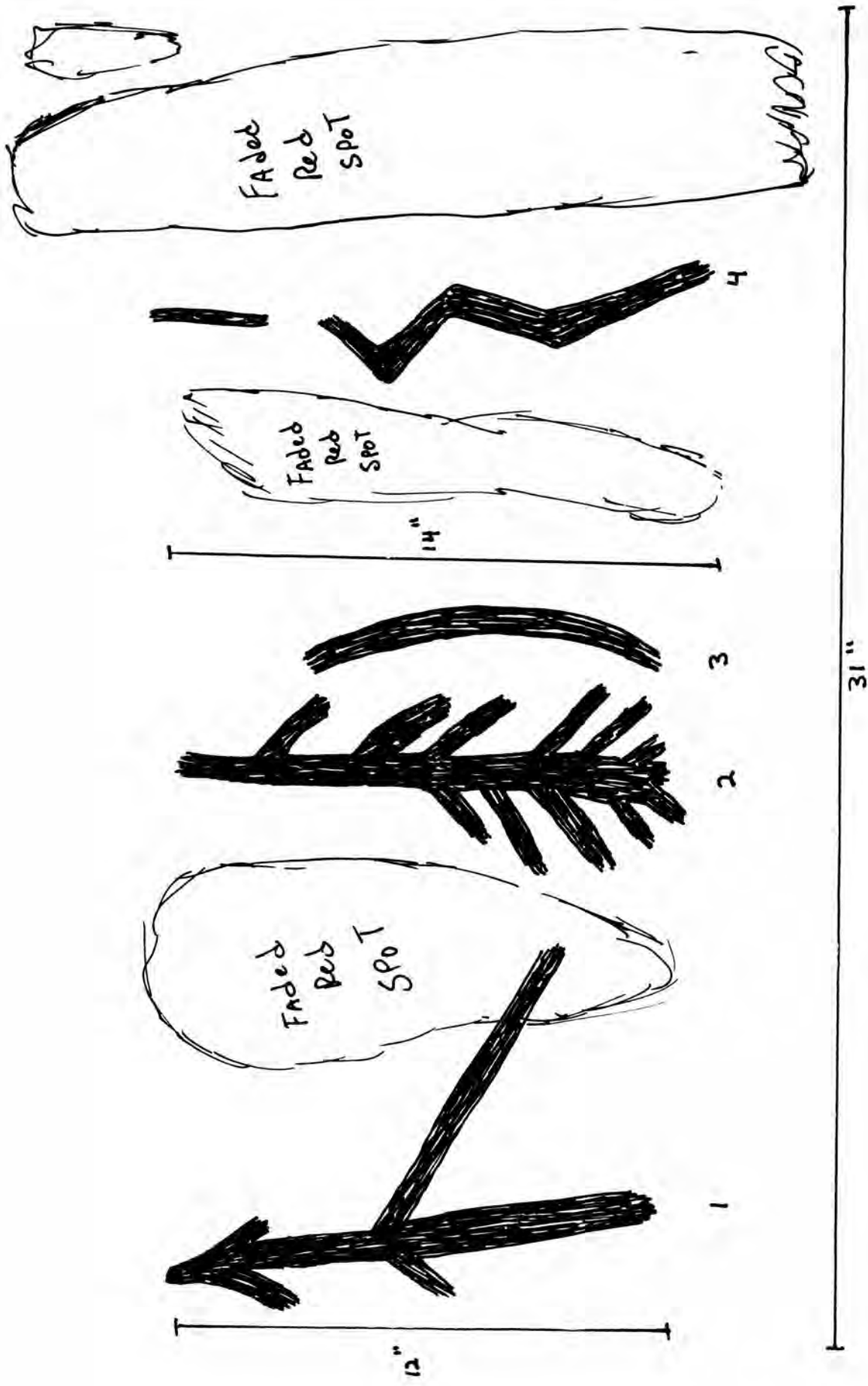


Figure 4. Panel B is also composed of red pictographs and faded areas.

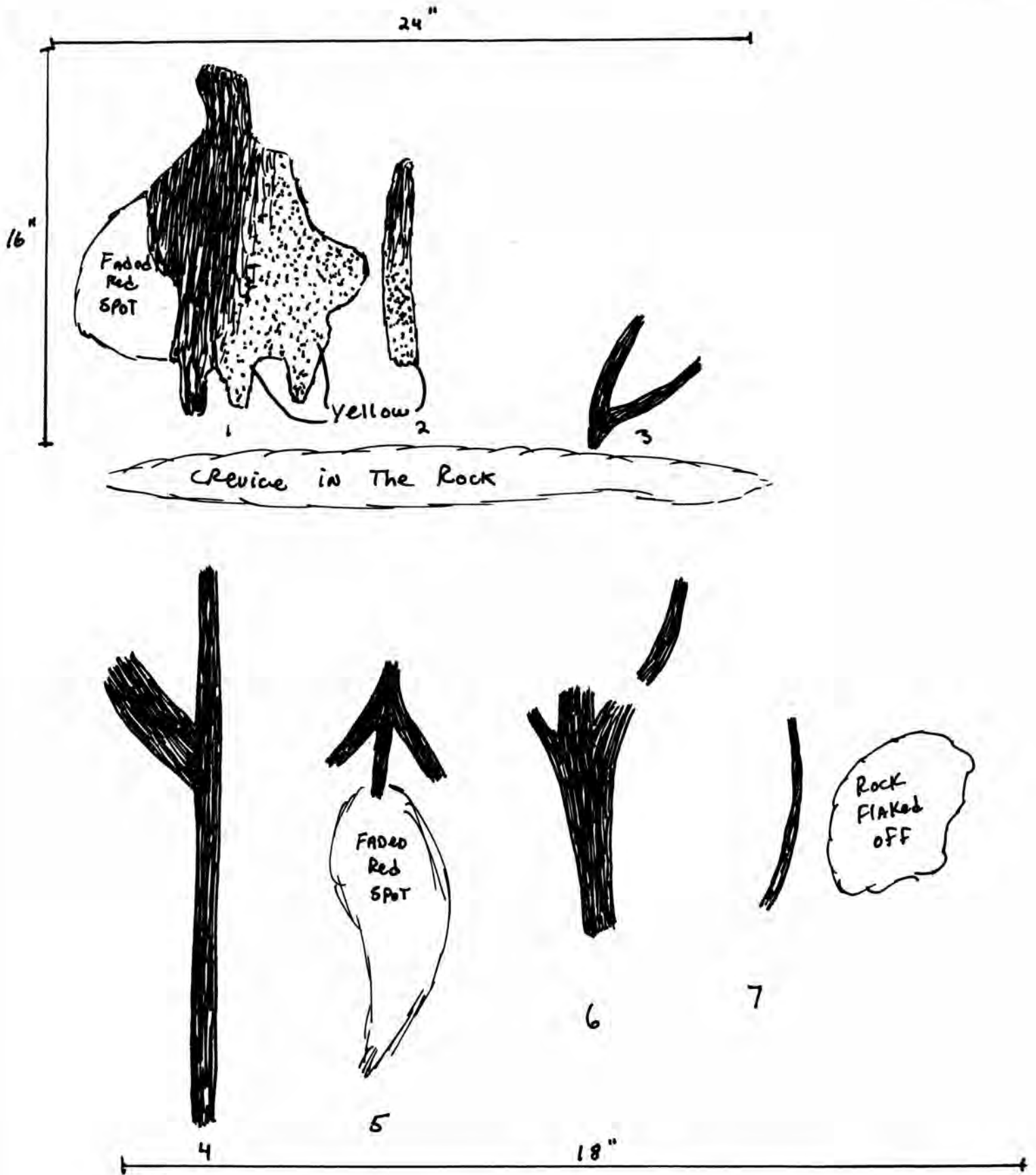


Figure 5. Panel C is a combination of red and red and yellow pictographs and faded red areas. (For complete panel, match arrows at left with those at right of Figure 4.)

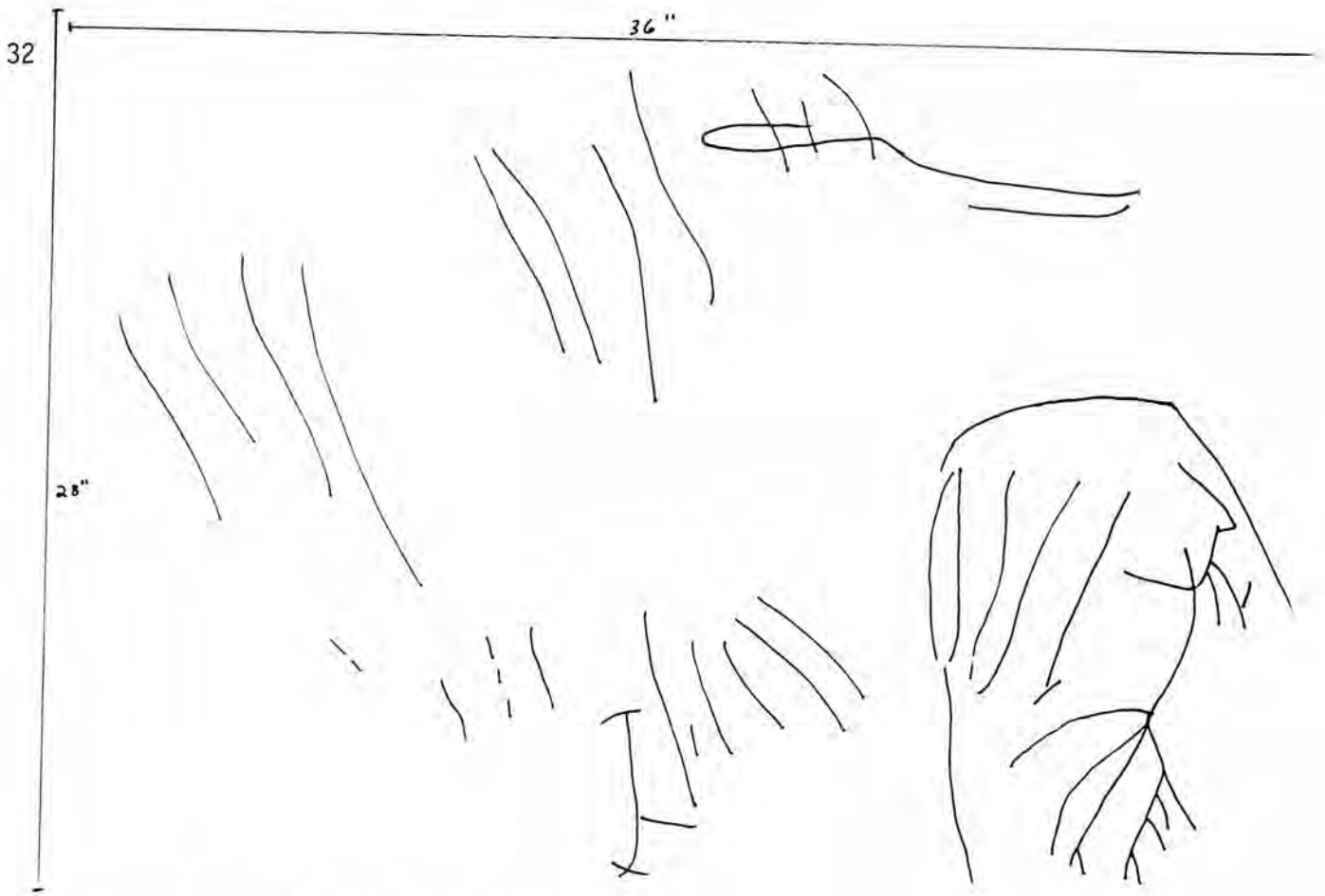


Figure 6. Panel D is made up of all black lines.

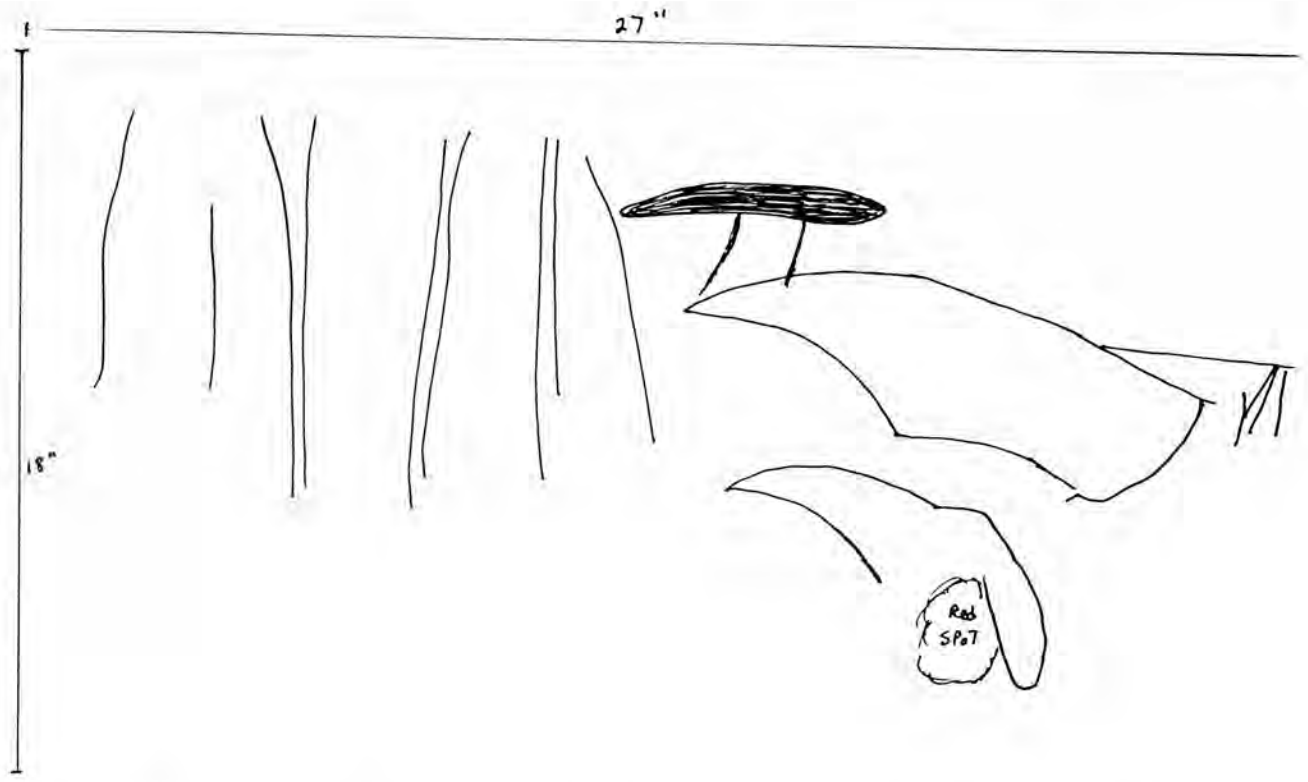


Figure 7. Panel E is composed of red lines, two wing-shaped designs and a solid red figure.

but fading prevents this determination. Figure 5-3 is a wishbone-shaped drawing to the right of Figure 5-2. Below Figures 5-1, 5-2 and 5-3 are more designs. Panel B and Panel C are parts of the same group of paintings. When the small arrows on the right side of Panel B are joined to the left side of Panel C the entire grouping may be seen. Starting at the lower left of Panel C is a vertical line with a short stubby line going in an upward direction. This stubby line is approximately one-fourth of the way from the top on the left (Figure 5-4). Next to this, is an arrow with slightly concave sides. The stem extends downward into a faded area that may be part of this design (Figure 5-5). To the right of this is a stubby line with three prongs at the top. The prong on the left is narrow, while the other two prongs are thick. Above, and slightly to the right of the prong on the right, is a short curved line. It appears that this is probably part of this prong, but, again, exposure has taken its toll (Figure 5-6). The last design in Panel C is a slender curved line (Figure 5-7).

Panel D (Figure 6) consists of a series of horizontal and vertical thin black lines. No identifiable designs are seen here. Some of these lines may have been attached to form a pattern, but varying degrees of fading makes this impossible to determine.

Panel E (Figure 7) is all in red. The left half of this panel consists of a series of vertical lines. Some are parallel and may have had paint between these lines. In the top center is a cigar-shaped figure with two slender lines extending downward from the base with the right line extending into the drawing below. The body is solid red. Below and to the right is a wing-shaped design. From the top right of the wing there is a horizontal line extending to the right. This line has four short vertical lines beneath it. Three of these touch the horizontal line. The fourth line is attached, at its midpoint, to the bottom of the first vertical line. Below this design is another wing-shaped drawing. It is smaller in size and rounded on the lower right border, with a faded area attached to the left side of the rounded portion. The convex bottom line of this wing does not extend to the faded area. Below and to the left of Panel E, level with the large boulder, is a black line approximately three feet in length (Figure 2). It is the same style as found in Panel D.

Some vandalism is noted at this site. The design in Figure 4-1 appears to have had an attempt to clean it. The area around this painting is lighter than the surrounding rock wall. Small scratches are exhibited

in this area as if it were brushed. This painting is faded more than the others in Panel B (Figure 4), probably as a result of this action. Small pitted areas that may be pick impact marks are noted in some of the faded areas below Panel D (Figure 6). These areas are mentioned earlier in this report but not illustrated. Several small scratch marks are noted in the cigar-shaped design seen in Panel E (Figure 7).

Please note that all pictographs described in this report are very faded. The illustrations are made darker than the actual pictographs in order to allow the reader to better visualize them.

DISCUSSION

There is not much to compare these drawings to in the immediate area since Kerr County has no other documented pictographs. The pictograph sites described by Jackson do not have illustrations, description of the paintings or photographs accompanying them. There is no evidence that they were ever recorded at the Texas Archeological Research Laboratory in Austin, Texas. He states that one site was not studied and the other as being practically wiped out by weather. Both of these sites are located in western Kerr County. At first it was believed that one of these pictograph sites may be the Hatfield shelter. After further review neither site appears to be the one discussed in this report. The one in the area of 41KR493 is six to seven miles to the west and described as a large bluff, not a shelter. The other site, 12-15 miles north of 41KR493, is said to be a small shelter, with a midden in front of it (Jackson 1938). These descriptions do not match that of 41KR493. The Lehmann Rockshelter has part of one painting that can be used as a comparison. This is an arrow that is part of a figure made from dotted lines. The arrow appears to be the head of an anthropomorphic drawing (Newcomb 1967). It is similar to arrows found in Figure 4-1 and Figure 5-5. The only comparison that can be made with the Frio Canyon pictographs is the drawing of a bird with its wings extended (*ibid.*). The wing on the left side of the bird's body is similar to the wing just below the cigar-shaped design. In Figure 7 the bird's body was not drawn by the painter. To discuss this may be reaching for a comparison. Frio Canyon was mentioned above, so it is discussed at this time. The two pictograph sites Jackson (1938) mentions in Kimble County are not comparable to the Hatfield shelter pictographs. They

are a completely different style. The two other sites in the vicinity of the Frio Canyon site were not studied by Jackson and no drawings were made (*ibid.*). The paintings in Figures 4 and 5 compare to paintings found in Webb County. Some of the Webb County paintings are nearly 1.5 meters in height, while paintings at the Hatfield Shelter are smaller. Red and yellow paint is found at both sites and at both of these sites the drawings are, for the most part, vertical and are side by side on a horizontal plane. The zig-zag line in Figure 4-4 is similar to one found in the Webb County drawings (Hester 1986). The pictographs in Kendall County have very little comparison to 41KR493. Red paint is used at both sites. Yellow is seen infrequently at the western Kerr County site, while none is mentioned at the Kendall County site. There were Late Prehistoric artifacts found at the Kendall County site. No Late Prehistoric artifacts are known from the western Kerr County site, to date.

The artifacts recovered from 41KR493 show a Late to Transitional Archaic component to this site (Turner and Hester 1993). The diagnostic artifacts found give a certain time period to this site, but do not limit it to that period. It should not be said that the Late to Transitional Archaic is the period during which the paintings were made. Archaeological testing and excavation must be done before attempting to assign a time period to this site or the paintings.

CONCLUSION

It appears that there are three styles of painting at 41KR493. The use of different colors, line width, choice of patterns and location on the bluff wall are used to separate the styles.

Style 1 is shown in Figures 3, 4 and 5. These are composed of mostly vertical geometric figures arranged in a horizontal pattern. The drawings are wide, vertical red designs, with some yellow seen in several paintings and faded spots. The faded red areas on the bluff wall may be more of Style 1 that faded through the years.

Style 2 is shown in Figure 6. It is a series of black lines with no detectable pattern. The long black line seen in the lower right corner of Figure 2 just below Panel E, also appears to be Style 2. There is a difference in length between these two lines, but the shade of black and the width of the lines are the same.

Style 3 is seen in Panel E (Figure 7). It is a series of red vertical lines on the left side. The right side is

composed of a solid red cigar-shaped design that has two red lines extending from the bottom and two red wing-like drawings. The right side of Figure 7 may have been an attempt to create animal and bird-like drawings. The red paint used in Style 3 is a slightly different shade than that found in Style 1.

The three styles are evident when looking at the drawings on these pages. Reading the descriptions adds to the distinction between the styles. The differences are very prominent when viewed at the site. These paintings are very faded, but the styles still stand out.

The artifacts recovered at 41KR493 indicate a Late to Transitional Archaic time period (Turner and Hester 1993). The diagnostic artifacts found give a definite time frame to this site. It should not be limited to the Late to Transitional Archaic time frame, but should be considered part of the overall chronology. The pictographs will not be placed in this time period unless definitive archaeological evidence is provided. The Kendall County site has a prehistoric component. No prehistoric period has, to date, been indicated at this site. This does not indicate that one does not exist, but that no evidence has been recovered to prove that one does exist. More archaeological work is needed to better determine a chronology of this site and the pictographs.

These pictographs may not be visible much longer due to exposure to the elements and vandalism. In the latter part of August, 1996, a state agency completed a rock art survey and recording at the Hatfield Pictograph Shelter. It is so important to document this site, and others like it, in order to have a record for future generations. Understanding this ancient style of communication is becoming more of a reality every day, as demonstrated in *Shamanism and Rock Art in North America*, edited by Solveig A. Turpin (1994). If even one rock art site goes unrecorded and undocumented, some understanding of a prehistoric culture is being lost forever. This is a disturbing thought.

ACKNOWLEDGMENTS

A special thank you goes to Vicki Hatfield for recording this site with the Texas Archeological Research Laboratory. Thanks go to members of the initial survey team. They are Murray Beadles, Kathleen Cook and the author. Thank you to Bill Armstrong for guiding the team to the pictographs and providing information about the site. Thanks to

Donnie Harmel for his cooperation and the information he provided concerning this site. Margaret Hines is greatly appreciated for her assistance in directing preliminary reports to the appropriate people. Many

thanks to Nola Montgomery for arranging for a survey team to visit this site. And a big thanks goes to my wife, Karyn, for suggestions and proofreadings.

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Now that the hottest summer in years has passed you might consider concentrating on your archaeological projects and get your reports written up for the rest of us to enjoy. Manuscripts will be needed for future issues of *La Tierra* and your editor is counting on you to share your experiences with our readers.

Thank you for your past support. Let's continue to make our journal an outstanding publication of work being done in southern Texas environs.

INCISED PEBBLES FROM BURNET, LLANO AND WILLIAMSON COUNTIES, TEXAS

C. K. Chandler

ABSTRACT

This paper reports and illustrates three incised pebbles from Central Texas. There is one each from Burnet, Llano and Williamson Counties.

DESCRIPTION OF THE ARTIFACTS

The Burnet County pebble is illustrated in Figure 1, A. It is a naturally formed, long and narrow piece of limestone that is probably shaped and smoothed by water action. The flat obverse face is covered from end to end with straight line incisions that form square to rectangular and triangular patterns. One end of the pebble is nearly straight, the other is strongly convex. The convex end and one long edge are very thin and may possibly have functioned as cutting edges.

This specimen is 177 mm long, 23 mm wide and 6 mm thick at the thin convex end. It is 29 mm wide at the opposite rectangular end and has a maximum thickness of 18 mm at 60 mm from the end where there is a protrusion (knot) on the reverse surface. It weighs 96 grams.

The incising on this specimen consists of six parallel, fairly evenly spaced, straight lines nearly full length of the obverse face. These long parallel lines are intersected by 22 parallel straight lines that run from near edge to edge at 45° angles. Another set of near parallel lines run from edge to edge at an opposite angle of 45° to the lengthwise parallel lines. These two sets of 45° lines intersect each other at 90° angles presenting an irregular cross-hatched pattern.

This pebble is from a burned rock midden in Burnet County and is in the Michael Redwine collection.

Figure 1, B is an irregularly shaped flat pebble of relatively soft red hematite from the southern part of Llano County. It has been broken into three pieces that have been reassembled and glued together without disturbing the patterned incised lines. The incising consists of six sets of parallel lines on the obverse face. Three sets of these lines are oriented with the

long axis of the pebble. One set consists of two irregularly parallel lines near the incurving edge of the pebble running from end to end. One set is of three parallel lines running along the center axis drawn from end to end of the pebble. Another group of three lines are positioned to intersect the center group near their end and run about one-third the pebble length near its longer outer edge. The two sets of end-to-end lines are intersected and crossed by three sets of parallel lines of differing lengths. These are in line with the short axis of the pebble in its central area.

The reverse face of this pebble has a few lightly incised lines that are without pattern and appear to be incidental scratchings.

This pebble is 110 mm in length, 51 mm in width and 12 mm thick. It weighs 60 grams.

Figure 1, C, C' is a flat triangular limestone pebble from Williamson County. A profusion of straight line incisions cover both flat faces and one edge.

It is 77 mm in length, 34 mm in width at the wide end and tapers to 8 mm wide at the opposite end. It is 3 mm thick at the wide end, 12 mm thick near the narrow end, and weighs 39 grams.



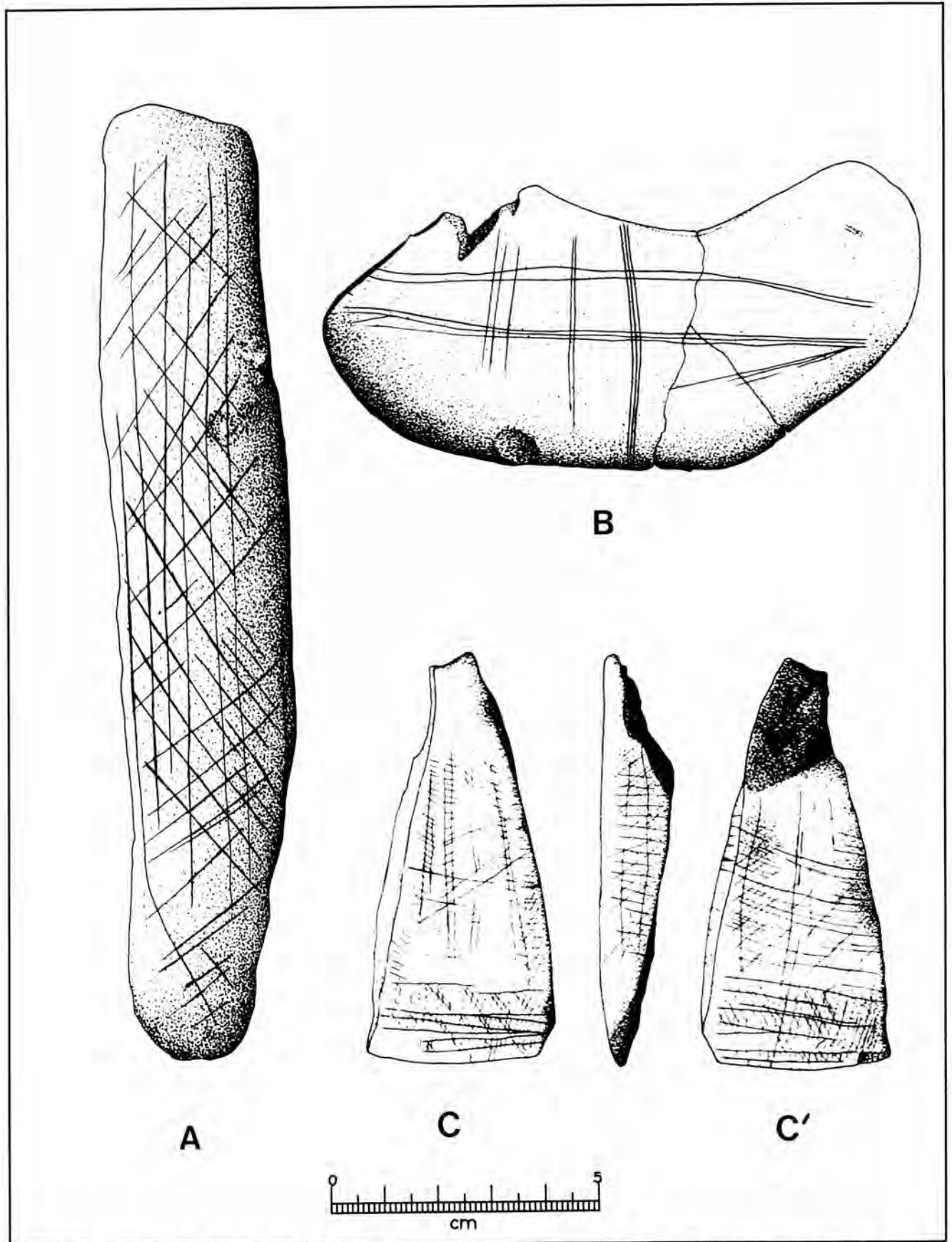


Figure 1. Specimen A, Incised pebble from Burnet County; Specimen B, Incised pebble from Llano County; Specimen C, C', Incised pebble from Williamson County.

DISCUSSION

Most incised and engraved pebbles have their designs on one face only as in Figure 1, A, B. However, an occasional specimen will have designs on two or more surfaces as in Figure 1, C, C'.

Incised and engraved designs occur in a variety of patterns such as straight to curving parallel lines that often intersect. Rarely are these lines identifiable as a specific thing such as an animal, a human or object.

In some cases incised decorations are painted over but rarely follow the pattern of the incised lines (Chandler 1992).

Incised and engraved stones are rarely reported in Texas (Turner and Hester 1993). Most known specimens are from South and Central Texas but they are

also documented from as far west as the Lower Pecos (Chandler 1991).

Incised stones have generally been considered to be of Archaic to Late Prehistoric age but a number have recently been found associated with Clovis points at the Gault Site (41BL323) in Bell County (Hester et al. 1992).

ACKNOWLEDGMENTS

Specimens A and B are in the Michael Redwine collection and Specimen C, C' is in the Todd Chism collection. I extend my sincere appreciation to them for the loan of these artifacts for study and documentation. I also extend my thanks to Richard McReynolds who prepared the illustrations.

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PUBLICATION NOTICE

Southeast Texas Archeology, 1996, by Leland W. Patterson, Houston Archeological Society, Report No. 12.

A synthesis of Southeast Texas archeology is presented for all geographic areas and time periods of this 21-county region. This report contains many data and details that were not possible to include in the limited space of the author's 1995 paper on this subject in *TAS Bulletin* 66:239-264. The price of this report is \$10.00 postpaid. Orders may be sent to the Houston Archeological Society, P.O. Box 6751, Houston, Texas 77265-6751.

THE HOG ISLAND #1 SITE, 41NU286, NUECES COUNTY, TEXAS

Timothy K. Perttula

ABSTRACT

This paper discusses the Hog Island #1 site, a small Rockport phase (ca A.D. 1250/1300-1700) camp on Hog Island in Redfish Bay, near the tidal pass between Corpus Christi Bay and the Gulf of Mexico.

INTRODUCTION

The Hog Island #1 site, in Nueces County, Texas, was found by Mr. J. O. French of Corpus Christi during a summer 1995 fishing trip. During this fishing trip, he observed and collected a limited number of prehistoric Rockport phase pottery sherds along the beach and dunes at the southeast side of Hog Island, a small island in Redfish Bay near the Port Aransas Causeway. Mr. French sent the author a map of the site and the collection of pottery sherds because he wished to have the site recorded with the State of Texas, and also wanted the sherd collection fully documented. No obvious midden deposits or concentrations of mussel shells or fish bones were noted by Mr. French when he found the Hog Island #1 site, which suggests that it is not a large, midden-rich shoreline fishing camp.

ENVIRONMENTAL SETTING AND PRE-HISTORIC ESTUARINE EXPLOITATION

The Hog Island site is a small, narrow island in the shallow estuarine bay system of the central Texas coast. One of many small islands in Redfish Bay, the mainland shoreline is about three kilometers due west of the site. Aransas Bay lies just to the north, with the broad Corpus Christi Bay to the south. San Jose Island and Mustang Island, both barrier islands, and the tidal pass at Aransas Pass, are within five kilometers of Hog Island.

After about 3,000 years ago, with the stabilization of modern sea levels, and the development of the estuarine bay system (Ricklis 1995a:289), rich fish and shellfish resources were to be found in concentrated and predictable amounts in such settings. Of particular importance were fish species such as black

drum and redfish that aggregate in shallow bay areas and tidal passes during the fall and winter spawning seasons (Ricklis 1996). The edible roots of the salt-tolerant cattails were also to be expected in quantity in the fall and winter along shallow bayshore locations and on the lagoonal margins of the barrier islands.

Using simple correlations between environmental variables and dietary characteristics, Ricklis (1995a, 1996) has proposed that the prehistoric Karankawan peoples on the central Texas coast began to heavily exploit these estuarine resources, aggregating during the fall and winter at extensive shoreline fishing camps, creating large and dense midden deposits. The large number of Late Archaic, Terminal Archaic, and Late Prehistoric Rockport phase sites along the lower estuaries and tidal passes clearly documents this development of an estuarine subsistence focus for central Texas coastal peoples (see Cox 1996:Figure 2, e-h). Ricklis terms these fall-winter camps Group 1 sites, and several of these large fall-winter middens are known within 10-15 km of the Hog Island #1 site (see Ricklis 1996:Figure 8). Ricklis (1996:104) further notes that "there are some small Rockport phase sites on bay shores, although the presently available information suggests that they are not very numerous...it must also be acknowledged that the present database may not permit identification of the complete range of site types for the Rockport phase."

By contrast, during the spring season, the Karankawa dispersed as much as 40 km inland along the coastal plain to exploit large game animals such as deer and bison. The spring-summer hunting camps are labeled Group 2 sites. According to Ricklis (1996: 104), a few bayshore Group 2 sites are known where coastal prairies are nearby, as at 41SP103 (Ricklis 1988) on Corpus Christi Bay and 41AS16 (Prewitt and Paine 1988) on Copano Bay.



ARTIFACTS

Nine prehistoric Rockport ware pottery sherds were the only artifacts collected by Mr. French from the Hog Island #1 site. The sherds, heavily eroded and water-worn, are from thin (mean thickness = 4.47 mm \pm 0.72), sandy paste clay-bodied vessels that were generally fired in a poorly controlled oxidizing environment. Several of the sherds have an asphaltum surface treatment, and when temper is present in the paste, the Rockport phase potters generally used sparse (<5 percent of the clay body) and finely crushed bone.

The sherds can be readily sorted into three groups, following Ricklis' (1995b:197-199, 1996:27-34, 177-188) ceramic classification of Rockport phase pottery: Rockport Plain, Rockport Black on Gray II, and Scored. The four Rockport Plain sherds, probably from wide-mouth bowls and jars used for cooking, lack asphaltum surface treatment, contain only sparse to moderate (5-25 percent of the clay body) amounts of bone temper, and were fired in both oxidizing and reducing atmospheres.

The four Rockport Black on Gray II sherds have either sparse bone or no temper at all, along with exterior oxidized vessel surfaces. All four Rockport Black on Gray II sherds have an asphaltum surface-treatment, including interior asphaltum coating, and two of the sherds have poorly preserved vertical asphaltum squiggles on the exterior body wall. While the kind of vessels represented by the small sherds from the Hog Island #1 site cannot be accurately determined, Ricklis (1995b:Figure 17) indicates that most Rockport Black on Gray II vessels were constricted neck ollas, probably used as water containers.

The last of the nine sherds has a sparse bone temper, was fired in a reducing environment, and has a number of scored or striated marks on the exterior surface. These characteristics are consistent with Rockport Plain as defined by Ricklis (1995b:198), but the sherd also has an interior coating of asphaltum, which is not consistent with that type.

The Rockport phase pottery from the Hog Island #1 site indicates that the site was occupied by Karankawan peoples between ca. A.D. 1250/1300-1700 (cf. Ricklis 1995a, 1996). Using temporal trends in various attributes of the Rockport phase pottery from

the Holmes site (41SP120), the occurrence of scored pottery and the frequency of Rockport Black on Gray II sherds in the small sherd sample at Hog Island #1 suggests the site was used towards the latter part of the Rockport phase (cf. Ricklis 1996:187 and Table 14).

DISCUSSION

Is the Hog Island #1 site a seasonally recurrent Rockport phase shoreline fishing camp? The major fishing camps of the Karankawan peoples are known to occur on the mainland shoreline of bays and lagoons and on the landward side of barrier islands (Ricklis 1995a:286), but not on small islands in estuarine bays.

The description of the site by Mr. French, its location in Redfish Bay, and the sparse number of Rockport phase pottery sherds observed and collected at Hog Island #1, strongly suggest that this site is neither a Group 1 major fall-winter fishing camp nor a Group 2 spring-summer hunting camp. Nevertheless, the setting of the site near a tidal pass, and along a shallow bay shore, seems to indicate that the occupation of the Hog Island #1 site is associated with the use of estuarine resources. Perhaps the site represents the remains of a foraging party sent out from one of the Group 1 aggregated fishing camps to exploit a particularly rich patch of aquatic resources (cf. Kelly 1995:120).

Further investigations of the Hog Island #1 site are warranted to establish its place within the broader settlement and subsistence strategies of the prehistoric Karankawan peoples during Rockport phase times. A particularly important part of any future investigations at the site will be to obtain seasonality data from fish otoliths and oyster and *Rangia cuneata* shells, if they are present, to establish when this apparently small camp was occupied: was it during the fall-winter seasons or the spring-summer seasons? Finally, radiocarbon dates would need to be obtained from charcoal or estuarine shells in the archaeological deposits to place in absolute terms the increasingly intensive use of "lower estuaries and tidal passes as major loci of estuarine exploitation" (Cox 1996:39) on the central Texas coast.

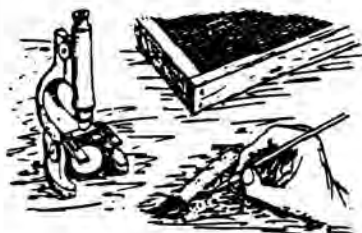
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ARCHAEOLOGICAL SURVEY OF HUPEDO RANCH: A SEARCH FOR ARCHAIC SITES NEAR SPICEWOOD, TRAVIS COUNTY, TEXAS

Jennifer Logan

ABSTRACT

In 1995 the author conducted a survey of Hupedo Ranch, located in southwestern Travis County near Spicewood, Texas. As a result of this survey 10 prehistoric archaeological sites were located and recorded. Three of these sites are multiple-activity sites, four are lithic scatters, and three are stone-tool manufacturing sites. Artifacts recovered include a variety of chipped- and ground-stone tools. Diagnostic tools recovered appear to indicate that earliest occupation and use of the area occurred during the Early Archaic period.

INTRODUCTION

A site survey, more specifically defined using King's (1978) criteria as a non-exclusive special-purpose deployed surface survey, of Hupedo Ranch property, located in Travis County near the Pedernales River, was attempted and carried out where possible in order to locate and record all prehistoric sites. However, because a great deal of the ranch land is covered in thick juniper and oak scrub, it was more feasible in most areas to conduct gang surveys (*ibid.*) Portions of the 124-acre ranch were unable to be surveyed due to conflicts with crew members' schedules; however inferences were made as to the potential of these areas for yielding archaeological remains based on either partial examination of the areas or on what was known from similar areas of the ranch. Survey goals were to locate and record all prehistoric archaeological sites within the boundaries of the ranch and to plot the location of each site on a USGS topographical map.

All recognizable tools were collected from the surface of each site; no subsurface testing was carried out. The cultural materials collected were documented with regard to the particular site from which they were recovered. No further proveniencing of artifacts was attempted due to the fact that almost all of the sites and artifacts were located in areas where heavy erosion has been, and still is, taking place. It has been

decided that the cultural materials found have been displaced due to erosion. These surface collections are nonetheless extremely important in determining the nature of the site. Redman and Watson (1970:279) state that in archaeological work not involving excavation, "Systematic surface collection can ... be used in regional surveys ... to provide comparative data about the chronological placement and functional nature of various sites." Data collected as a result of this survey are expected to provide additional information regarding subsistence, land use, and occupation patterns of this area and its surroundings.

METHODOLOGY

The procedures were documented by color photographs, note-taking, and plotting of sites and features on a topographic map and in conjunction with an aerial photograph of the property. Photographs taken during the survey include pictures of soil exposures, topographic features, and sites. Notes were taken concerning the kinds of soils observed, topographic features, presence or absence of cultural debris, vegetation, evidence of animal activity through the areas surveyed, and the kinds of material found at sites. Compass bearings were taken before deployed survey of each transect began and were followed in these cases as strictly as possible in order to systematically cover the area. The field crew consisted of a minimum of four people, and a maximum of seven. When practicing a deployed method of survey, crew members walked in parallel lines spaced about 10 paces apart. Due to limitations regarding the compatibility of crew members' schedules the whole project area was unable to be covered in its entirety by the survey.

Upon completion of the survey, areas of concentrations of cultural materials plotted on the topographic map were evaluated and given site numbers. Artifacts collected from the sites were washed and appropriately numbered according to the sites from which they were collected. All data obtained during the survey was evaluated and interpreted, by itself and

in relation to the general area in which the ranch property is situated.

DESCRIPTION OF PROJECT AREA

Flora and fauna

The project area is comprised of 124 acres of privately owned land in an upland setting overlooking the Pedernales River in southwestern Travis County (Figure 1). Vegetation is dominated by juniper trees, with parts of the ranch property covered in almost impenetrable juniper and oak scrub. Turk's Head cactus, barrel cactus, persimmon, evergreen sumac, curly mesquite, and agarita are also found in the project area. Mustang grapes and palmettos grow near the Pedernales River. Other types of trees, such as oak pecan, and sycamore are to be found almost exclusively at the riverbanks. Bald cypress once grew along

the river and can still be found growing along the banks of Fall Creek, which runs through the general area. Steep bluffs rise up from the floodplains on either side of the Pedernales River, forming numerous small rockshelters and overhangs. White bass spawn in late winter/early spring in the part of the river which is included in the project area. Catfish and river mussel are also present. One major gully found on Hupedo Ranch property, and two located just outside the present property lines, allow for relatively easy access to the river, and are the sites of natural seep springs that hold water even during times of drought.

Wild turkey are abundant in the project area. Bobwhite quail, roadrunner, cardinals, mourning doves, blue jays, red-wing blackbirds, buntings, hummingbirds, turkey vultures, black vultures, and blue heron are also common. Less common, but periodically seen, are golden eagles and red-tailed hawks.

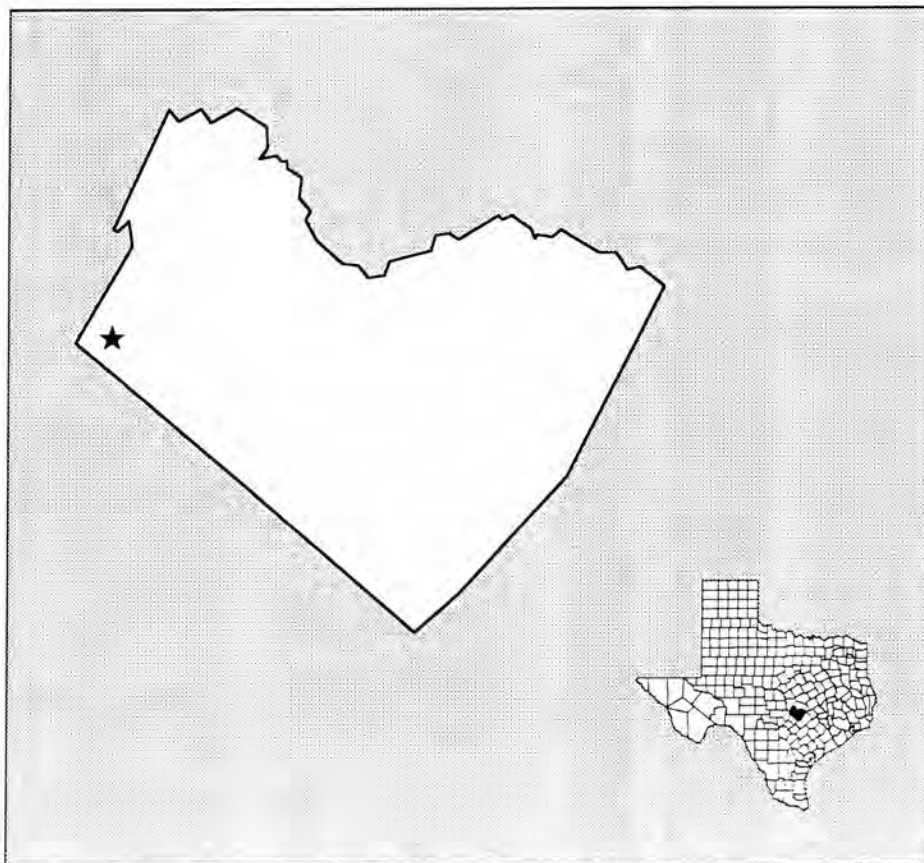


Figure 1. Location of project area, Travis County (darkened in Texas map).

Jackrabbits, armadillos, raccoons, ringtails, rock squirrels, white-tailed deer, and coyotes are commonly found on Hupedo Ranch. Bobcats appear to be rare, having been seen only once by the current property owners. Rattlesnakes, water moccasins, rat snakes, and copperheads are also present in the project area.

Traces on animal activity were seen throughout most of the land surveyed. Most common traces were cattle, dog, and horse footprints, trackways, tufts of fur, and skeletal remains.

Soils

The Soil Survey of Travis County (Werchan and Ramsey 1974) lists four types of soils which dominate the project area. These soils are the Volente complex, one to eight percent slopes (VoD) and one to eight percent, eroded (VoD2) of the Volente Series; Brackett soils, rolling (B1D); and Tarrant soils, rolling (TaD).

Soils from the C horizon of the soil profile characterizing the Volente complex (VoD2), one to eight percent slopes, eroded, are located in the north and northeast quadrants of the project area. These are characterized in the most severely eroded areas by a reddish-yellow clay loam containing pebble-sized nodules of calcium carbonate and limestone. Depth of the C horizon in this profile is typically 46-54 inches below the surface, but in this area is found either very close to the surface or exposed in deep gullies and steep slopes.

Soils of the Volente complex, one to eight percent slopes (VoD) are found near the intersection of the north and east property fences, along the eastern property line, and cutting roughly across the middle of the project area. The C horizon of the VoD soils, exposed on slopes, is the most visible; however, in the areas of dense juniper scrub and fairly level land the dark grayish brown soils, most probably of the B horizon (36-46 inches), can be seen.

Tarrant soils, rolling (TaD) are located along the south border of the project area, following the edge of the steep bluffs which rise up from the floodplains of the Pedernales River. From the edge of the bluffs they extend 900 feet into the project area at their widest points. These soils are a very dark grayish-brown stony clay covered with large limestone rocks and outcrops.

Extending from the northwest corner halfway down the western property line and into the center of

the project area are the Brackett soils, rolling (B1D). These gravelly soils are found on gentle, but noticeable slopes, and are a pale yellowish-white in color.

It is important to note that the "association of certain soil types with archaeological sites" can be "a critical factor in survey strategy" (Dial 1993:6). After completion of the survey of Hupedo Ranch and evaluation of the data collected it was clear that sites from which the most diverse range of archaeological remains were collected were those found on the Volente soils (VoD and VoD2). Artifacts found in these areas tentatively date these sites to the Early, Middle, and possibly transitional Archaic periods, generally correlating with Dial's (ibid.) finds from the upland sites at Shield Ranch.

Topography

Topography of the project area largely consists of gentle slopes with eroded sides. The elevation of the highest point, located where the north and west property fences intersect near the base of a large eroded hill outside the property lines, is approximately 900 feet. Elevation was calculated from contour lines and contour intervals on the Pace Bend Quadrant 7.5 minute USGS topographical map. From this point the land slopes steadily downward in a south and east direction. Another significant high point is located somewhat to the west of the center of the project area, roughly halfway in between the center of the property and the western fence line. Limestone shelves are exposed through the soil on this point. The lowest point of the project area, approximately 810 feet, is located northeast of the center of the property as the bottom of an eroded gully in the VoD2 soils. The southwest area of the property can be described as a stony upland expanse as it nears the edges of two large gullies; one, located within the project area, and the other just outside the western fence line. Slightly to the east of the northeast corner of the property is the third major gully, found immediately adjacent to the project area. All three gullies provide access to the Pedernales River today, and presumably prehistorically.

PROJECT RESULTS

Ten prehistoric archaeological sites, mostly from the Early Archaic (ca. 6000 B.C. - 2500 B.C.), Middle Archaic (ca. 2500 B.C. - 1000 B.C.), and

possibly Transitional Archaic (300 B.C. - 700 A.D.), were located in the project area and given trinomial site numbers assigned by the Texas Archeological Research Laboratory (TARL), of the University of Texas at Austin. The presence of recognizable stone tools and associated debitage were the criteria for defining prehistoric sites in the project area. Of the 10 sites identified, three appear to be multiple-activity sites (41TV1748, 41TV1752, and 41TV1754), four are small lithic scatters (41TV1745, 41TV1746, 41TV1749, and 41TV1750), and three appear to be stone tool manufacture sites (41TV1747, 41TV1751, and 41TV1753). Sites were fairly evenly distributed throughout the project area, with the exception of the edges of the bluffs, where no sites were located during the survey. However, an isolated biface and a possible mortar depression in a bedded limestone slab found near the edges of the large gully in the southwest corner of the project area may indicate another site.

Raw materials used in stone tool manufacture were procured from the Pedernales River. Possible tested cobbles and large, alternately beveled biface were recovered from the Pedernales River and may indicate that initial reduction of raw materials for stone tool manufacture was being performed at the riverbanks. Due to the high water levels in the river it was not possible to carry out further investigations in the area where the quarry blank was originally found.

THE SITES

41TV1745

Site 41TV1745 is a small, isolated lithic scatter consisting of a small biface and thinly scattered debitage located near the southwest corner of the project area. The site is surrounded by clumps of juniper and thick grasses, located on fairly level land corresponding with the VoD soils. Elevation is approximately 810 feet. No diagnostic material was observed at this site so tentative dates can not be applied.

41TV1746

Site 41TV1746, a lithic scatter situated on fairly level land at the foot of a slight rise, occurs on the exposed C horizon of the VoD soils. Juniper and grasses cover the area fairly evenly. Approximate elevation of this area is 820 feet. Artifacts found at

this site include a thin scatter of debitage in association with the distal tip of a finely thinned projectile point and a fragment of freshwater mussel shell. No diagnostic tools were collected from this site and therefore no reliable estimates of its age can be made.

41TV1747

Site 41TV1747 represents a stone tool manufacturing site located at an elevation of approximately 840 feet at the conjunction of the BID and VoD soils. The site appears to begin at the foot of a slight rise marked by a severely eroding slope and bedded limestone shelf. The area is thickly covered with juniper scrub and sparse grass and the gravelly soil is exposed through weathering. A cluster of fist-sized stones, possibly representing a hearth, are located at the periphery of the site near the base of the slope. This site is characterized by a fairly even distribution of debitage, bifacial tools, and expended cores. Seven bifacial tools were collected, three of which are projectile points or late stage projectile point preforms having split-stem characteristics which tentatively date the site to the Early Archaic.

41TV1748

Site 41TAV1748 is located at approximately 810 feet elevation on the C horizon of the VoD2 soil profile. This area consists of a large, basin-shaped depression surrounded by steep, deeply gullied slopes, from which most of the artifacts were collected. The site appears to be a multiple-activity area, with a possible burned rock feature. Four manos, a metate fragment, a cluster of freshwater mussel shells, 12 bifacial tools, and two unifacial tools were collected from the area. A great deal of debitage was noted but not collected. A Nolan point recovered from the site dates the earliest use of this area to the Early Archaic, ca. 4000 B.C. It should be noted that Johnson and Goods (1994), characterize the Nola point as a Middle Archaic type.

41TV1749

Site 41TV1749 is located at an elevation of approximately 840 feet in thick juniper and oak scrub on the VoD soils adjacent to the north property fence. A small cluster of tested cobbles and thinly scattered debitage was found on exposed, slightly sloping

ground. This site is at the periphery of a large area, also containing thinly scattered debitage and an observed core-chopper, which extends beyond the project area. No collections were made at this site, and no diagnostic materials were located. Age of the site remains undetermined.

41TV1750

Site 41TV1750 is a lithic scatter located on a narrow ridge, elevation approximately 880 feet, near the intersection of the north and west property fences on the BID soils. Vegetation is sparse on this ridge and consists of juniper scrub and sparse grass. An exposed limestone shelf forms another small ridge about eight meters (26 feet) from the edge of the site and serves as its boundary. A small biface was collected, and no diagnostic materials were observed. The site is of undetermined age.

41TV1751

Site 41TV1751 is a stone tool manufacturing site or multiple-activity area on the BID soils at the top of a slope, between 880 and 900 feet elevation, adjacent to the west property fence. This area is almost devoid of vegetation within the site but is surrounded by thick juniper scrub. Much of the debitage shows signs of thermal alteration in the form of reddish discoloration and potlid fractures. Three bifacial tools, one of which is a Clear Fork tool with small spots of heavy use or hafting polish, were collected from the site. Various scraper- and chopper-like tools were also observed. The presence of the Clear Fork tool allows earliest dating of the site to the Early Archaic.

41TV1752

Site 41TV1752 is located in the northeast quadrant of the project area in one of the most severely eroded areas, typical of the VoD2 soils on which it is situated. Approximate elevation of the site is 800 feet. Most of the cultural materials observed and collected during the survey of this area were found along a fairly deep, narrow drainage, and appear to indicate that the site was utilized as a multiple-activity area. Ten bifacial tools, nine of which are projectile points, and four ground stone fragments were collected. Little debitage was observed. Two of the projectile points were identified as early split-stem types of the Gower

or Uvalde range, dating earliest use of this site to the Early Archaic, ca. 6000 B.C. (Dial 1993; Turner and Hester 1993).

41TV1753

Site 41TV1753 is a stone tool manufacturing area, located on flat to gently rising land in the center of the project area at the conjunction of the BID and VoD soils. Elevation is between 820 and 840 feet. Sparse grass and stands of thick juniper scrub are interspersed throughout the large areas of exposed and weathered soil. Expended cores, tested cobbles, debitage, and broken bifacial and unifacial tools characterize the site. One chopper-like tool with extensive wear on the edges shows heavy battering on the cortex-covered end. This was most likely an expended tool utilized as a hammerstone after it was discarded. Much of the debitage showed signs of thermal alteration in their reddish discoloration, potlid fractures, and fire-checking. Materials collected from the site include four uniface and four bifaces. Although no diagnostic material was observed, and thus the site can not be dated, it is probable that the site is linked to the Archaic period.

41TV1754

Site 41TV1754 is located on level land on the VoD and VoD2 soils at an elevation of nearly 820 feet. Sparse grass and juniper can be found amidst large areas of weathered ground. The site appears to be a multiple-activity area where stone tool manufacturing, plant processing, and possibly wood, bone, and hide working were taking place. At least one burned rock feature appears to be present as well. Artifacts collected from the site include a prismatic blade, 17 bifaces, four uniface, three manos, one of which is a large two-handed mano (Figure 2), and 14 metate fragments. Although it has been established that in Central Texas, blade tools were made only during the Paleo-Indian period in Clovis times and during the Toyah phase of late prehistory (Turner and Hester 1993), the prismatic blade recovered from this site can not be used to date the site with any reliability. No projectile points of Clovis or Toyah age have been located at this site, and due to the lack of stratified deposits it is impossible to determine the age of most of the unifacial and bifacial tools collected here. Diagnostic artifacts include Clear Fork

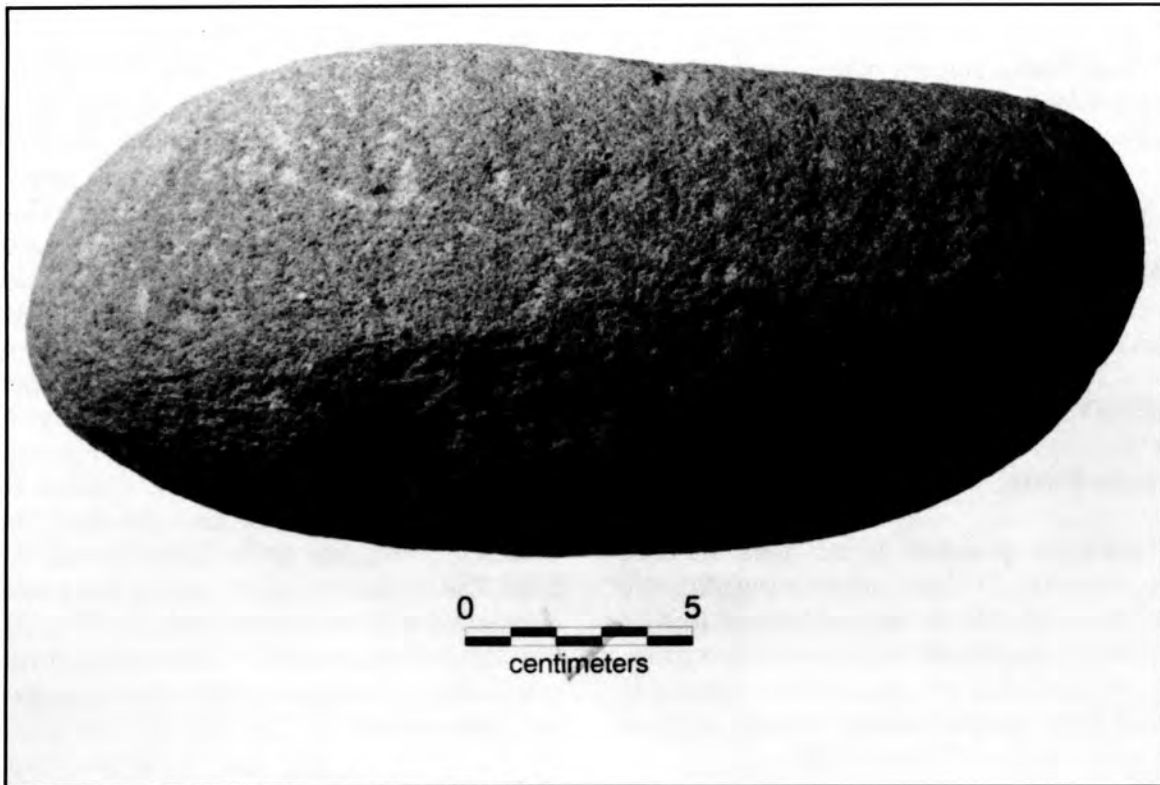


Figure 2. Two-handed mano from 41TV1754.

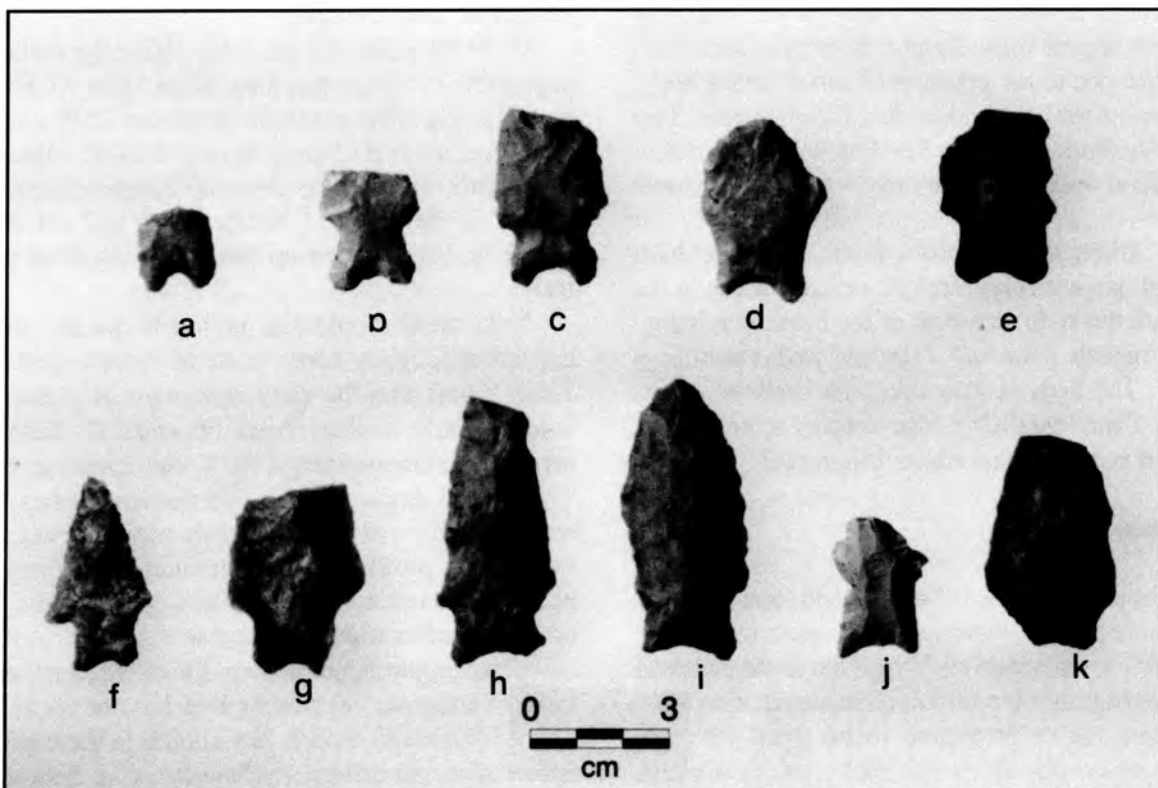


Figure 3. Split-stem projectile points: a, possibly Pedernales; b-g, k, Gower or Uvalde; h, i, j, unidentifiable.

tools and projectile point stems having early-split stem characteristics, probably of the Gower or Uvalde forms. Earliest use of the site appears to have occurred during the Early Archaic.

ARTIFACTS

Nearly 100 chipped- and ground-stone artifacts were collected from the surface during survey of the project area.

CHIPPED STONE: BIFACES

Projectile Points

Twenty-six projectile points were collected during the survey. Of these, seven are complete, five are distal tips, and 14 are proximal ends. All of the projectile points collected are dart points; no arrow-points were located in the portions of the project area surveyed. Projectile point typology is based on Hester (1980) and Turner and Hester (1993).

Distal Tips

None of the distal tips collected are diagnostic. They range in size from 3.3 cm to 4.1 cm long. Four of them appear to be fragments of projectile point preforms due to the presence of cortex on the body, thickness of the body and crude flaking patterns. Two of the specimens display beveling on at least one of the lateral edges, and only one has serrated lateral edges.

A triangular projectile point with one barb present has been classified as a distal tip due to the fact that the stem and most of the base are missing. The projectile point is 5.7 cm long and is non-diagnostic. The body is very thin with shallow, unpatterned flake scars. One edge appears to be slightly beveled and the lateral edges feel ground.

Proximal Ends

The proximal ends with base and stem intact, or stem only present, represent what seems to be a fair amount of typological variability. Due to the nature of the finds (i.e., they are surface collections), most were too reworked or broken-up to be typed with any degree of confidence or specificity (M. B. Collins, Susan W. Dial, Thomas R. Hester, personal commun-

ications 1995).

The most common proximal ends recovered during the survey were those displaying split-stem characteristics, ground stems, and notched corners forming shoulders. Eleven of these were recovered (Figure 3), and appear to fall within the Gower, Hoxie, and Uvalde range of split-stem projectile points typical of the Early Archaic period in Central Texas, as identified by Turner and Hester (1993).

The remaining six proximal ends appear to represent a great deal of typological diversity. Barbed points are represented in the collection by three specimens, (one of which is a complete projectile point identified as an Early Archaic Uvalde). Contracting stem projectile points are represented by one specimen, which may be an Early Archaic Wells point. One expanding stem projectile point base is categorized as a proximal end and can not be otherwise identified typologically. The remaining proximal ends are heavily damaged and their characteristics can not be determined.

Complete Specimens

Seven complete projectile points were recovered. These appear to represent the Early to Middle Archaic periods of Central Texas.

A Nolan point, 6.6 cm long, places the earliest occupation of the project area in the Early Archaic. Nolan points were produced for about 1500 years, from about 4000 B.C. until about 2500 B.C. (Turner and Hester 1993). The alternate beveling characteristic of the stems of Nolan points has, on this specimen, been carried up the lateral edges of the body.

Two weak-shouldered projectile points with expanding, slightly concave stems were collected. These points may be early split-stem or shallow-notched Early Archaic types (Thomas R. Hester, personal communication 1995), but resemble the Transitional Archaic Ensor and Fairland points as well. One, 6.1 cm long, is nearly plano-convex in longitudinal profile, has convex lateral edges and a possibly ground notch. The other, 5.8 cm long, is parallel-sided to slightly triangular.

Three projectile points were found which appear to be of a typological group which has not yet been defined (Figure 4). Points very similar to these have appeared in the earliest Archaic levels at both the Wilson-Leonard site 41WM235 (Susan W. Dial,

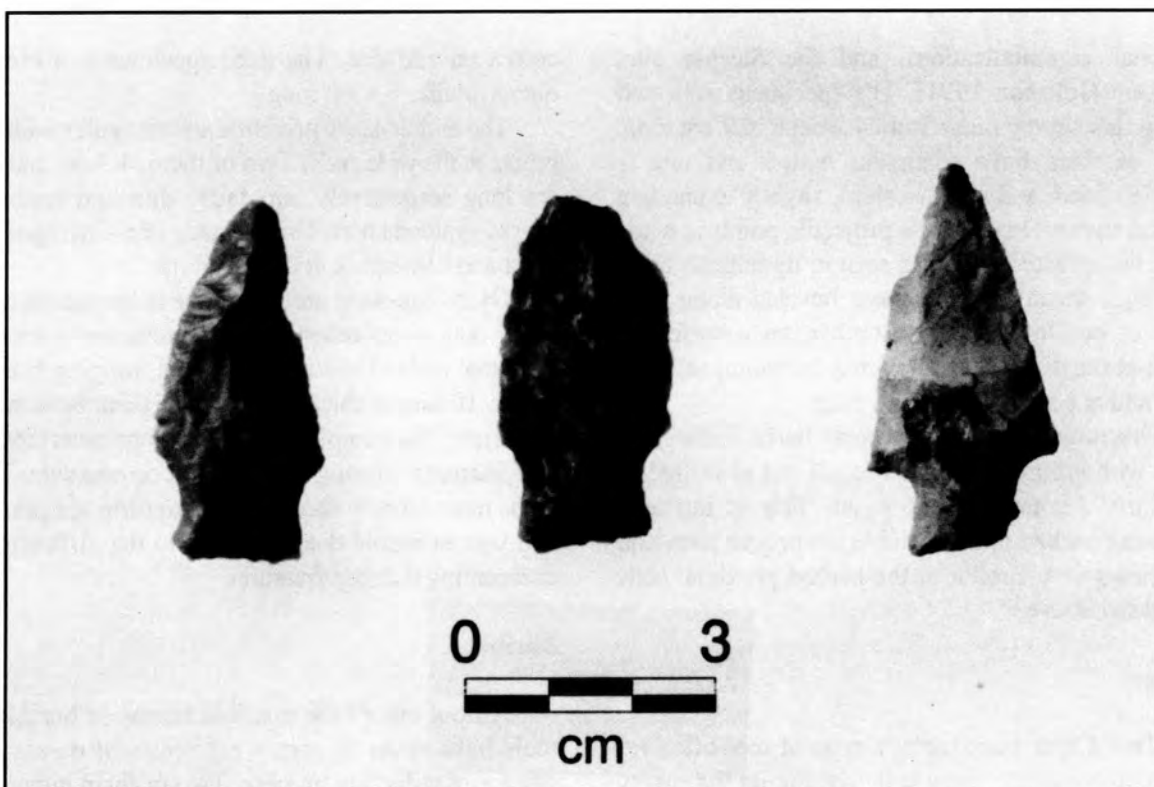


Figure 4. Unidentified Early Archaic projectile points.

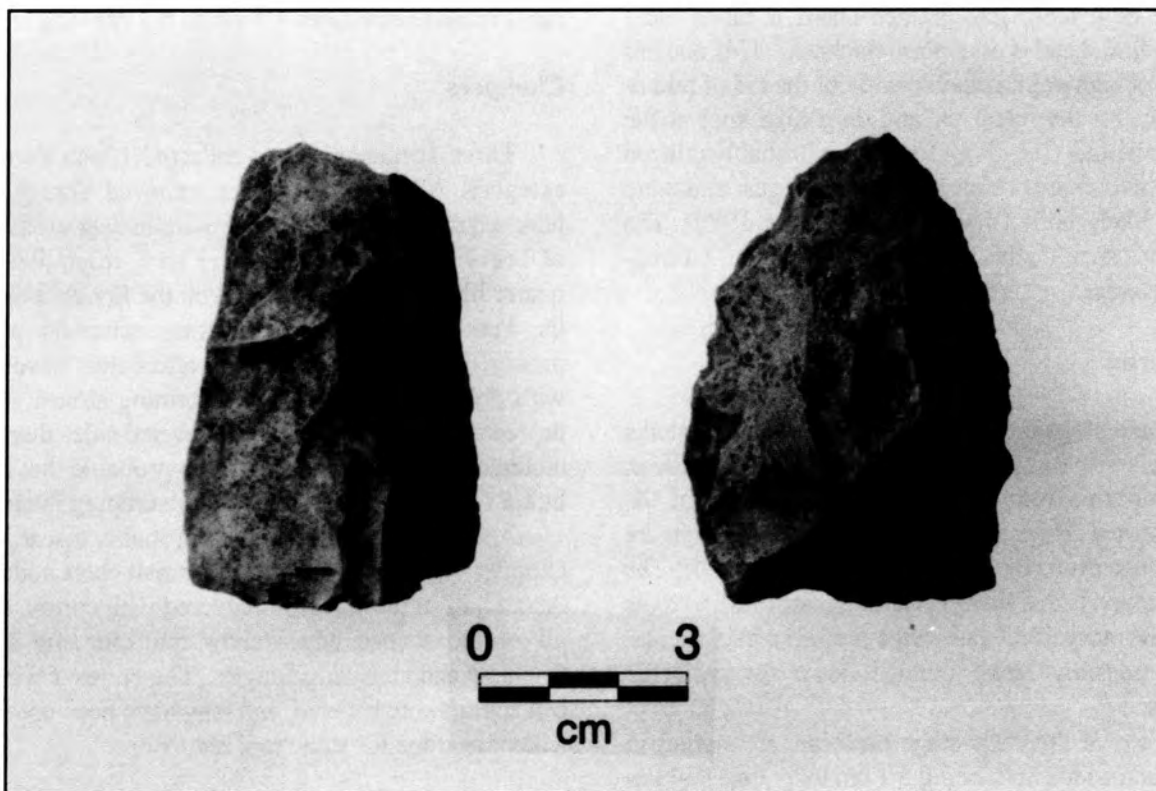


Figure 5. Clear Fork tools. Specimen on left shows spots of heavy polish.

personal communication), and the Sleeper site, 41BC65 (Johnson 1991). The specimens collected during this survey range from 4.2 cm to 4.7 cm long. Two of them have triangular bodies and one is parallel-sided, and all have short, slightly expanding ground stems. One of these projectile points is made from heat-treated chert (as seen in its pinkish color and high sheen) and has been beveled along both sides of one lateral edge. Another has a burin-like break at the distal tip, which may be an impact fracture, and is beveled along this edge.

One projectile point with small barbs and a split-stem with ground edges was found and identified as an Early Archaic Uvalde point. This is the only complete barbed point found in the project area, and it appears very similar to the barbed proximal ends discussed above.

Gouges

Two Clear Fork tools, a type of tool often referred to as a gouge, were collected during the survey (Figure 5). These are complete specimens, 6.5 and 6.9 cm long. The longer of the two is crudely flaked from a coarse-grained chert, is triangular, and its cross-section is typically plano-convex. The shorter one, made of a more fine-grained chert, is much more finely flaked and is of uniform thickness. This one has spots of high polish, visible without the aid of microscopes, on the distal tip and on a high spot at the proximal end. Clear Fork tools were probably utilized more as woodworking tools than gouges, and were most likely hafted for that use (Hester 1980). The polished areas on this tool probably represent hafting- or use-wear.

Preforms

Late stage preforms with projectile point stems were classified as projectile points. Aside from these, 14 preforms were collected from sites within the project area. Three are early-stage preforms, eight are late-stage preforms, and three fall in the middle. The assumption is that these bifaces are not finished tools and that many of the late-stage preforms in particular were possibly being thinned down for projectile points.

Two of the early-stage preforms are similar in form and width, both being 5.1 cm long. One still has

cortex on one side. The third specimen is a broken quarry blank, 6.8 cm long.

The middle-stage preforms are triangular with the breaks at the wide ends. Two of them, 4.3 cm and 6.6 cm long respectively, are fairly thin and made of coarse-grained chert. One is made of a finer-grained chert and has cortex at the distal tip.

Of the late-stage preforms, one is broken on both ends, one is unbroken, and the remaining six are proximal ends. They are fairly thin, ranging from 5 mm to 10 mm in thickness. Two of them have spots of cortex. The complete preform is characterized by step fractures forming a thick stack on one side. This is the most crudely flaked of the preform specimens, and was probably discarded due to the difficulty in overcoming the step fractures.

Burins

All but one of the possible burins or burin-like tools have spots of cortex not removed during the stone tool reduction process. Two of them appear to have had burin spalls removed intentionally, and two have burin-like bits without the typical burin scar, possibly indicating that the tools were broken accidentally, thus creating a usable burin tool. The specimens range in size from 4.5 cm to 5.3 cm long.

Choppers

Three specimens were collected which fit this category. All have cortex not removed during the lithic reduction process, and all but one bear evidence of heavy use. One is a massive tool, resembling a quarry blank, which was found on the floodplains of the Pedernales River, where raw materials were procured. The lateral edges are alternately beveled, with one of the beveled edges forming almost a 90 degree angle. The edges on the beveled sides display multiple tiny step fractures, and it is probable that this biface was utilized in a chopping or scraping manner.

Another heavily utilized, and probably discarded, chopper was found made from a small chert nodule. About half of the surface is covered with cortex, and all of the shaped edges show multiple tiny step fractures and steep edge angles. The cortex-covered end appears very battered, and may have been used as a hammerstone for stone tool reduction.

Miscellaneous Bifaces

Ten bifaces were collected which do not fit into specific categories. There are seven complete specimens, fairly small and ranging in size from 4.2 cm to 6.6 cm long. Both oval and triangular shapes are represented. One interesting specimen, 6.3 cm long, is triangular with what appears to be a corner tang. The lateral edges on this thick, crudely flaked biface are steeply alternately beveled. It does not appear to have been used.

Three of the specimens are broken. One of these is rounded on the unbroken end and is plano-convex in cross section. It appears to be broken, but it is possible that the tool was shaped this way intentionally in order to be hafted. Two others are broken at both ends, but are both thick and narrow. One of these is distinctly triangular in cross section. A possible function for these two specimens can not be determined.

CHIPPED STONE: UNIFACES

Ten unifacially flaked specimens were found. Four of them appear to be side and/or end scrapers, ranging in size from 5.1 cm to 7.5 cm long. Two of them appear to be simple flake tools, not altered by further stone tool preparation. These two may in fact have never been used as tools. Another is a roughly shaped unifacial tool with a rounded end that appears to have been broken during manufacture and then slightly reworked. One broken, triangular uniface, possibly intended for use as a knife, was collected. A broken uniface was found with a constricted base forming what appears to be a kind of handle, and its possible use can not be determined. The last uniface fragment consists of a small piece with a rounded end and two ridges, reminiscent of a prismatic blade, although it is by no means certain as to what this tool looked like and how it was used in its finished form.

GROUND STONE

Manos and metates were found at only three sites in the project area: sites 41TV1748, 41TV1752, and 41TV1754. No complete metates were found and only four of the seven manos collected were complete specimens. Identification of the raw materials from which the manos and metates were made indicates that they are non-local materials.

Manos

Seven manos were collected; four from site 41TV1748 and three from site 41TV1754. These range in size from 5 cm to 10 cm in diameter, with the exception of a large, two-handed mano, measuring 11 cm from end to end. Four are complete specimens. The manos were shaped from materials varying from fine- and coarse-grained sandstones, dolomite, and limestone (Gene Mear, personal communication 1995). These materials were most likely brought in from the southernmost peripheries of the Central Mineral Region near Llano, Texas.

Metates

Eighteen metate fragments were collected from sites 41TV1748, 41TV1752, and 41TV1754. Eleven fragments coming from what is most likely one broken grinding slab are made of metamorphic schist, and the remaining seven fragments (three of which belong to one grinding slab) are made of sandstone (Gene Mear, personal communication 1995). Grinding facets are present on many of the fragments, and all exhibit some degree of wear.

SHELL

Mussel shell was found in only three sites. These sites are 41TV1746, 41TV1748, and 41TV1754. In site 41TV1754, the shell was collected from a small, dense cluster on the surface. In contrast, the shell was thinly scattered over a large area in site 41TV1754. Site 41TV1746 contained only one small fragment of freshwater mussel shell which was very bright iridescent pink, while the shell in the other two sites was a dull white. The species of the mussel shell collected from all three sites was undetermined as of the time of writing.

MISCELLANEOUS ARTIFACTS

A prismatic blade was found in site 41TV1754. This is the only artifact of its kind found during survey of the project area. The blade is about 10.9 cm long and is narrower on one end. The widest end is covered in cortex. The blade is curved, has two medial ridges, and shows no evidence of reworking. Blade technology is seen in Texas prehistory during two time periods only: with the Paleo-Indian Clovis

culture, ca. 11200 B.P., and in the Toyah Phase of Central Texas, ca. 700 A.D. to Historic times (M. B. Collins, personal communication 1995; Turner and Hester 1993). Nothing collected during the survey of the project area is diagnostic of either the Clovis period or the Toyah Phase, and thus this blade can not be temporally identified with any more certainty.

DISCUSSION AND INTERPRETATION

After a survey was carried out at Hupedo Ranch, situated in an upland setting near Spicewood, Texas, ten prehistoric sites were located and recorded. The 124-acre project area was not fully surveyed, and it is very likely that more sites will be discovered with future work. The sites are fairly equally distributed throughout the project area and were located in areas of heavy erosion and weathering. Stratified sites are most likely non-existent in the project area, due to the nature of upland settings. The site collections were made from surface finds only and represent diversity in the use of the land during the Archaic period of Central Texas.

Of the ten sites located, most appear to date to the Early Archaic period, beginning about 6000 B.C. and lasting for about 3500 years. Due to the difficulty in typologically identifying some of the projectile points, it is possible that prehistoric activity in the project area carried on through the Middle Archaic (ca. 2500 B.C. - 1000 B.C.) and perhaps during the Transitional Archaic as well (ca. 300 B.C. - 700 A.D.). A prismatic blade found at one of the sites represents occupation of the area by people of either the Clovis culture (ca. 9200 B.C.) or utilization of the project area during the Toyah Phase (ca. A.D. 700 - A.D. 1600). Since no other evidence has been found to document either of these time periods, no further inferences can be made using the blade as supporting evidence.

Four of the sites discovered are lithic scatters, and most likely do not date before the Early Archaic. Stone tool manufacturing areas are represented by three of the sites in the project area, and diagnostic evidence from one of these sites indicates that earliest use of the location as such occurred during the Early Archaic. It can be said with certainty that three of the sites are multiple-activity areas involving plant processing, woodworking, stone tool manufacture, and most likely occupation. Diagnostic evidence of these multiple-activity sites places earliest use of them

during the Early Archaic. One site characterized by a great deal of debitage, a crude biface, and a Clear Fork tool with use polish may be a multiple-activity area or a stone tool manufacturing site. More investigations need to be carried out here in order to further understand the nature of the site.

The project area directly overlooks the Pedernales River. Although no investigations were carried out along the river, it is likely that sites could be found on the floodplains and riverbanks. Site maps of the area located at TARL show dense clusters of sites at many places along the Pedernales River. A utilized stone tool and possible tested cobble collected from one of the property owners long before the project took place, when the river was at a low point, gives evidence that at least limited activities were taking place in the immediate proximity of the river during prehistoric times.

The majority of surveys of upland areas in Central Texas yield sites largely consisting of lithic scatters. This is seen particularly well in Taylor's (1987) survey of the CPS Butler lignite prospect in Bastrop and Lee Counties. It appears that archaeological surveys in Central Texas focus primarily on river basins and drainages, thus biasing however slightly the nature of the known archaeological record for this area. Not enough surveys of upland sites are conducted to give a good set of comparable data.

If the diversity of the types of sites located on Hupedo Ranch property is unusual, then perhaps the physical features of the ranch may explain why. The project area is marked on three sides by large gullies, which provide very easy access to the river and thus to the variety of natural resources located there. Often, upland sites were utilized as vantage points for hunting, and many were chosen because raw materials for stone tool manufacture could be found eroding from hilltops (Labadie 1987). Perhaps the combination of these two characteristics at Hupedo Ranch was a major factor in drawing prehistoric groups here for thousands of years.

The survey of the project area should be completed in order to obtain complete information on the extent of occupation and use of the area by prehistoric groups. Better equipment would allow for more accurate plotting of the prehistoric archaeological sites on a topographic map, and accurate measurements of the sites should also be taken. If more experienced personnel were involved with the surveying process it is likely that additional archaeo-

logical evidence would be recognized, providing a more detailed context which would increase the information able to be obtained from the sites.

SUMMARY

Preliminary archaeological survey and surface collections of Hupedo Ranch property led to the location of ten prehistoric sites, the majority of which date to the Early Archaic. The Middle and Transitional Archaic periods may be represented by certain projectile points which have proven difficult to type with certainty. The sites represent diverse activities characteristic of a prehistoric lifestyle, and include lithic scatters, stone tool manufacturing sites, and multiple-activity areas in which plant processing, woodworking, stone tool manufacturing, and probably

occupation took place.

Cultural materials recovered include numerous ground stone tools; chipped stone bifaces and unifaces, many of which are temporally diagnostic; and remains of freshwater mussel shells, indicating an aspect of the diet of the prehistoric groups that utilized the area.

At the time of writing, about two-thirds to one-half of the project area remained to be surveyed. It is hoped that, once surveying has been completed, a fairly detailed and more comprehensive picture of the prehistoric activities that took place in this area will emerge. The findings provided by survey of this upland area will contribute to the understanding of prehistoric utilization of such settings in Central Texas.

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AUTHORS—page 2.

DON KUMPE is a lifelong native of the Lower Rio Grande Valley. He and his wife, Mary, own and operate a jewelry store on South Padre Island. The store's specialty is jewelry that is designed and finished "while-u-wait." Don is a member of STAA. As a teenager he began collecting artifacts while on camping trips in Starr County. This led to his 30 years of continuous interest in the archaeology of the Lower Rio Grande River. His collaboration with C. K. Chandler on several articles in *La Tierra* has led to some very interesting documentation of artifacts.

JENNIFER LOGAN has had a lifelong interest in archaeology. She conducted the survey of Hupedo Ranch while taking Dr. Thomas R. Hester's "Lithic Analysis" class as an undergraduate at the University of Texas at Austin, from which she received her Bachelor of Arts degree in December 1995. She is a member of the Travis County Archeological Society and the Texas Archeological Society.

RICHARD MCREYNOLDS, *La Tierra's* fine illustrator, began his interest in Indian artifacts at an early age. His great-grandfather was an artifact collector in Massachusetts (some previous biographical notes were in error). His family moved from Massachusetts to a farm in Arkansas, where he was born. His interest began when following his mother across the fields hunting artifacts. When he was five they moved to south Texas. Richard has done archaeological work in the Pecos River area and south Texas in general. He has been in Belize in 1990, '91 and '93 for the purpose of illustrating the artifacts. However, he still favors the Lower Pecos area to fulfill his interests. Richard is a Civil Service employee at Kelly Air Force Base. He, his wife Carolyn, and their two grown daughters reside in San Antonio.

BRYANT SANER, JR. grew up in the Kerr County area and presently lives in Kerrville. He developed an interest in archaeology at an early age, first hunting "Indian relics" when he was six or seven years old. In 1968 he was a charter member of the Hill Country Archeological Society, serving as publicity secretary. Bryant is presently a member of STAA and TAS. We are glad he is staying with *La Tierra* as a contributor.

SOLVEIG A. TURPIN received her doctoral degree from the University of Texas in 1982. She is currently the Associate Director of the Texas Archeological Research Laboratory at that institution. Her major research interests are hunter-gatherer adaptation to the arid lands of southern Texas and northern Mexico and the remarkable rock art characteristic of that region. Other papers on the historic period pictographs have been published in *Archaeology* magazine, *Plains Anthropologist*, the Smithsonian Institution publication *Columbian Consequences*, and *La Tierra* (1986).

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INFORMATION FOR CONTRIBUTORS

La Tierra publishes original papers and selected reprints of articles involving the historic and prehistoric archaeology of southern Texas and adjacent regions. Original manuscripts are preferred. Articles involving archaeological techniques, methods, and theories are also considered.

The main objective of this quarterly journal is to provide a way for STAA members and others interested in the archaeology of southern Texas to share the information they have with others. We encourage your full participation through submission of your information for publication; we are particularly interested in receiving manuscripts from those in the less well-known counties of our region, to document even surface finds and old collections. Only through such total member participation can we, as a group, build up a comprehensive picture of the archaeology of our area!

Articles may be submitted in any form, although double-spaced typed copy is naturally preferred. However, we will review and work with material in any form to encourage those not comfortable with typewritten or other formal methods; **WE ARE MORE CONCERNED THAT YOU SUBMIT YOUR IDEAS AND DOCUMENT YOUR MATERIALS THAN WE ARE WITH THE FORM OF MATERIALS WITH WHICH WE HAVE TO WORK.** If you can supply a 5 1/4" or 3 1/2" disk, IBM or compatible, **in ASCII form** (if not in Word Perfect), it will be very helpful.

We are now incorporating a small Texas map with the county represented down in the lower right-hand corner of Page 1. This is not "Figure 1" and it may be all that you want in your paper. However, if you are being more precise as to your area of Texas, please submit a map showing the general region with rivers, streams, etc. This would be Figure 1. We are trying not to be too precise with locations of sites—unfortunately there are those who take advantage of this information to locate and ravage archaeological sites. Those sites already in the published material are sometimes shown again, however. Also, you **MUST** have the landowner's permission before entering his property. This small consideration can avoid misunderstanding and ill feeling toward archaeological research.

Other figures can be line drawings or photographs; line drawings are preferred if they are good quality—every photograph used costs an extra \$50-\$60 for a metal plate and set-up charges. If you need assistance with illustrations, please let us know—there are several STAA members who have volunteered to help with illustrations. For examples of good artifact and map illustrations, see

those by Richard McReynolds and Ken Brown in previous issues.

When drawings or sketches of artifacts are included in your manuscript, please give the name of the artist responsible for the illustration(s). All figures should contain an appropriate caption and, where necessary, identification of each specimen (a, b, etc. or 1, 2, etc.) to aid referencing individual specimens in the text. The suggested procedure is to photocopy your original drawing and write in captions and identification letters on the photocopy. This saves the original for our use in final preparation of camera-ready copy.

PLEASE include a proper scale on all maps, diagrams, artifacts, etc. When any figure must be reduced, the scale must be in the original figure so that reduction will not change any proportions. Most of our artifact figures are drawn "actual size" but this is not proper publishing terminology. A scale is necessary, and may be reset in the picture through "cut and paste"—just so it is there. Remember that photocopied material very often slightly enlarges, and care must be taken that there is no change in the scale if done separately. For area (regional) maps, a small "rake scale" will help in our final copy—just so it is the proper dimension. Any site excavation map **MUST** have a good scale with it, again, **IN** the map so that reduction will not change the proportions.

Citations of references should be embodied in the text, giving the author, date, and page (e.g., Hester 1980:33). All references cited should be included in a References list using normal archaeological form (see articles in this issue for examples). The Reference list should not include publications not referred to in the text. Personal communications are cited in the text (e.g., Anne Fox, personal communication 1977) but need not be included in the Reference list.

Be sure to include a short (4-6 lines) biography for **EACH** author of the paper. The principal author and one co-author will receive two additional copies of *La Tierra*. Additional coauthors will receive one extra copy each. We will need each author's address for mailing purposes.

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Manuscripts and/or hard copy of disk, if used, or other information may be submitted to: Evelyn Lewis, Editor, *La Tierra*, 9219 Lasater, San Antonio, Texas 78250. With your cooperation, much time may be saved in correspondence to clear up matters before *La Tierra* can go to press.

Thanks to all of you for the fine reports coming in. Keep them coming!

THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

The Southern Texas Archaeological Association brings together persons interested in the prehistory of south-central and southern Texas. The organization has several major objectives: To further communication among avocational and professional archaeologists working in the region; To develop a coordinated program of site survey and site documentation; To preserve the archaeological record of the region through a concerted effort to reach all persons interested in the prehistory of the region; To initiate problem-oriented research activities which will help us to better understand the prehistoric inhabitants of this area; To conduct emergency surveys or salvage archaeology where it is necessary because of imminent site destruction; To publish a quarterly journal, newsletters, and special publications to meet the needs of the membership; To assist those desiring to learn proper archaeological field and laboratory techniques; and To develop a library for members' use of all the published material dealing with southern Texas.

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