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QUARTERLY JOURNAL OF THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

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Evelyn Lewis
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About the Cover: A red-painted pictograph at the El Caido site. See report starting on page 14. Drawings by Richard McReynolds are found on pages 10, 12, 43, 45 and 52.

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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The ROBERT F. HEIZER Award

FOR OUTSTANDING CONTRIBUTIONS TO ARCHAEOLOGY

1996



Chairman Wilson McKinney (left) presents the Heiser Award to Smitty

E. H. "SMITTY" SCHMIEDLIN

During 1996, E. H. "Smitty" Schmiedlin has been involved in a variety of activities critical to the future of southern Texas archaeology, particularly on-going monitoring of important mission-era and prehistoric sites in the Victoria area, work as an archeological steward identifying and assessing new sites for the Office of the State Archeologist, involvement in the planning and arrangements for the next Texas Archeological Society annual field school to be held at the Mission Espiritu Santo (41VT11) and volunteering to serve as camp boss for this project, and a myriad of other archaeological activities.. These include, but are not limited to, work at Falcon Reservoir on the lower Rio Grande where sites have been exposed by low water levels which need to be identified and protected, assisting at the La Belle site to help recover vital information on this significant La Salle shipwreck, site documentation working with the Texas Archeological Research Laboratory and the Texas Historical Commission, and following through by contributing to publication of site reports in regional journals, particularly *La Tierra*. Smitty has a exceptional degree of activity, involvement, and enthusiasm which serves as an example to us all; he is a model of what an archaeological steward and involved STAA member can contribute to southern Texas Archaeology.

*The DEE ANN STORY ARCHAEOLOGICAL CONSERVATION
Award
for 1996*



(left to right): John Knoerl, Bonnie Burns, Katie Ryan, and David Lowe of the National Park Service

***NATIONAL PARK SERVICE
American Battlefield Protection Program
Geographic Information Specialists
John Knoerl, Director***

The archaeological crisis at Falcon Reservoir on the lower Rio Grande brought about by lower water levels exposing a number of potentially significant historic and prehistoric sites represented a major challenge to archaeologists working in South Texas. Geographic Information Specialists with the American Battlefield Protection Program of the National Park Service brought their advanced technology to the problem, donating their time, effort, and use of equipment for the location and documentation of such endangered sites, working with STAA members, the Texas Historical Commission, and archeological stewards of the Office of the State Archeologist, as well as the staff of the Texas Archeological Research Laboratory. At least 110 sites were documented and very precisely located using global positioning systems (GPS) accurate to within 1 meter, based on GPS satellite locational beacons. The sites identified, including some endangered historic burials, can be better protected and preserved as a result of this work. The STAA acknowledges the key role of John Knoerl, Director of the ABPP, Washington, DC, for his critical assistance in making this project a reality.

LIFETIME ARCHAEOLOGICAL CONTRIBUTION Award

1974 - 1996

*For Exceptional Meritorious Service
to the
Southern Texas Archaeological Association*



Shirley is presented the award by Wilson McKinney (left) and Jimmy Mitchell

SHIRLEY VAN DER VEER

Shirley Van der Veer has recently relinquished her critical role in maintaining STAA computer membership lists and operating the STAA office, a role which she has performed for the organization for more than 23 years. Over these years, she has also been extremely supportive of field work at the Dan Baker Site and for years operated the Baker Site lab in her home, and was instrumental in the successful operation of teacher workshops, STAA field schools, and a variety of other projects. Shirley is one of the key individuals who have kept the association functioning, and she has donated innumerable hours and effort which are not visible to most of the membership, but which are greatly and sincerely appreciated by all. Her dedication, directness, vigor, and enthusiasm have played a key role in the continuing success of the organization, and serves as an example to us all.

NOTES ON SOUTH TEXAS ARCHAEOLOGY 1997-1
Archaic Burial Patterns in Southern Texas: Further Data from the Castillo Site
(41ZP2), Falcon Reservoir

Thomas R. Hester

In the last few years, we have learned a great deal about the mortuary practices of the Archaic peoples of southern Texas. Most notable, in terms of detailed and abundant data, is the Loma Sandia cemetery (41LK28) reported by Taylor and Highley (1995). Burials at that site date to the late part of the Middle Archaic. A comprehensive overview of Archaic burials in southern Texas is also provided in their volume. More recently, the Silo site (41KA102) in Karnes County has yielded information on Transitional Archaic mortuary practices (Lovata 1996).

Numerous burials salvaged at Falcon Reservoir also contribute to the study of Archaic mortuary patterns (Hester, ms.) and well into the Late Prehistoric (Boyd et al., ms.). But, even as these new data have become available, the reexamination of a burial reported in the early 1950s can now be interpreted in a new light and can contribute to the growing set of data on Archaic funerary practices. This reexamination has been made possible because the materials from the burial, the Castillo site (Cason 1952) are curated at the Texas Archeological Research Laboratory (TARL; collections of the National Park Service-University of Texas salvage excavations at Falcon Reservoir) and could be restudied. In addition, photographs are also in the TARL archives that provide more information, from today's perspective, than they did in 1952. By going back and taking another look at the Castillo burial, it appears to date to the Middle Archaic and demonstrates similarities with Loma Sandia and with other Falcon area Archaic burials.

Joe F. Cason, who worked with Alex Krieger, Jack Hughes, and others in the Falcon salvage effort has published this following description of the Castillo site burial (41ZP2; Cason 1952:239-240):

Mr. Robert Sherron of the U. S. Agricultural Department informed us of a burial discovered in one of the arroyos immediately adjacent to the Arroyo Beleno. This site, named after Juan Castillo, lies on the lip of the arroyo bank some two

hundred yards east of the [Rio] Grande. A sparse surface collection of points and scrapers was collected in the general vicinity of the burial. The burial itself was apparently about fourteen inches below the surface. Erosion had exposed part of the skeletal material to the extent that Mr. Gaspar Garcia, who discovered the burial, had recognized the character of the bones. Mr. Garcia had either partially or completely excavated the burial some six months prior to our arrival. He had removed some six or eight points and the left half of a mandible. One point had been found in contact with the lingual surface of the body of the mandible. Subsequently, Mr. Garcia had covered over the material after removing the mandible and the points.

Examination of the site showed small fragments of bone exposed on the surface. Excavation revealed considerable skeletal material which included a complete skull, except for the left half of the mandible previously mentioned, cervical vertebrae, ribs, fragments of the long bones of the arms, and very small fragments of the femora. A second complete mandible was also recovered. The location of most of the material indicated that it had either been disturbed by Mr. Garcia or was in part a secondary burial. There was some slight indication that not all of the material had been disturbed since the relation of the cervical vertebrae and the ribs to the skull seemed more or less normal. The axis of skull, cervical vertebrae, and ribs was from east to west, but lack of sufficient post-cranial material precludes any statement concerning flexure.

Recovered with the skeletal material was a large quantity of tubular bone beads, ochre, flint points, a bone awl and a bone tube. Excavation was continued until sterile silt was encountered around and under the skeletal material.

This published description of the Castillo site burial was not accompanied by illustrations of any of the grave goods. In addition, few notes (other than these published comments) are on file at TARL.

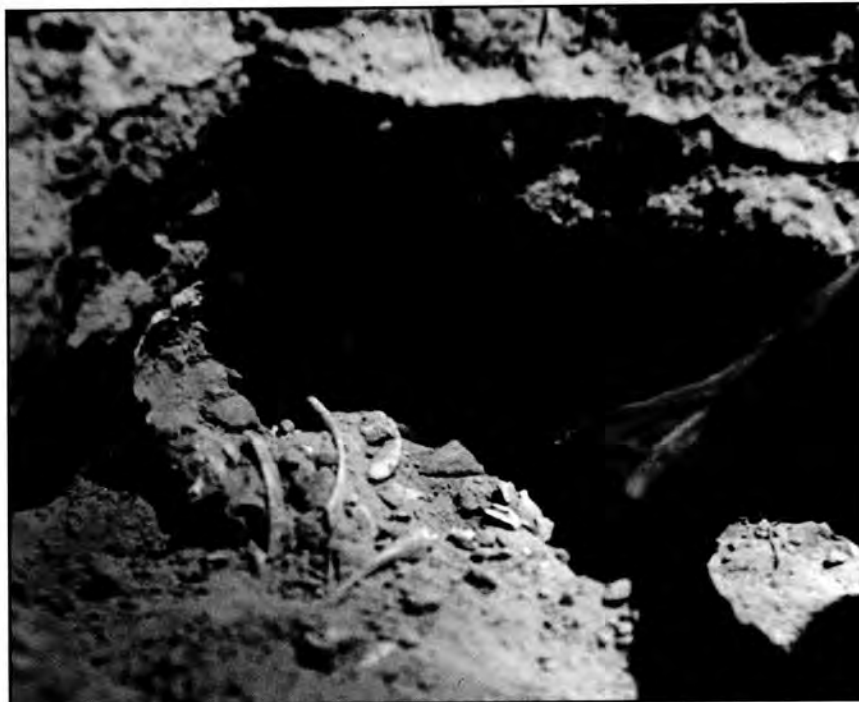


Figure 1. View of Castillo Site Burial. In the center of the photo, an archaeologist points to Tortugas point in situ among the remains.



Figure 2. Lithic Artifacts from the Castillo Site Burial. This field photograph is of Mr. Garcia's collection resulting from his initial excavation of the burial. Top (left to right), 2 Clear Fork tools, Tortugas point, Clear Fork tool; Center (left) mandible from burial, with Tortugas point tied to it by Mr. Garcia; (right) Tortugas point; Bottom, 2 Tortugas points; 2 distal tips of thin bifaces.

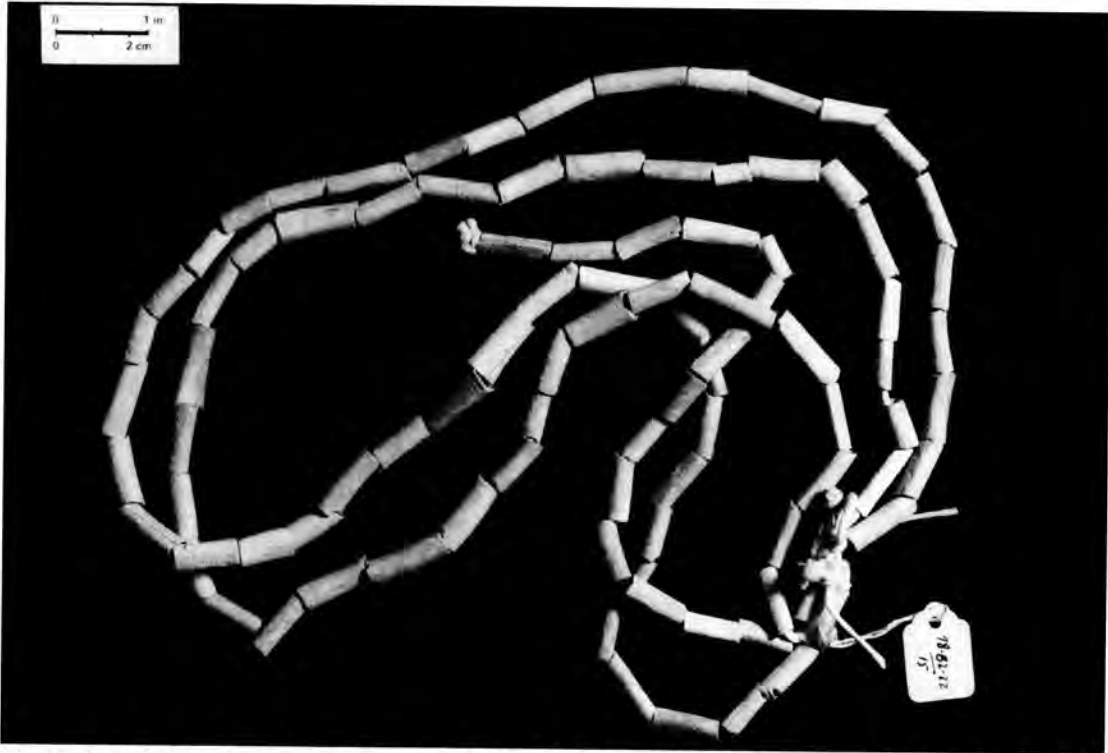


Figure 3. Tubular Bone Beads from the Castillo Site Burial. Exact location of beads with burial is unknown; beads were strung for curation in the 1950s.

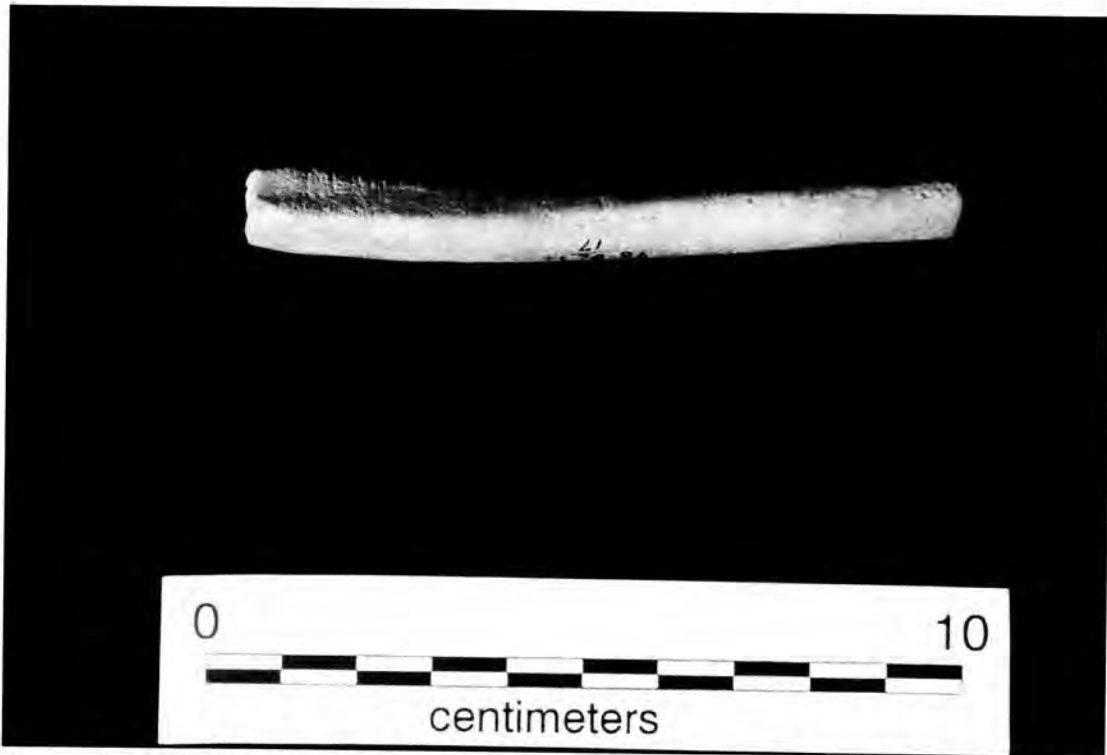


Figure 4. Bone Tube from the Castillo Site Burial. The artifact is made from human bone (published originally in Hester 1969a).

However, there are several photographs taken at the site, and one of these, a field photograph apparently taken by Edward B. Jelks, includes the only record of the projectile points and lithics found with the burial.

Additionally, the human remains from the Castillo site are in the Human Osteology Facility at TARL. These represent an adult female, 25-30 years of age. Detailed osteological observations are on file at TARL. A photograph taken at the time that the burial was salvaged shows a Tortugas point in situ (Fig. 1).

The lithics found consist of at least four Tortugas points (Fig. 2) and what appear to be three bifacial Clear Fork tools. The point tied to the mandible by Mr. Garcia (Fig. 2, center) is also of the Tortugas type (thus making a total of five points of this type from the burial). Unfortunately, the field photograph does not have a scale of any sort, and no measurements or other data are present in the Falcon Reservoir records.

At least 94 tubular bone beads from the burial are shown in Fig. 3; a few other fragments were also recovered. They were strung for curation purposes some decades ago. Dimensions range from 13-25 mm in length and 5-9 mm in diameter. They are quite thin, made of unidentified bird bone. Interestingly, they are larger and longer than the bone beads that are often found in great numbers with Late Prehistoric burials at Falcon (James B. Boyd, personal communication, 1997).

Another mortuary inclusion is that of a human bone tube (Fig. 4), made from a section of the shaft of a right ulna. The ends have been cut and smoothed and the exterior has been smoothed. It also appears that the interior may have been artificially enlarged.

This specimen, previously published by Hester (1969a) is 94 mm long and 9-11 mm in diameter. Thicknesses of the tube wall at the cut ends range from 1.5-2.0 mm. Human bone artifacts are known from Archaic and Late Prehistoric burials on the central and southern Texas coast (Hester 1969a; 1969b).

Finally, there were eight irregular pieces (unmodified) of red ochre (hematite; marble-sized and smaller), and a pointed (but unmodified) splinter of deer bone in the TARL collections attributed to the 41ZP2 burial. The deer bone fragment had been described as a "bone awl" in Cason's summary.

In summary, the Castillo site burial was accompanied by mortuary inclusions reminiscent of Loma Sandia (Tortugas points, Clear Fork tools) and likely dates to the late Middle Archaic. In addition, the Rio Salado burial (Hester ms.), across the Falcon Reservoir in Tamaulipas, was accompanied by Tortugas points, a stone pipe, large thin triangular bifaces (here again, distinctive similarities to Loma Sandia), as well as *Oliva* shell beads.

The Castillo site, was found on the Arroyo Veleno (not Beleno, as reported by Cason 1952) inundated by Falcon Reservoir in the early 1950s. It almost certainly has been re-exposed by the low lake levels of recent years (Hester 1996). However, we do not have a precise location for it (approximate locational data are on file at TARL) and it was not one of the sites relocated during the August 1996 site documentation efforts by the National Park Service, the Texas Historical Commission, and TARL (Perttula et al. 1996).

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A REMINDER

Do you hear that "clarion call" again for manuscripts? I know that you have been working on your archaeological projects—in spite of all the early Spring rains—so let's hear from you. Manuscripts are needed for summer and fall issues of *La Tierra*.

An INFORMATION FOR CONTRIBUTORS page has been added to this issue to help you in collecting your thoughts. Let me emphasize a few of the oversights that will delay publication of your report. Each manuscript must have an ABSTRACT to introduce the text content in brief, and should be limited to 150 words. Another problem often arising is the omission of the BIOGRAPHY (BIO) of the author AND COAUTHORS. Readers are interested in the background of the writer(s) in its briefest form.

When drawings or sketches accompany a manuscript don't forget to identify the ARTIST. And quite often I receive a report with a missing REFERENCE, either in the text or on the References Cited page. Be sure that these references 'match up' before mailing our copy of the manuscript.

Thanks for your continued interest in STAA and *La Tierra*.

Evelyn Lewis, Editor

DECORATED MUSSEL SHELL ARTIFACTS

C. K. Chandler and Don Kumpe

ABSTRACT

Several decorated freshwater mussel shell artifacts are illustrated and discussed.

INTRODUCTION

Deposits of freshwater mussel shells occur as frequent scatters and clusters in Late Prehistoric sites in South Texas and over much of North America. Most often the decorated mussels do not survive intact nearly as well as marine shell artifacts. The interior pearly nacre of the freshwater mussel makes for very attractive ornaments but the carving and incisions of these shells cuts through several layers of the pearly nacre and hastens the breakup of the shell.

Decorated mussel shells (most often fragmentary) have been reported along the Lower Rio Grande (Chandler and Kumpe 1992), at the O. H. Ivie Reservoir in Concho, Runnels and Coleman Counties (Lintz 1992), at Fate Bell Shelter in Val Verde County (Pearce and Jackson 1933), at 41BX1 in Bexar

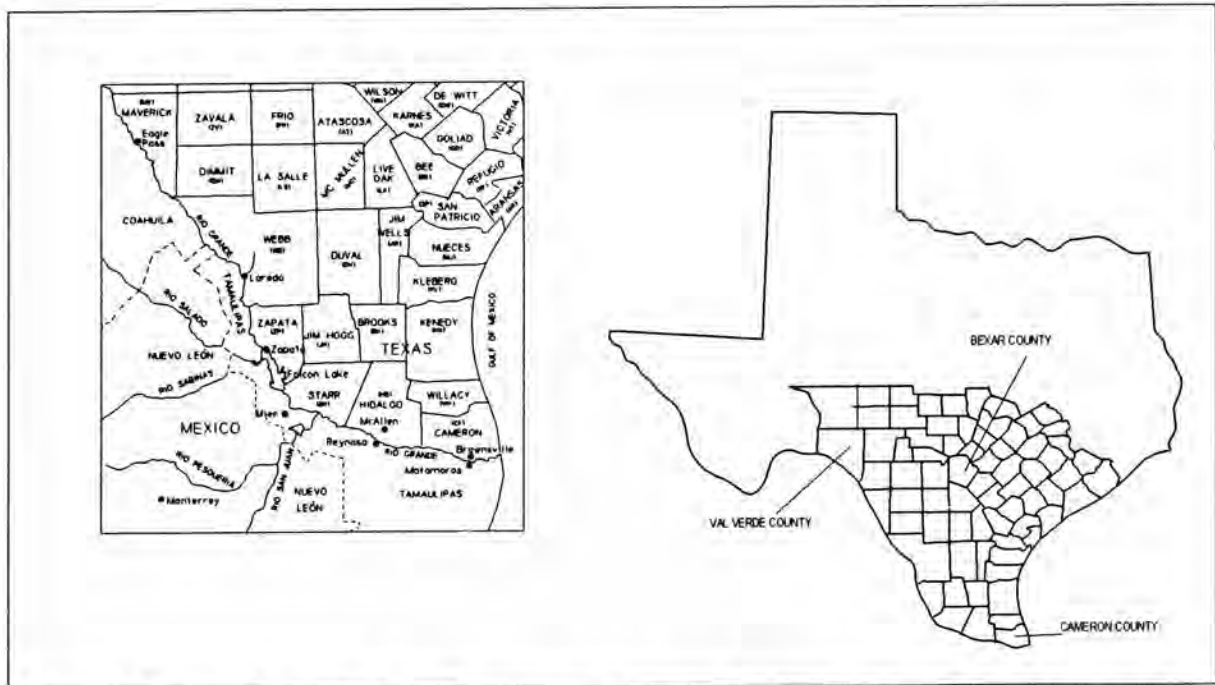
County (Lukowski 1987), and at Oblate Shelter (41CM1) in Comal County (Tunnell 1962).

It is of particular interest that the decorations on the shell artifacts from the Lower Rio Grande and the O. H. Ivie Reservoir have linear designs and no shallow punctations where most inland decorated mussel shell have punctations.

ARTIFACT DESCRIPTIONS

Figure 1, A, illustrates a large freshwater mussel shell pendant from the mouth of the Rio Salado where it enters Falcon Reservoir in Tamaulipas, Mexico. This type mussel is commonly known as a Washboard Mussel: *Megaloniais nervosa* (Dr. Harold Murray, personal communication 1996). This specimen is 155 mm in length and 87 mm in width. It weighs 158 grams.

It is without incised body decoration; however it is not without decoration of any kind. One long nearly straight edge has continuous deep half-circle serrations from the umbo to the outer edge. These serra-



Map on left shows Lower Rio Grande areas and Mexican cities referred to in text. Right map is Texas map indicating counties referred to in text for artifacts illustrated in this report.

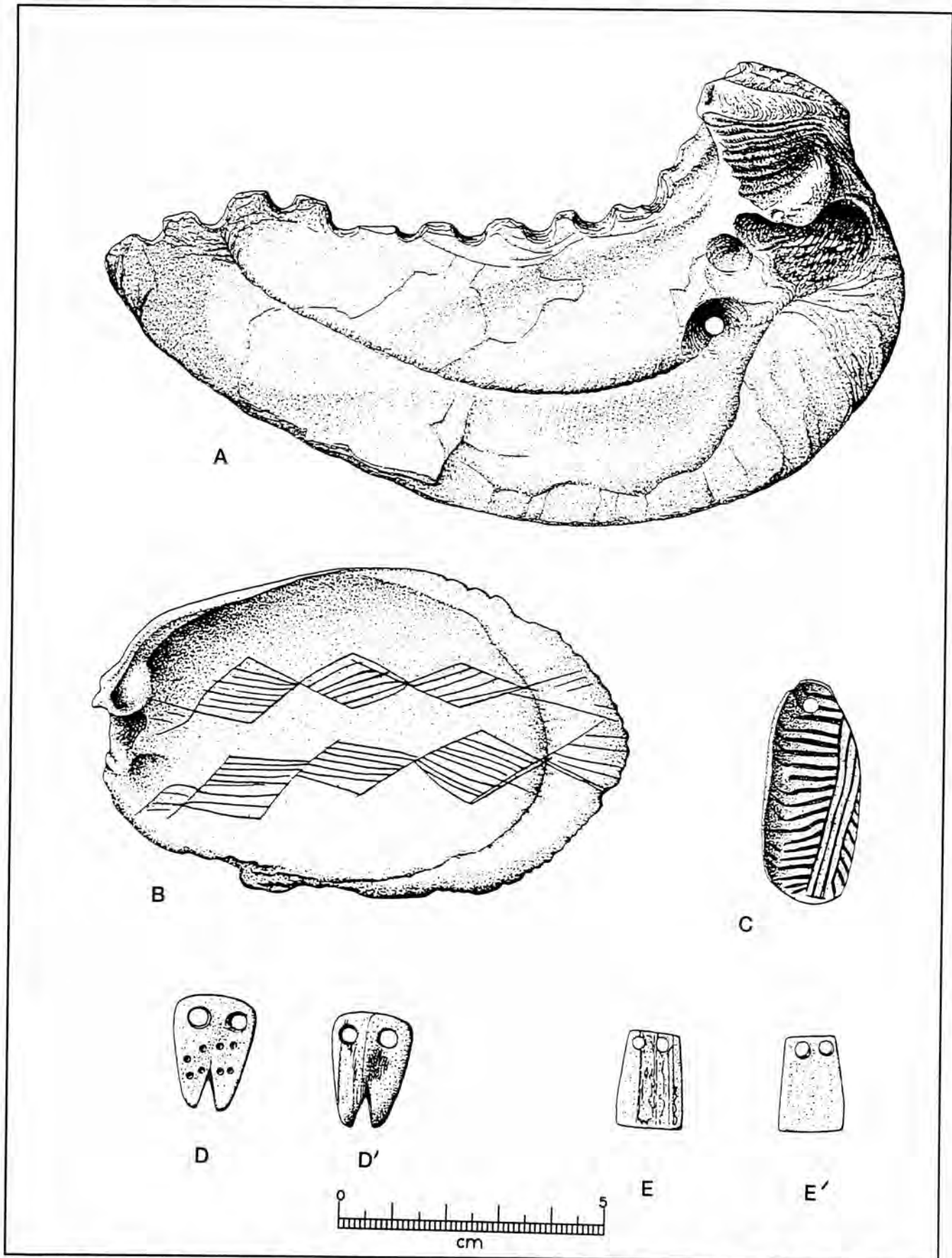


Figure 1. Decorated mussel shell. A, Tamaulipas, Mexico; B, Val Verde County, Texas; C, Tamaulipas, Mexico; D, D', Bexar County, Texas; E, E', Bexar County, Texas.

tions are 5 to 6 mm across and are separated 7 to 8 mm each. They have the appearance of having been drilled, then cut across from hole to hole to remove the hinge side of the shell. About one-third or more of the shell has been removed. There is a biconically drilled suspension hole on the pallial line near the anterior muscle scars. This hole has a maximum surface diameter of 12 mm and a minimum diameter of 4 mm.

Figure 1, B, illustrates a complete mussel shell with engraved decoration on the interior surface. It is 112 mm in length and 63 mm in width. It is without drilled suspension holes and probably was not used as a pendant. The delicately carved designs consist of two parallel rows of connected diamond shaped figures with 6 to 10 parallel lines in each panel. There is a series of tiny notches around a portion of the edge. This specimen was recovered at a depth of 40 inches (101.6 cm) during excavations at Fate Bell Shelter in Seminole Canyon, Val Verde County, Texas (Pearce and Jackson 1933). This is the only carved shell found in these excavations, although a conch shell gorget with five drilled holes, but without decoration, was recovered with one of the burials. The illustration presented here is a drawing by Richard McReynolds from the photo illustration by Pearce and Jackson.

Figure 1, C illustrates a freshwater mussel shell pendant reworked from a larger (probably broken) decorated shell pendant made in the style of previously reported specimens from the Lower Rio Grande (Chandler and Kump 1992). Three specimens in this report: Figure 1, C, Figure 2, A and Figure 2 C all exhibit very similar incised decorations to those previously reported in *La Tierra* (ibid.).

The shell illustrated in Figure 1, C is 41 mm in length and 17 mm in width. The interior surface is covered with straight line engravings. There are four parallel vertical lines near the right edge that was probably the center of the original artifact. The left side is covered with a series of parallel horizontal lines that contact the first vertical line. There is a single biconically drilled hole at the top end that was drilled after the decorative engravings. This specimen was found in Arroyo Salinillas in Tamaulipas, Mexico at Falcon Lake.

Figure 1, D, D' is a small complete mussel shell ornament with eight shallow drilled pits on one face. There are two biconically drilled holes in the top

(wide) end that are presumed to be there for securement. This specimen is triangular in shape with a deep notch in the narrow end. It may be a pendant but appears to more likely be an ornament for attachment to a garment along with several others for decorative purposes. It is 21 mm in length and 15 mm maximum width at the top.

This specimen was recovered from site 41BX1005 in north Bexar County.

Figure 1, E, E' is a small complete mussel shell ornament with two biconically drilled holes at the top (narrow) end. It is basically rectangular in shape but one long edge tapers inward slightly. It has three fine incised lines on one face. It is 18 mm long and 12 mm wide and is from the same site in north Bexar County (41BX1005) as Specimen D in Figure 1. It is considered to be an ornament for attachment to a garment in the same manner as Specimen D.

Figure 2, A is a broken freshwater mussel shell pendant. Present dimensions are 42 mm in length and 55 mm in width. It appears to be approximately one-half of the original size. There are two biconically drilled suspension holes at the top end that were first drilled from the shell interior where they penetrated to the exterior and were then finished from that side. The right side of the shell interior is tightly grouped with zigzag parallel vertical incisions that are remarkable for their uniformity of spacing and fine workmanship.

Bordering the inside edge of this panel is a vertical row of diamond shaped incisions. Adjacent to but not in contact is a vertical design beginning at the drilled holes and extending beyond the broken area. This narrow panel consists of two parallel vertical incisions with short evenly spaced projections on the left side and three parallel zigzag incisions in contact on the right vertical incising. This narrow central panel stands alone. To its left is another row of diamond shaped incisions. The lower portion of the incisions to the left of the diamond shaped column are absent. They appear to have been destroyed by abrasion. The short upper portion of this panel is intact.

This specimen is a surface find from about 45 miles south of Reynosa in northeastern Nuevo León, Mexico. The provenience of this specimen extends the distribution of this artifact type some thirty miles farther south than others reported here or those reported in 1992 (Chandler and Kump).

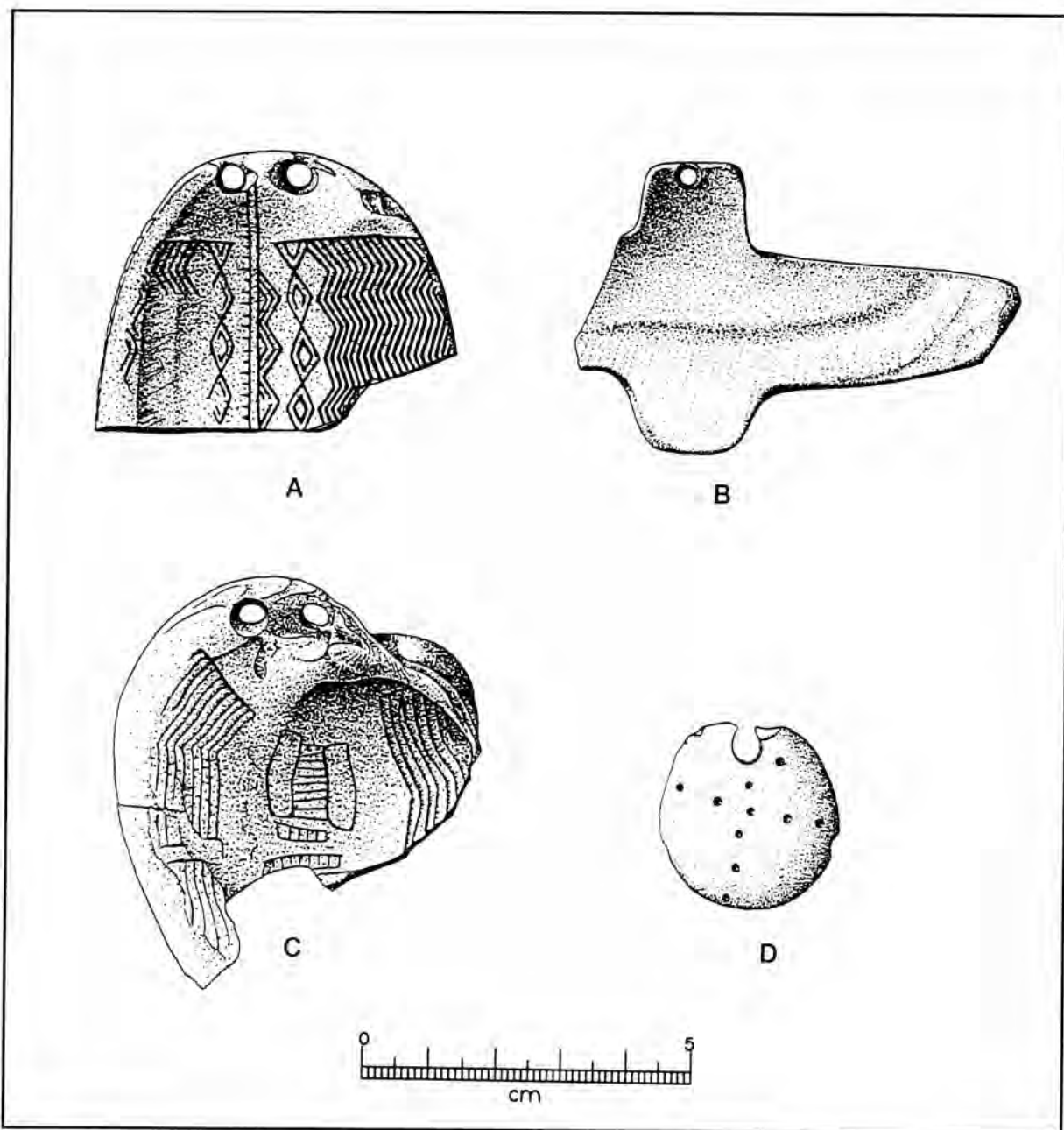


Figure 2. Mussel shell pendants. A, Nuevo León, Mexico; B, Tamaulipas, Mexico; C, Cameron County, Texas; D, Bexar County, Texas.

Figure 2, B illustrates a cross-shaped freshwater mussel shell pendant. The horizontal portion of the cross was the longest at approximately 110 mm. One end is broken and present length is 67 mm. The vertical portion has a single biconically drilled suspension hole and this central section is 44 mm in length. There is no surface decoration. This specimen is an isolated surface find from along Pipe Line Road

between Miguel Aleman and Mier in Tamaulipas, Mexico across from Starr County. It is photo-illustrated by Utberg (1968, Part II:11) but is drawn by Richard McReynolds from the actual artifact.

Figure 2, C illustrates a decorated freshwater mussel shell that is an isolated surface find (not from a site) from north of Port Isabel on the Laguna

Madre in Cameron County, Texas. It was found in two pieces. The large portion with the two biconically drilled holes was found by Henry Faires and some time later the small lower edge fragment was found in the same area by Billy Mitchell. The two pieces fit together and are now securely joined with glue. This specimen is now in the Mike Krzywonski collection.

The interior pearly nacre of this shell is decorated with three panels. The left panel consists of nine parallel incised lines that follow the outer curved edge of the shell. The right panel consists of eight parallel curving lines that follow that edge of the shell. The central motif is quite different. The lower portion of this motif is broken. The upper portion is rather boxy in shape. It appears like an enclosed staircase with two small rectangular motifs below.

Figure 2, D is a small disk-shaped freshwater mussel shell pendant. The biconically drilled suspension hole is broken. This break appears to be from long time use and wear. One face has a cross-shaped decoration

of shallow drilled pits. It is a surface find from Camp Bullis in northwest Bexar County, Texas.

DISCUSSION

Shell specimens Figure 1, C, Figure 2, A and Figure 2, C in this report are very reminiscent of the specimens previously reported from the Lower Rio Grande (Chandler and Kumpe 1992). While there is no repetition of the total design on any of these shells the carefully executed panels of parallel zigzag incised lines are the most common motif.

ACKNOWLEDGMENTS

Thanks are due to Douglas Bryan, Todd Chism, Richard Clardy, Arthur Collier, Mike Krzywonski, Jesse Gonzales and Mike Ryan for the loan of their artifacts for documentation and illustration, and special thanks to Richard McReynolds who prepared the illustrations.

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A FIRST LOOK AT THE EL CAIDO SITE: A HISTORIC ROCK ART SITE IN FAR NORTHERN COAHUILA, MEXICO*

Joe Labadie, Kathy Labadie, Terry Sayther, and Deborah Stuart

ABSTRACT

Over 300 rock art sites have been documented in the Lower Pecos River region of southwest Texas and northeastern Mexico. More than 95% of the sites consist of pictographs. The vast majority of these sites belong to an Archaic-period grouping of pictographs known as the Pecos River style. Additional styles include Bold Line Geometric, Red Linear, and the Late Prehistoric period Red Monochrome style pictographs. Post European contact (1590) pictograph sites are few and generally fall within one of two distinct stylistic groupings: Spanish Colonial period or later Plains Biographical style.

INTRODUCTION

This paper presents the initial documentation of a significant new historic rock art site located a short distance south of the Rio Grande in Coahuila, Mexico (see Figure 1). The site, named by the Mexican ranch owner as El Caido (the place of fallen rocks) contains both pictographs and petroglyphs. The term petroglyphs is used in this paper to refer to delicate, fine-line drawings with associated painted highlights.

PREVIOUS RESEARCH

The prehistoric cultural remains of the Lower Pecos River area have been the object of intense study since the 1930s. For a synthesis of all previous research, the reader is referred elsewhere (Turpin 1991, 1995 or Labadie 1987) as the focus of this paper is historic era pictographs, a subject which has received limited attention in the literature.

Research on rock art in the Lower Pecos region began with A. T. Jackson's epic book *Picture Writing of Texas Indians* (1938) which represents the first systematic research published on the subject. Jackson (1938) documented about 40 major rock art sites in

Val Verde County. Forrest and Lula Kirkland's watercolors (painted 1935-1938) made at about 50 pictograph sites (many of which were reported by Jackson 1938) were later published in Newcomb's book *The Rock Art of Texas Indians* (Kirkland and Newcomb 1967) which has recently (11/96) been republished by the University of Texas at Austin.

Harry Shafer, Fred Valdez, Roberta MacGregor and the Witte Museum of San Antonio introduced the general public to the wonders of Lower Pecos archaeology and rock art in *Ancient Texans* (Shafer 1984); and, along with Tom Hester, are responsible for rekindling the fires in the minds of the current generation of archaeologists and scientists working in the region.

For the past 20 years, Solveig Turpin has been the driving force behind the discovery, documentation, and preservation of rock art sites. More recently, she has been aided in her efforts by Jim Zintgraff and the Rock Art Foundation (Turpin and Zintgraff 1991). Dr. Turpin is, without a doubt, the region's most prolific writer, and is considered by most to be the leading scholar on prehistoric and historic rock art in Texas and northern Mexico.

Both Jackson and Kirkland documented a few historic pictograph sites. They realized that historic images could be divided into two broad temporal groupings: an early Spanish Colonial period followed by a later period dominated by motifs more commonly associated with southern Plains groups. The later Plains-influenced rock art has been termed Plains Biographic style by James Keyser (1987).

Keyser (1987:43) notes that the hallmarks of the Biographic style are depictions of action scenes composed primarily of humans, weapons, and tipis that are representative of actual events important in the lives of individuals and groups. Keyser (ibid.:48) demonstrates that in the Northwestern Plains area, there was a general trend away from an earlier, more rigid and static ceremonial style to one that empha-

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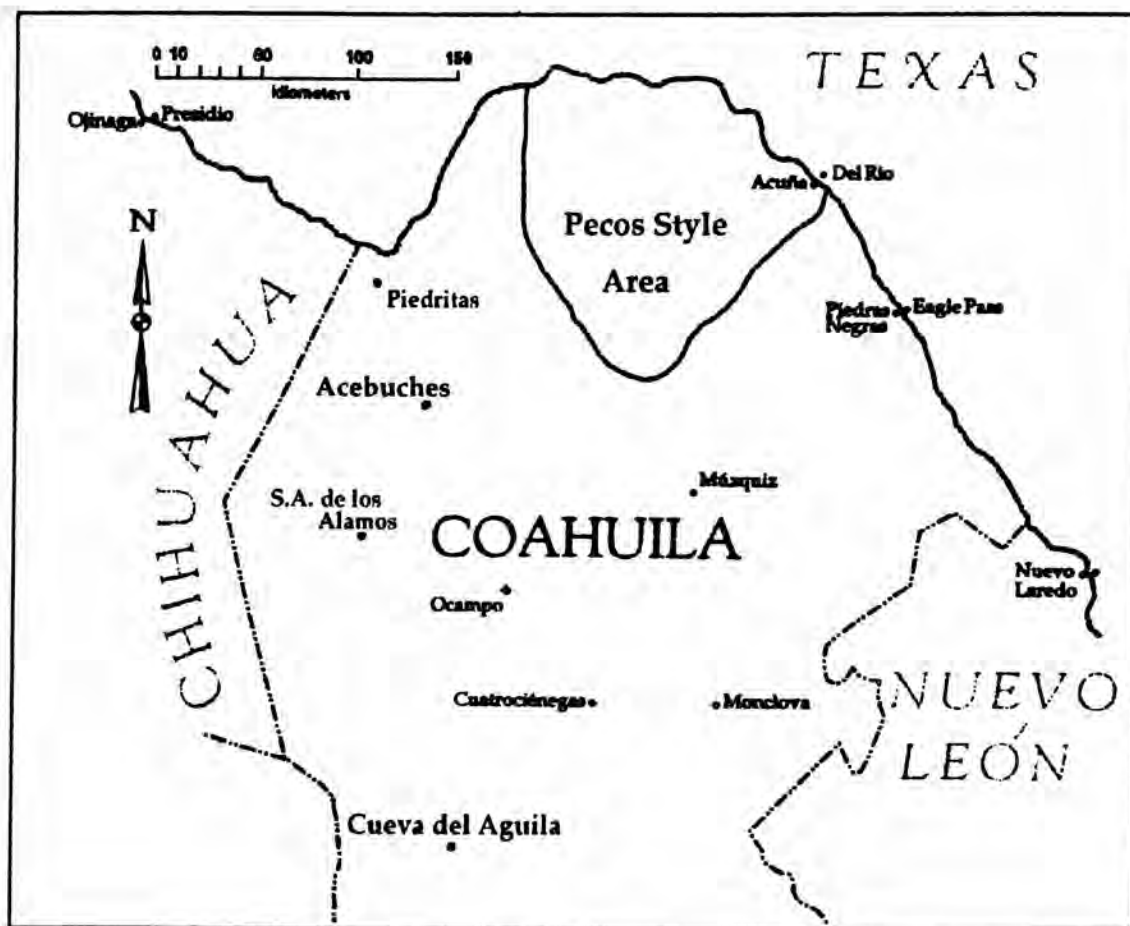


Figure 1. A general area map of northeastern Coahuila, Mexico. The El Caido site is located about one mile south of the Rio Grande within the area delineated for Pecos River style pictographs.

sized realism and precise depictions which he attributes to European contact. This trend peaked during the mid-1800s. He notes (*ibid.*) that between 1832-1852, upper Missouri River Indian groups were exposed to the sophisticated portraiture of many early artists including Catlin, Bodmer, and Kurz. These artists painted for the Indians and even provided materials and training to interested native artists (Ewers 1957, 1968). Biographic style rock art was produced rarely, if at all, after 1880 when most tribes were confined to reservations (Keyser 1987:50).

Utilizing Spanish Colonial documents, historical and military records, her own field surveys, and scant archaeological remains, Turpin persuasively demonstrates (1989:296) that there are four distinct (overlapping) historical cultural periods for the broader geographic region that includes the lower Pecos River area. She (*ibid.*) ably places most of the known historic rock art sites (about 15 panels total) into one of her four temporal groupings. Each period is relatively short, difficult to define in terms of absolute dates, but can generally be characterized by the near political or geographic dominance of one cultural group (with a distinctive material culture) over one or several other semi-identifiable groups.

The short-term dominance over and later extinction of indigenous Native American groups in the Lower Pecos region by the Spanish, by successive waves of southern Plains groups, by Anglo-European settlers, by the Republic of Texas and by U.S. Army personnel all occurred in just 300 years. Each culture left a distinctive mark on the lower Pecos River region; some are more recognizable than others.

Early Spanish Colonial Period (A. D. 1590-1700)

The 1590 expedition of Gaspar Constaño de Sosa through the Lower Pecos region and up the Pecos River valley marks the beginning of the Early Spanish Colonial period. Near present day Sheffield, Texas, de Sosa's scouts had a non-hostile encounter with members of the Tepelguan (Schroder and Matson 1956:50-51) or Depesguan (Hammond and Rey 1966:25-60) nation. Both translators speculate that these people may have been Jumano or Jumano Apache.

Early Spanish Colonial pictograph sites include Vaquero Shelter [41VV77], Cabellero shelter [41VV343], and certain panels at Meyers Springs [41TE9] (Turpin 1989). All three sites include depictions of churches; an iconographic symbol for the

newly arrived Spanish empire. Turpin believes early Spanish Colonial period pictograph sites reflect the wonderment of indigenous and seasonal groups to new arrivals in the region.

The early 17th century saw the transition from the last of the indigenous cultures and seasonal southern Plains bison hunters to the first of the Spanish explorers who came in search of riches and slaves. Finding no riches and even fewer settled Native American groups or villages, the Spanish traversed the region en route to New Mexico, leaving little more than a few archival records of their passage. Not chronicled and therefore often speculated about, are the effects on (the yet-to-be named) indigenous, pre-Spanish cultural groups that were brought about by the introduction of European diseases.

Late Spanish Colonial Period (A. D. 1700-1821)

The early Spanish exploration period ends with the establishment of Mission San Juan Bautista in 1700 (Weddle 1968); the Spanish were no longer just tourists passing through the region en route to other places; they were here to stay. Following the Great Pueblo Revolt of 1680, the vast herds of horses left behind by the fleeing Spaniards were quickly rounded up and traded by Native American groups throughout the Great Plains. By 1700, the horse had been traded as far north as the Canadian border. The adoption of the horse, by what had been semi-nomadic groups of hunter-gatherers and semi-sedentary horticultural groups, dramatically changed the lifeways of all Great Plains societies in a matter of just a few decades. The Apaches were now able to raid beyond traditional territories and began to move throughout the southern Plains and into present-day Texas and Mexico. Mission San Juan Bautista, near present-day Guerrero, Nuevo León, Mexico, was the first in a series of Spanish settlements whose ultimate purpose was to establish a line of defense from the ever increasing Apache raiders.

In 1737 Mission San Fernando de Austria, established along the Rio Grande just south of present-day Ciudad Acuña, Mexico was removed back to Sabinas (Turpin 1989). By 1773, the Spanish presence on the southern fringe of today's Lower Pecos region was again reasserted but this time had been renamed as Mission Agua Verde. In 1780, the Spanish (again) recognized their inability to sustain the mission and removed it to San Fernando de Austria (*ibid.*). As

Spanish control contracted to the south, there was a concomitant increase in Apache dominance in the region as the indigenous, pre-contact groups were either dead or had been absorbed by the Apache.

Turpin characterizes this period as one with ever increasing hostile encounters. The initial wonderment at the new and strange material culture of the Europeans seen in the earlier rock art is replaced by a growing resentment. In New Mexico, similar resentments had sparked Pope's Revolt of 1680. The pictographs at Missionary Shelter (41VV205) and the Malone Ranch site (41VV570) may reflect the evolving attitudes of Native Americans towards the ever intensifying dominance of the Spanish. At Missionary Shelter, which was scoured from the canyon wall by the massive flood of 1954, there was a solitary historic pictograph which incorporated the head and arms of a priest and a church building into a single image; the image appears to be pierced by a lance or arrow. Newcomb (Kirkland and Newcomb 1967:108) muses that "the figure visualized what Lipans and Mesca-leros often wanted to do and occasionally did do to missionaries."

By the mid-1700s, the ever increasing presence of the Comanche now had the Apache petitioning the Spanish for protective missions from their traditional enemies. The short-lived Mission San Lorenzo de la Santa Cruz [1761] (Tunnell and Newcomb 1961) and Mission La Candelaria [1762] were eventually established along the Nueces River (east of the present-day Lower Pecos region) for the Apache. However, with the diminishing presence and eventual dissolution of the Spanish empire in the region (1821), the Comanche, Kiowa, and other Plains groups asserted their dominance throughout the region. Today's Lower Pecos region was a buffer zone or no-man's-land between the Comanche bases to the north and former Spanish settlements in Coahuila (Turpin 1986). The Comanche and other Plains groups continued to traverse the region up through the middle 19th century until the demise of the buffalo and the U. S. Army's concerted efforts to drive the Comanche into extinction.

Early Plains Period (A.D. 1550-1750)

Turpin's Infierno Phase (the last phase of the larger Late Prehistoric period) roughly coincides (450-250 B.P.) with de Sosa's expedition and other early Spanish expeditions through southwest Texas. She

notes (Turpin 1995:552) that a typical Infierno Phase archaeological site is dominated by four artifact types; small triangular stemmed arrow points, steeply beveled end scrapers, four-beveled knives, and plain ceramics. The rare finds of aboriginal ceramics are often poorly fired, calcite-tempered brown wares of uncertain origin. Turpin notes such ceramics most closely resemble pottery sherds reported from Mission San Lorenzo de la Santa Cruz (Tunnell and Newcomb 1961), a mission established in 1761 for the Apache on the Nueces River (about 50 miles east of the Lower Pecos Region). At the Infierno Camp site, Turpin notes that adjacent to the Infierno phase archaeological remains is a historic pictograph site with motifs that are clearly of southern Plains origins.

Early Plains themes at pictograph sites include portrayals of bison hunting, warfare, and rituals. At Meyers Springs, there is a well-preserved, red-painted pictograph panel which is generally interpreted as a historic depiction of a ritual. It consists of nine rectangular bodied, round-headed, single-feathered head-dressed, individuals that are joined at the hands. A solid painted individual to the right of the nine figures, appears to be clothed in non-Native American attire.

Martineau (1987:132) argues that this panel, and several adjacent pictographs, were probably made by Lipan Apache and collectively interprets the panel as a Spanish priest conveying the idea that "the only way for the uncivilized Indian to obtain salvation is by going to church." The "fact" that indicates the nine dancers are "uncivilized Indians" according to Martineau (*ibid.*) is indicated by their breechcloths, depicted by the two single, 45 degree angled, lines painted at the waist. Mallery (1893:266-328) offers the same explanation for lines extending from the waistline in his discussion of winter counts on historic buffalo hides among the Dakota.

At Bailando Shelter (41VV666), near the Rio Grande, Turpin (1986) documents another early southern Plains-influenced rock art panel consisting of a series of associated anthropomorphic figures. Four hand-holding individuals are depicted adjacent to shield symbols; they have lines extending from the waistline to indicate breechcloths.

The only known petroglyph site (41TE330) which clearly falls within Turpin's early Plains period was documented by A. T. Jackson (1938:158-159). In a small limestone rock overhang near the Rio Grande, Jackson documented a site where the ceiling is incised with conical tepees, rounded huts, dashed lines (representing footprints), and hoofprints which either indi-

cate trails or direction of movement. Turpin (1986: 292) interprets these petroglyphs to be the commemoration either of combat between pedestrian and equestrian forces or a successful raid for horses; both interpretations are indicative of Plains influences.

At Arroyo de Los Indios, located several miles south of the Rio Grande in Coahuila, Mexico (and about 160 kilometers southeast of Meyers Springs) Turpin (1988a) documented another Plains style historic pictograph site. Consisting of nearly 40 red and black painted figures in various stages of preservation, the overall themes seem to be conflict (between horsemen and foot soldiers) and depictions of horse stealing. One riderless horse, with a long line extending from its neck, may commemorate the theft of a specific animal. The bridles on several of the mounted horses are decorated with wavy lines, possibly indicating trophy scalps which are a common ornament in Plains Indian art (Keyser 1987). Turpin notes that one badly-preserved panel, outlined in charcoal with fugitive red paint accents "bears a remarkable similarity to the hero of a combat autobiography painted on the walls of a tributary to the Devils River 60 kilometers northwest" at site 41VV327 (the Hussie Miers site).

Later Plains pictograph sites (A.D. 1750-1883)

Turpin (1986) asserts that pictographs attributable to later Plains influences are typified by scenes depict-

ing hostility and aggression, similar to the trend noted between the early and late Spanish Colonial periods. Major pictograph sites for this time period include Ringbit Shelter, certain panels at Meyers Springs, and the Hussie Miers site (*ibid.*).

The Hussie Miers site [41VV327] (Figure 2) has a direct bearing on the interpretation and temporal placement of the El Caido site (reported in this paper). At site 41VV327, Turpin (1988b:50-55) documented five red-painted historic pictograph panels; each includes the depiction of one individual in combat with five different opponents. Turpin (*ibid.*) believes these panels are Plains combat autobiography style pictographs commemorating the exploits of a single individual who defeated both Native American foes and U. S. Army soldiers.

The central figure in each panel is outfitted only in a breechcloth and sports a braided queue hair-style that extends from his head to the ground. He is armed with traditional weapons, the shield and long lance (Wallace and Hoebel 1982), and is pitted against adversaries with rifles in four of the panels. He is mounted in three of the panels and fights on foot in the remaining two.

The central figure, or hero, in this series of pictographs at site 41VV327 is pitted against three different soldiers. The soldiers are each solid painted holding upright rifles. Each are depicted wearing single-spiked helmets, a Prussian-style helmet which was first used by the U. S. Army after 1871. Turpin (1988b) speculates that this panel "may commemorate

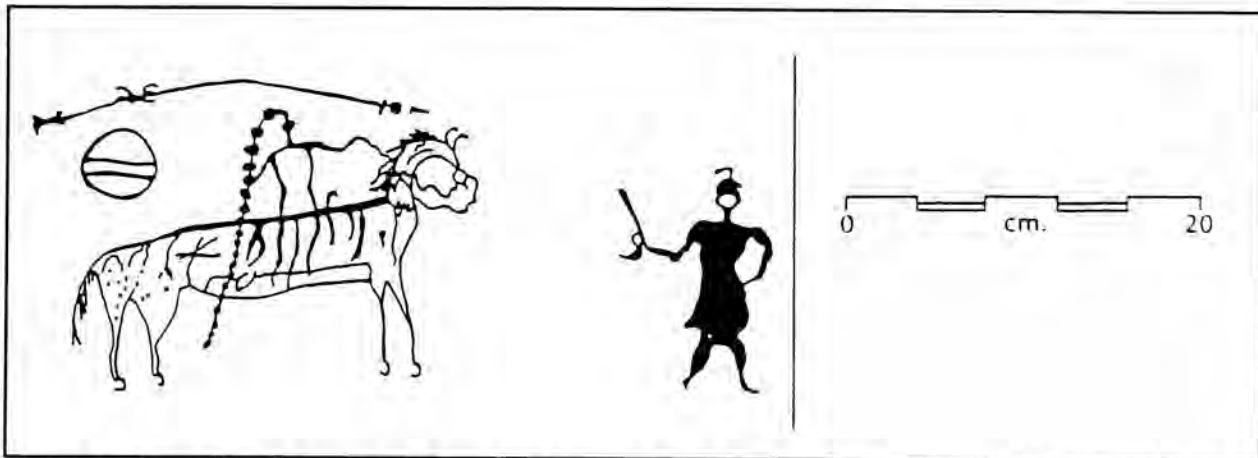


Figure 2. One of several panels of historic pictographs at the Hussie Miers site (41VV327) that features the same individual with a long braided hair style pitted against different adversaries. Illustration taken from Turpin 1989:Figure 18-13.

a bloody clash between Kiowa and Comanche forces and the U. S. Army which occurred in 1873 near the headwaters of the creek that flows past the site."

THE EL CAIDO SITE

Environmental Setting

The El Caido site is located near the junction of two large intermittent drainages with steep-walled canyons. Downstream from the site the drainages meet to form a single streambed which drains into the Rio Grande. One drainage is spring-fed and until the drought of 1995 flowed continuously for more than 50 years. During our initial reconnaissance at the El Caido site, three additional rockshelter sites were discovered in the nearby spring-fed drainage, each containing at least one panel of pictographs and unvandalized archaeological deposits which included perishable materials.

The El Caido site is located about 16 meters (50 feet) above the streambed in a shallow overhang in a near vertical canyon wall. The cliff face consists of Upper Cretaceous limestone of the Boquillas formation. At several locales along the base of the cliff, there are large accumulations of flat, tabular rock which have exfoliated from the canyon wall. Given the weathering of the rock surfaces in the talus pile below the rock art, it could be argued that much of the rock fall which created the alcove in which the pictographs were painted fell in a single episode.

Description

Within the alcove, there are two major rock surfaces with pictographs. These areas are arbitrarily designated in this paper as Panels A and B to facilitate discussion of individual images. Panel A (Figure 3) has at least seven well-preserved, painted images. Panel B (Figure 4) has at least 13 images consisting of both pictographs and finely-incised drawings with painted highlights.

Panel A

In Panel A (Figure 3) there are five images painted in solid red, one in ochre, and one in red and ochre. These pictographs range in size from roughly 15 cm to over 40 cm in height. There are three separate depictions of riders on horses; they are discussed from left to right across the wall.

The first image (Figure 5) depicts a single rider on

a horse. The horse is depicted with a simple, undecorated bridle illustrated as two separate lines. There are a series of near-parallel lines extending from the horse's nostrils. Keyser (1987:57) interprets such lines as representing scalps, symbols of victory, and indicative of war. The tail of the horse is depicted as two straight lines. Braided or bobbed tails are also a common depiction indicating war (ibid.). Details of the rider are obscured by the dried clay remnants of a mud dauber wasp nest. It seems clear however that at least one of the rider's hands is holding the horse's reins.

The second horse depiction (Figure 6) has a somewhat elongated torso in comparison to the other two but has two riders atop. The bridle appears to be decorated with at least three feathers. A front-most portion of the horse's mane appears to be tied in a queue and extends downward onto the nostrils. There are a series of four near-parallel lines extending downward and outward from the horse's nostrils, symbolizing victory in conflict. Both riders are wearing headdresses, similar in design, that have red-painted buffalo horns prominently displayed and nestled into the yellow-painted headdresses which extend downward below the rider's waists. Feather and horn bonnets were badges of membership in warrior or police societies in many Plains tribes (Howard 1954; Dempsey 1973; [and] in Keyser 1987:61). Adjacent to the lead rider is a depiction of a solid red-painted shield with streamers that extend downward to the rider's feet. There is also a clear depiction of a rifle or musket that seems to be decorated with at least four tassels or feathers near the barrel. The stock of the weapon is curved and includes a clear image of the trigger guard and hammer mechanism.

The third horse depiction (Figure 7) is entirely red-painted and is strikingly similar to the central figure reported by Turpin at the Hussie Miers site (41VV327) located on the Devils River. The rider is depicted with a long decorated ponytail hairdo. He appears to be holding the horse's reins in one hand and has his other arm across a decorated quiver slung across his chest. The horse seems to have a plain, undecorated bridle; there are several lines extending downward from the nostrils. Immediately behind the horse is a clear image of a solitary individual holding an un-drawn bow. This person has no headgear but seems to have a depiction of a decorated quiver slung at the same angle across the chest area as the mounted

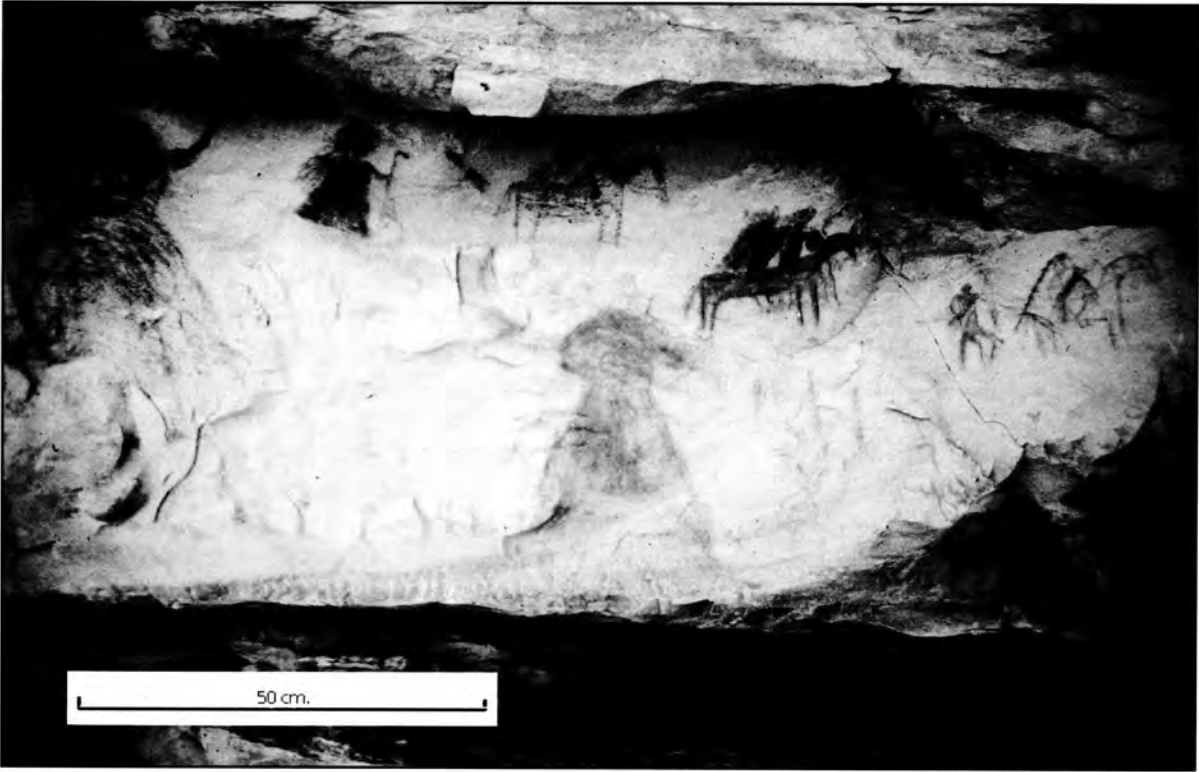


Figure 3. The El Caido Site, Panel A.

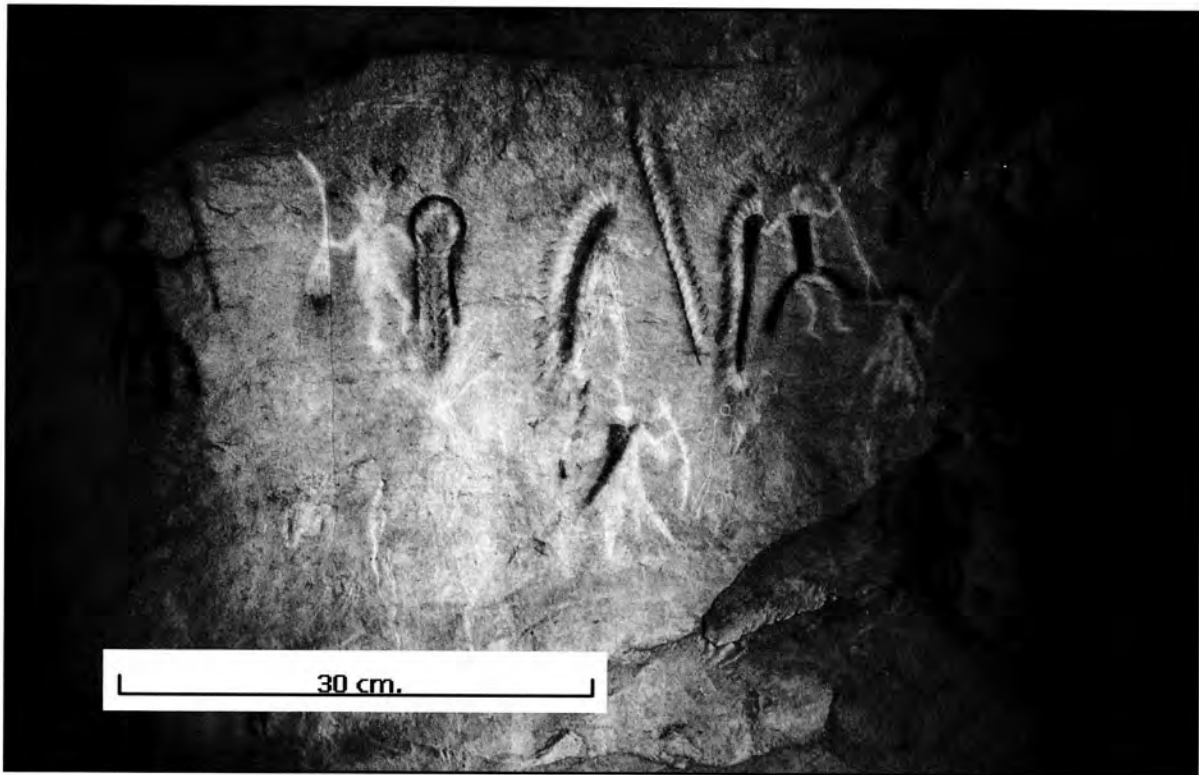


Figure 4. The El Caido Site, Panel B.

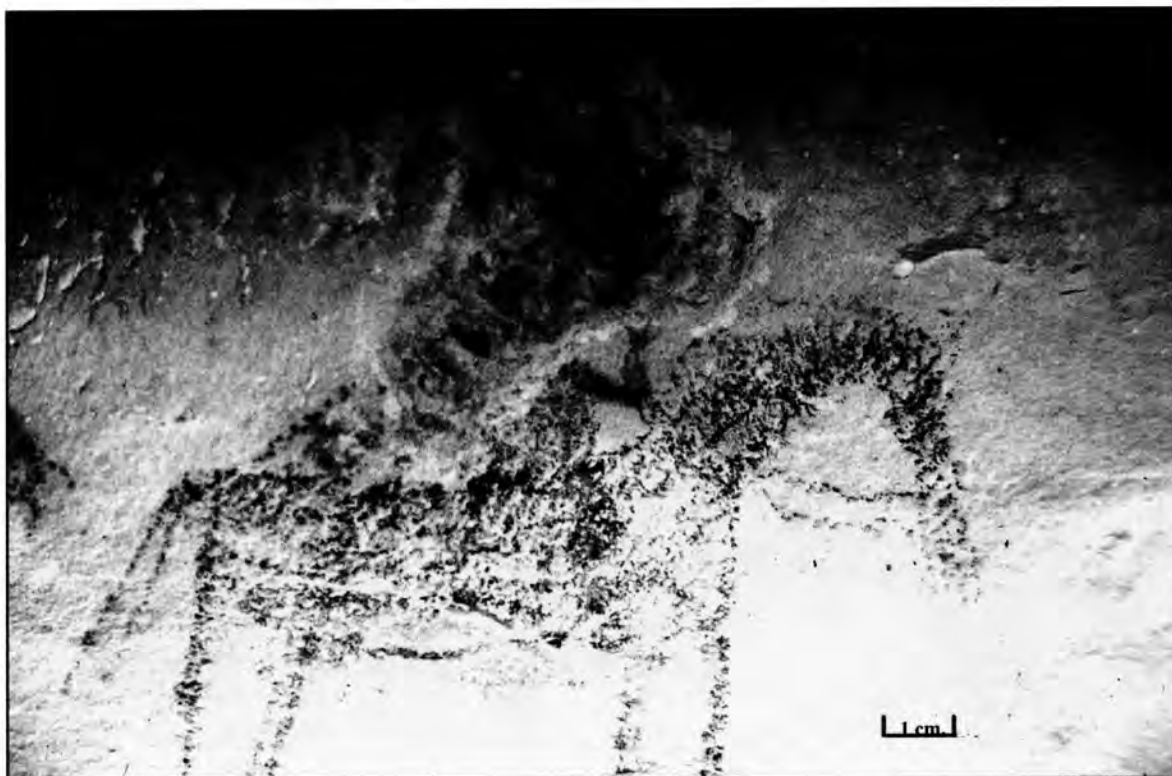


Figure 5. Red-painted depiction of a horse and rider in Panel A.



(Figure 5). Drawing of the red-painted depiction of horse and rider in Panel A. Most of the details of the rider are hidden under the dried-clay remains of a wasp nest.



Figure 6. A pictograph depicting two riders on a horse in Panel A.



(Figure 6) Drawing of a pictograph (above) depicting two riders on a horse in Panel A.

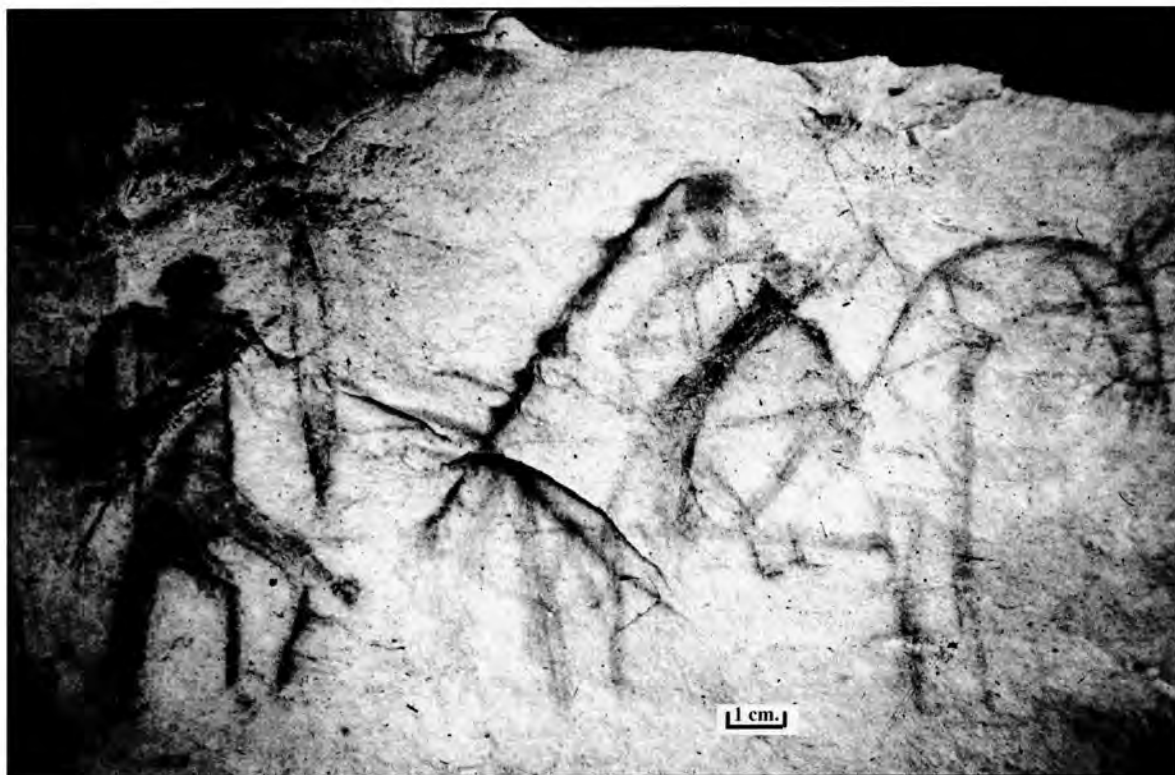
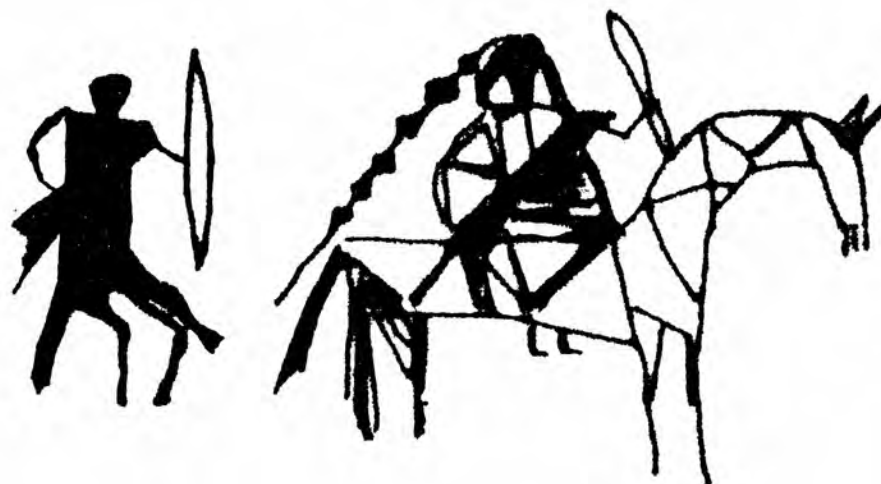


Figure 7. Pictographs depicting a mounted rider adjacent to a standing individual in Panel A.



(Figure 7) Drawing of the pictograph (above) depicting a mounted rider adjacent to a standing individual in Panel A.

rider. The quiver-like image is painted in yellow while the rest of the individual is solid red. The standing individual is depicted as wearing a breechcloth: two lines extending at a 45-degree angle from the waistline.

Additional pictographs in Panel A include two anthropomorphic (?) figures (Figures 8 and 9) each adorned with buffalo horns; one is painted in solid yellow the other in solid red. There is an additional solid red-painted anthropomorphic figure (Figure 10) wearing a headdress and holding an undecorated object in one hand that is curved like a shepherd's crook.

Panel B

Most of Panel B (Figure 4) is situated on a single, flat rock surface that is no more than one meter square. There are depictions of at least nine individuals and one tepee in the main area of Panel B. Three of the individuals are solid-painted in red. Five individuals are a combination of finely-incised lines and red-painted areas. One individual and a tepee-like image are composed entirely of incised lines.

Three of the individuals appear to be arranged in a single panel (Figure 11) while the remaining six are scattered about the remaining area. One is left with the impression that these three images are telling a story about a single individual. The first image (Figure 11-A) is incised into the rock surface and is a depiction of an upright individual holding objects in both hands that are roughly parallel to his body. The object in the right hand (left hand to the viewer) is a single, slightly curved incised line decorated at the base with tassels or feathers. These decorations consist of five lines with red-painted ovals at the terminus of the lines. In the left hand, there appears to be a long feathered headdress with the feathers pointed inward, as though it is being unfolded. There are at least 22 red-tipped incised lines in the headdress. (Immediately below this headdress is a clear incised depiction of a tepee that may be unrelated to the 3-part panel being described.) The individual also appears to be wearing a headdress, composed of four incised feathers each with red-painted oval tips. The individual has two long incised lines extending from the waistline (a depiction of a breechcloth) and several incised lines criss-crossing the chest.

In the second sequential image (Figure 11-B), the individual is wearing a head-to-toe feathered headdress that hangs to the left side of the torso. The headdress

appears as a thick, red-painted line with at least 22 incised lines with red-painted tips. The individual is holding what appears to be a lance in his left hand (viewer's right). This lance-like depiction consists of a long, straight, single red-painted line with at least 27 red-tipped incised lines attached at an oblique angle. The torso, legs, and one arm (the right arm is not visible) are outlined by incised lines with small patches of red paint (many incised) within the outline. The patches of red paint on the torso, arm, and both legs create a spotted appearance (Mallery [1893:308] notes several nearly identical depictions among Dakota winter counts as indicating smallpox.) This spotted effect surely was intended to convey something specific about this individual, as it is not present on any of the other figures at the site.

In the third sequential panel (Figure 11-C), the individual is now bare-headed and is holding the headdress in his right hand. The headdress has at least 22 incised lines with red-painted tips. The lance that was in the left hand has been replaced with a very clear incised depiction of a rifle. The upper torso of the individual is now painted a solid red; the person is wearing a breechcloth.

There are two other anthropomorphic depictions located immediately below the 3-sequence panel described above that bear special mention. One individual (Figure 12) is composed almost entirely of incised lines and wears a red-painted cape or sash across the shoulders which hangs along the individual's right side. The person appears to be depicted wearing a breechcloth. Both arms are raised to the shoulder; there is a series of fine, incised lines from the armpit to the wrist which creates a fringe-like effect. Both legs also have these fringe-like incised lines. In the person's left hand, there appears to be a rifle decorated with patches of red paint on both the stock and barrel. In the right hand is a saber or sword whose tip is pointed towards the ground. The individual has a single, feather-like line extending upward from the head.

To the right and slightly above this figure is a second anthropomorphic depiction (Figure 13) with several similarities. Except for a small red-painted area on the right shoulder, this individual is composed entirely of incised lines. In the person's left hand, there is a nearly identical depiction of a saber or sword; however, the tip is pointed upward. This individual, too, has a single feather-like line extending



Figure 8. A yellow-painted pictograph in Panel A.



Figure 9. A red-painted pictograph in Panel A.

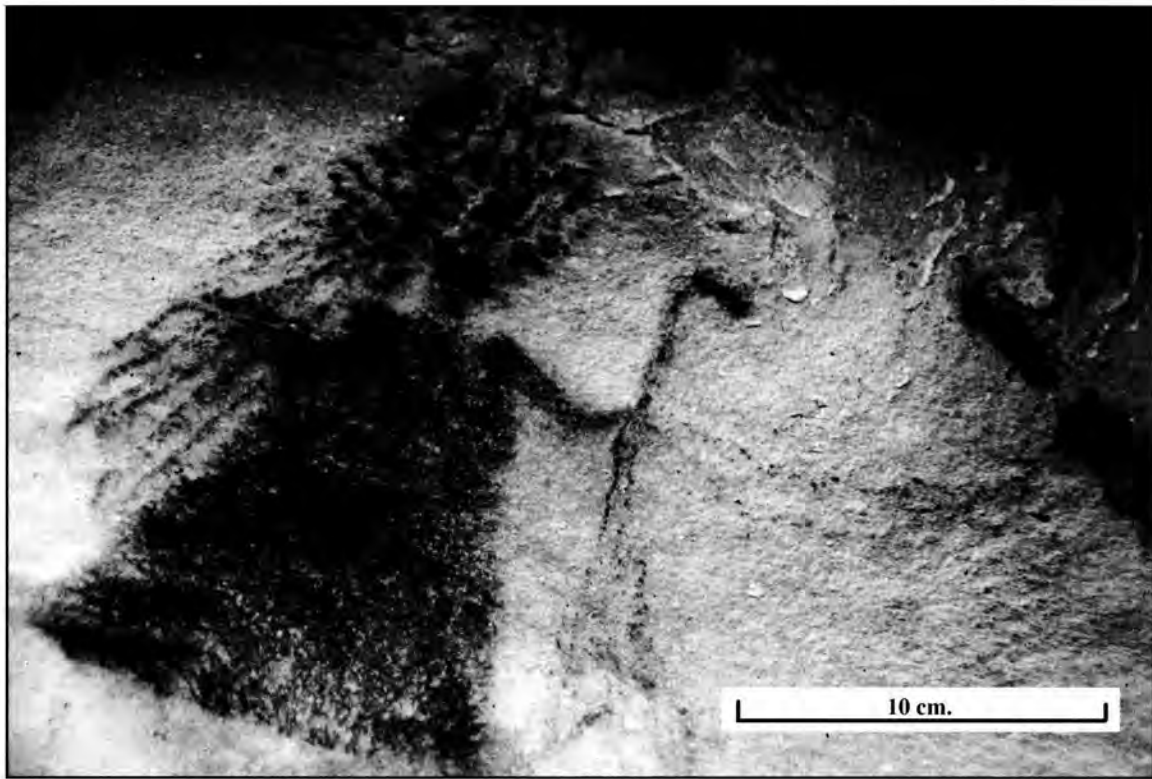


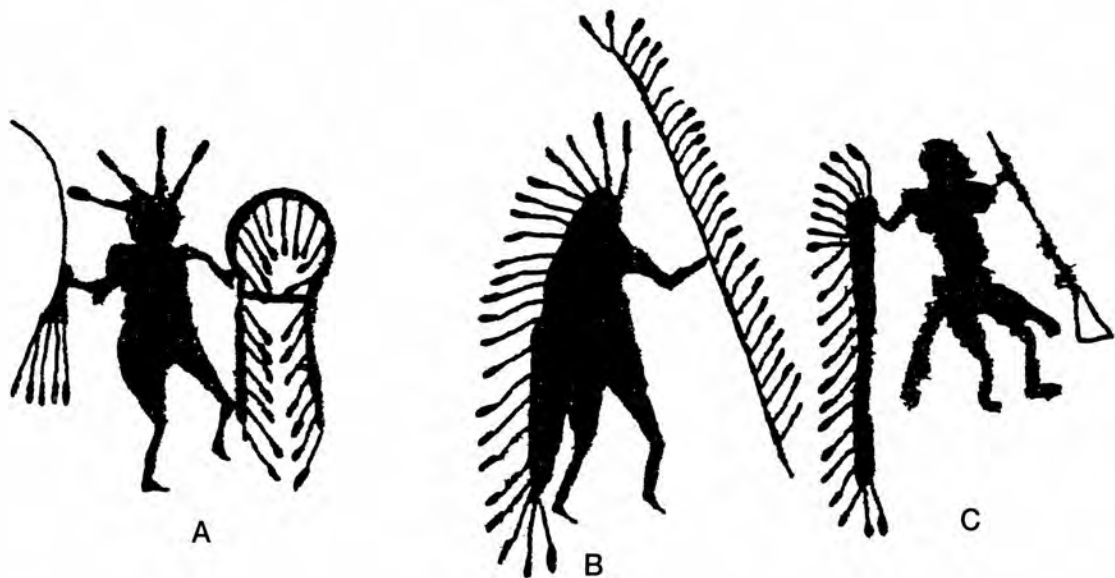
Figure 10. A red-painted pictograph in Panel A.



(Figure 10). Drawing of the red-pictograph (above) in Panel A.



Figure 11. Three associated anthropomorphic figures in Panel B. Each figure consists of red-painted areas with incised-line accents.



(Figure 11). Drawing of pictograph (above) showing associated anthropomorphic figures in Panel B.

Figure 12. An anthropomorphic figure in Panel B depicted holding a saber and rifle.

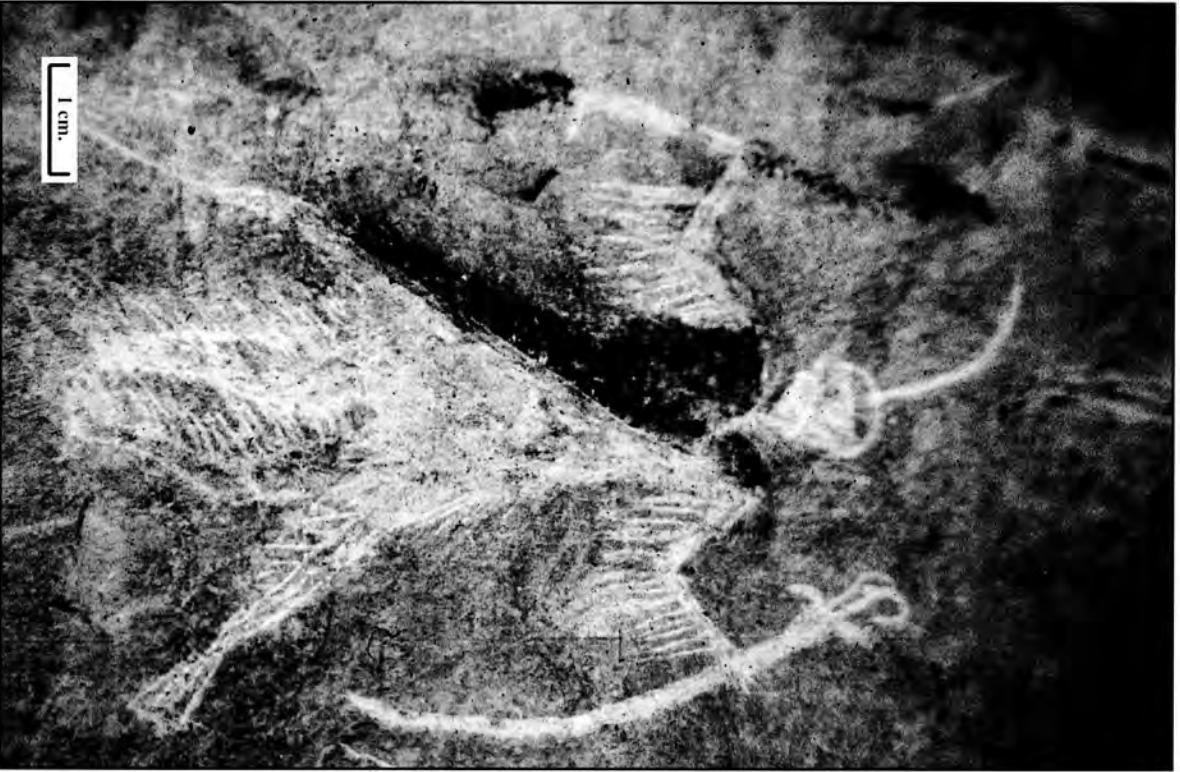


Figure 13. An anthropomorphic figure in Panel B depicted with a long, braided hair style.



from the head, fringed sleeves and leggings, and attired in a breechcloth. The individual seems to have several cross-hatched lines and a circle in the chest area. A noticeable difference between the two images is that the second described has two long hair braids (?) along the left side of the body that extend downward to the feet.

DISCUSSION

Of the rock art sites found in the Lower Pecos River region, petroglyph sites are rare (Labadie 1991). A unique aspect of the El Caido site is that there are both petroglyphs and pictographs in addition to depictions that combine both techniques into a single image. Red is the primary color followed by yellow which is used in at least three images; black is totally absent. Most of the colored pigment appears to have been in a non-liquid state when applied. Primary outlines and sharp lines appear to have been softened and solid-color areas appear to have been smudged by a tortillion or a finger to produce a uniform distribution of color in many of the pictographs.

There are distinct differences between Panels A and B in terms of size, subject matter, and technical execution. Panel A (Figure 3) focuses on Native American warriors, astride powerful mounts with both humans and horses displaying conspicuous symbols of individual achievements in warfare. Panel B (Figure 4) consists almost entirely of small (10 cm or less) petroglyphs with red-painted accents. Absent are depictions of horse-mounted warriors; rather, there are depictions of tepees, individuals attired in (traditional) breechcloths, and several figures with feathered headdresses and lance (symbols of group identity and solidarity). It seems safe to interpret these differences as an indication that the two panels were created by two different people perhaps representing two different groups.

The amount of time it would have taken to produce these images varies greatly. There are images with precise details that would have taken considerable time to execute while others seem to have been hastily prepared. Several of the more complex figures seem to have been outlined in red pigment first, after which, specific details, accents, and lines were incised through, and adjacent to, colored surfaces.

There are numerous depictions among both panels that clearly indicate a Northwestern Plains influence in

these images: feather and horn headdresses, decorated bridles, be-ribboned shields, feathered lances, individuals wearing fringed leggings and shirts, and braided hairstyles on both riders and horses. Given the level of detail in some images, there is obviously more information about the people and their culture depicted in the images that can be readily understood today.

SUMMARY

The rock art images at the El Caido site show no clear iconographic similarities to any of the documented Spanish Colonial period sites in the Lower Pecos or Trans Pecos region. Rather, the images clearly point to a Northwestern Plains influence which date to sometime near the close of the 19th century. The majority of the pictographs at the El Caido site fall securely within a stylistic grouping known as the Late Northwestern Plains Biography style (Keyser 1987).

The pictographs and petroglyphs at the El Caido site offer several clear insights into some aspects of the material culture of the Plains groups that once traversed the region. The precisely executed feathered lance and detailed feathered headdress are common symbols for power and authority which collectively serve to bind together lineally descended groups under a common cultural group identity. The conspicuous public display of individual achievement and social ranking earned in raiding and warfare is evident in the red-painted shield with streamers, the decorated bridle, and braided tails on the horses. The tradition of warriors wearing long, decorated or braided hair, common among many Plains groups, is evident in several pictographs. Traditional pre-European lifeways, such as the breechcloth, the bow-and-arrow and tepees, are evident in the panels and serve to identify the cultural values of certain individuals while others are singled out by depictions of non-traditional weaponry such as sabers and rifles.

The red-painted image of the mounted horseman with the long, decorated hair braid in Panel A (Figure 7) is of extreme importance when speculating about who painted these images (and when were they done). If Turpin is right (that the central "hero" figure at 41VV327 [Figure 2], found also among the pictographs at Arroyo de los Indios, commemorates the exploits of a Native American participant in an 1873

skirmish with the U.S. Army), then a portion of the El Caido site might be similarly linked to that skirmish near the Devils River that involved a combined group of Comanche and Kiowa.

Who this depiction actually represents will probably never be known, but if these images depict the same individual then this warrior's exploits in combat propelled him to culture hero status, immortalized at three sacred sites scattered throughout the region that may have brought him his fame.

ACKNOWLEDGMENTS

Archaeological field work is rarely a solitary activity. This article was written by Joe and Kathy Labadie and illustrated by Terry Sayther and his wife Deborah Stuart. First and foremost, we would like to thank the unnamed Mexican ranch owner who accompanied us

to the El Caido site and was a most gracious host to us during our trip. Kathy Labadie brought this site to our attention through her friendship with a fellow student (and wife of the ranch owner) and made the logistical arrangement for the three-day trip. Kathy was actually the first to write about the El Caido site in a term paper for an Anthropology class she was attending at Southwest Texas Junior College in Del Rio in the Spring of 1996. Terry, Deborah, and Duncan Sayther got the crew to the site by skillfully piloting their 4-wheel drive suburban nearly six hours out of Ciudad Acuña along indescribable roads and across foreboding drainages. Terry Sayther's extensive background in caving and the documentation of rock art throughout Coahuila and northern Mexico for the past 20 years was an essential ingredient to the success of this project.

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A ROCK ALIGNMENT AT AL PUNTO FINAL— AN ARCHAIC SITE IN TAMAULIPAS, MEXICO

James B. Boyd

ABSTRACT

A curious alignment of sandstone rocks in an occupation site with a rich Archaic period component is reported. The rock alignment and the site where it is located is described. Artifacts recovered in the site are also described.

THE SITE

The site, known as Al Punto Final, is located on the Rio Salado, in Tamaulipas, Mexico. The Rio Salado originates in the state of Coahuila, Mexico, and flows generally southeastward through the state of Nuevo León and into Tamaulipas. The river eventually merges with the Rio Grande in the area of Falcon Reservoir just west of Zapata, Texas.

The site being discussed is located on the south bank of the Rio Salado, and was discovered by the author on September 27, 1987. Several return trips

were made, and on September 30, 1990 the rock alignment was discovered in a remote section of the site.

The site was designated Al Punto Final ("The Final Point") by the author in 1987. The name derives from the fact that the site is located on a remote and inaccessible section of the river. Access was gained by a long, exploratory boat trip up the river from Zapata, Texas. This is possible only when the water level of Falcon Reservoir is at, or very near, the conservation pool elevation, which is 301.2 feet above mean sea level (I.B.W.C. 1975). When the lake is full its waters back up the Rio Salado for a distance of several miles, allowing those who are bold enough to venture well up the river. Such trips are hazardous, due to existing river conditions and other factors. In the area of the site, however, the elevation of the riverbed, which gradually increases as one travels upstream, becomes equal to the conservation pool elevation of Falcon Reservoir. In addition, in this



Figure 1. Eroded bedrock formation in riverbed of Rio Salado, below the eastern edge of Al Punto Final. View is downriver (east). Photo taken on December 30, 1989.

section of the river is a sandstone bedrock formation (see Figure 1) which, in combination with the equalization of riverbed elevation and pool elevation of the reservoir, effectively prevents further navigation of the river. Therefore, when Falcon Reservoir is full and backs up the Rio Salado, Al Punto Final is as far upstream as can be navigated. This is approximately 26 kilometers west-southwest of Zapata, Texas (see Figure 2). Mexican Highway 2 runs north to south about nine kilometers east of the site.

The site consists of an occupation zone covering many acres. Very large amounts of burned (sandstone) rock is visible on the surface, and more is actively eroding out of the deposits. Tremendous quantities of chert flakes litter the surface, and severe deflation of large portions of the site has occurred. Severe erosion, caused by infrequent rainfall on this bleak and barren terrain, has created a surrealistic landscape which is common in the area in general. River mussel and snail shells abound throughout the site.



Figure 2. Area referred to in text. Note Falcon Reservoir and the location of the Rio Salado. The location of Al Punto Final is shown.

Eight trips to the site have been made by the author since its discovery. A significant number and variety of artifacts have been collected. Recovered artifacts are projectile points, including large numbers of dart points and a few arrow points, as well as various styles of stone tools and blanks and other assorted artifacts.

ARTIFACTS COLLECTED IN THE SITE

Arrow points. Nine arrow point specimens were recovered. Five are complete specimens, and are represented by one Caracara, one Caracara-like specimen with a pronounced concave base, one single-notched specimen (Caracara?), one "rabbit-eared" Starr-like specimen, and one unnotched arrow point preform. The four fragmentary arrow point specimens are represented by two Caracara, one Fresno proximal fragment, and one Perdiz proximal fragment. All of the recovered specimens were found in the site's central areas, on the Rio Salado's south bank.

Dart points. Large numbers of dart points were collected. A significant number of these were broken, unstemmed specimens, and specific data was not recorded. However, data regarding complete unstemmed dart points, stemmed points, and broken stemmed specimens was recorded. Sixty-eight complete dart points were recovered. Fifty-nine of these are unstemmed, and are represented by three Abasolo, seven Catan, one Early Triangular, 29 Matamoros, three Pandora, one Refugio, 13 Tortugas, one unclassified type, and one unstemmed specimen which appears to be the reworked (broken off) stem of an Andice point (Dr. Thomas R. Hester and Dr. Michael Collins, TARL, personal communication 1995; Hester 1995: 438). Nine specimens are of the stemmed variety, and are represented by two Ensor, three Shumla, one contracting-stemmed, one contracting-stemmed blank or preform, and two straight-stemmed. Additionally, six broken stemmed dart points were collected. Two of these are of the Shumla variety, one Ensor, one Langtry, one Palmillas, and one contracting-stemmed.

Stone tools. A large number of stone tools and/or blanks was collected. Detailed notes regarding most of them were not made. Only eight small, well-worked stone tools were collected. One specimen is a drill,

five are small bifacial scraper-like items, and two are triangular, bifacial specimens. The larger of these appears to be a knife, while the smaller may be a triangular dart point (preform) in its final stages of manufacture.

Other artifacts. A single-hole marine shell pendant was recovered in the site. A metate was also recovered, as were three sandstone pipe fragments. All of these were recovered in the site's central areas, in the same area where all of the arrow point specimens were collected.

THE ROCK ALIGNMENT

The rock alignment is located on the south bank of the Rio Salado, in the western fringes of Al Punto Final. This area of the site is dominated by a series of large washes which are rich in (deflated) artifactual debitage, including massive amounts of burned sandstone. No arrow point specimens were collected in this portion of the site. Projectile points collected here include a few of the stemmed dart points and significant numbers of the unstemmed specimens. The richest areas of this part of the site are located along the edges of the washes, and on low terraces situated a few feet above a central, bowl-shaped drainage area. The floor of this drainage area, which is several acres in size, is where the rock alignment is located. It is notable that nothing of modern influence is present in this area, which, as mentioned earlier, is in a very remote area.

The rock alignment is composed of several large sandstone rocks which have obviously been deliberately placed in a line (see Figures 3 and 4). The primary feature is formed by the placement of six large stones, which are oriented generally east to west. These stones are located at the crest of a small mound or rise, which itself is composed of soil similar to that of the surrounding flats (see Figure 4). On the north side of the alignment there is an inordinately large number of smaller sandstone rocks as well as chert cobbles (see Figure 3). The presence of this type or this quantity of stones in immediate proximity to the alignment is aberrant to the surrounding surface, indicating possible deliberate placement of them. Additionally, on the south side of the feature (see Figure 4) there are a large number of chert cobbles which have the appearance of having slid or eroded down the inclined surface in a

direction away from the alignment. The question is raised whether the alignment possibly marks a burial, and the other stones which are adjacent to the feature may have been deliberately placed there to cover the burial. At the present time this question remains unanswered.

Specific notes regarding the rock alignment were not made when it was discovered by the author in 1990, nor on subsequent visits. However, the length of the primary feature is just over four feet. A further detailed survey of the site and feature in the near future is recommended.

No other similar features have been noted by the author in numerous other sites he has explored in the general area over a period of many years. However, a burial was discovered in a nearby site which was covered with flat, sandstone slabs (Boyd n.d.). This burial, which was located at the edge of a steep wash, exhibited skeletal material which was visibly jutting from the side of the wash, as well as other skeletal remains which had already eroded out and washed down the slope. Several flat sandstone slabs remained placed over the burial at the top of the wash, while a few of the slabs had slid down the slope due to erosional forces. Another burial discovered by the author at a shoreline site at Falcon Reservoir in 1995 was also covered by several large sandstone rocks (Boyd n.d.), similar in size and shape to those composing the rock alignment being discussed. Davis (1994:27-29) reports a cairn of sandstone rocks at 41SR207, a site in northwestern Starr County, Texas. Although it is not certain, it is believed that the cairn may cover a burial (ibid.:29; Michael W. Davis, personal communication 1996). Two additional cairns consisting of similar sandstone rocks were recorded at Falcon Reservoir shoreline sites in Zapata County during a survey in August 1996 (Dr. Thomas R. Hester, TARK, personal communication 1996). One of the cairns was discovered by Dr. Hester, while the other was recorded by Timothy Perttula formerly of the Texas Historical Commission. These cairns were not disturbed, and it can only be assumed that they might cover burials.

CONCLUSION

The purpose of this paper is to report a rock alignment which was discovered by the author in a



Figure 3. The rock alignment. View is toward the east. Note the accumulation of sandstone and chert cobbles to the north (left).



Figure 4. The alignment, view north. Note the slight rise on which the feature is located, and the chert cobble accumulation.

remote site in northeastern Tamaulipas, Mexico. The site area in general has yielded artifacts ranging in age from the Early Archaic to the Late Prehistoric periods. However, detailed records maintained by the author regarding the distribution of collected artifacts indicates the specific portion of the site where the rock alignment is located contains artifacts primarily dating from the Archaic period. It is presumed that the feature is related to its surroundings—i.e., it is not of modern origin, given its remoteness. The purpose of the alignment is unknown, but its possible significance as a burial marker is proposed. Two other known cairn burials and three additional possible cairn burials are mentioned briefly, and although no rock alignment feature was present at any of them, the similarities can be compared and contrasted.

ACKNOWLEDGMENTS

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RECENT PUBLICATION



NEW EDITION OF *FIELD METHODS IN ARCHAEOLOGY*

The 7th edition of *Field Methods in Archaeology* is available through Mayfield Publishing Co. Edited by Thomas R. Hester, Harry J. Shafer and Kenneth L. Feder, this wholly revised and updated guide totals near 400 pages and has over 250 illustrations. Chapters include goals of archaeology, research design and sampling, site survey, methods of excavation, data recording and collecting, field conservation of artifacts, field photography, site mapping and surveying, stratigraphy, excavation and analysis of human remains, excavation and recovery of paleobotanical materials, archaeological faunal recovery and analysis, and chronological methods. Contributing authors from the Texas area in addition to Hester and Shafer include R. E. W. Adams, Fred Valdez, Joe Powell, Gentry Steele, Mike Collins, Barry Baker and Brian Shaffer. Paperback: \$39.95. Mayfield Publishing, 1280 Villa St., Mountain View, CA 94041. Orders can be placed through bookstores or call 1-800-433-1279.

THE SOURCER'S APPRENTICE LOOKS AT CHERT AVAILABILITY

Kenneth M. Brown

ABSTRACT

In this short paper I evaluate bedload cherts, upland residual cherts, and bedrock ledge or nodule cherts in terms of availability and suitability for prehistoric knappers. I cobble together a few observations and conclude that archeology would be best served by fewer assumptions and more inquiry.

INTRODUCTION

In South or Central Texas, when cobble-strewn creek beds lie adjacent to prehistoric archeological sites, archeologists often assume the creek bed was the chert source supplying knappers at the site. Apparently they assume that since bedload chert cobbles can be found in the creek today, they must have always been available. I've heard such opinions expressed verbally and read them in print. Here I argue that sourcing of raw material should be based on close examination of the lithic debris itself, rather than on assumptions.

Bedload cherts are cobble or pebble-sized rounded chert clasts that are moved downstream as part of the stream's traction load. These clasts remain in the channel itself, for the most part. Only extreme floods are capable of lofting them off the channel bottom onto flood chutes or the adjacent floodplain. *Upland residual* cherts are chert nodules that have weathered out of bedrock through soil-forming processes. *Ledge* or *nodule* cherts are found in exposed bedrock faces, often split through along with enclosing limestone when talus blocks break away. "Fossil" bedload cherts, in the form of high terrace gravels, are often found on elevated terrain fringing large rivers. In much of East Texas, these terrace gravels are almost the sole source of knappable stone. In some cases, erosion may allow some of these ancient bedload cherts to reenter the stream channel and rejoin the bedload. All of these different kinds of chert have different knapping and procurement implications.

AVAILABILITY

It has been argued that alluvial deposits in Texas and the central and southern Plains have been characterized throughout the Holocene by long periods of floodplain deposition occasionally interrupted by fairly brief periods of floodplain stability (and soil formation) and/or erosion and removal of sediments. Actually, the jury probably is still out on this question (for an opposing viewpoint based on a much longer time scale, see Kraus and Bown 1986; see also Holliday 1985:Fig. 6). Plots of depositional mode versus time, such as those shown by Collins (1995: Table 2), Nordt (1992:Fig. 31), and Abrogast and Johnson (1994:Fig. 4) seem to support the idea of depositional dominance. At Fort Hood, for example Nordt (1992:77) estimates deposition prevailed during about 70% of the last 10,000 years. In contrast, rivers in Texas today nearly everywhere are in one of these geologically brief incisive phases and are cutting into their earlier Holocene deposits. In the Choke Canyon area, for example, before impoundment the contemporary underfit Frio River flowed in a narrow channel deeply inset into its own massive late-to-middle Holocene floodplain deposits. Smaller tributaries are graded to the downcutting channel. Under conditions like these, it is possible to find suitable bedload cherts, either in gravel bars in the main channel or in the beds of smaller tributaries. But we shouldn't project these conditions backward in time to the rest of the Holocene, because what we see today is probably not characteristic of many parts of the Holocene.

During periods of floodplain aggradation, bedload cherts were probably much less widespread or accessible—not because they were covered by sediment, since most deposition probably occurred on floodplains rather than in channels—but because floodplain aggradation tends to be associated with deeper, narrower channels, less seasonally variable baseflow levels, deeper water, and absence of the

flash floods needed to move large bedload cherts in the channel (see Schumm and Brakenridge 1987:Fig. 5). Erosive periods were probably associated with periodic large floods that redistributed gravel bars, and with frequent low-flow conditions that exposed the bars on a seasonal basis. We know that some parts of the Holocene (especially the early part of the Late Archaic) were more mesic, and periods like those might have restricted access to bedload cherts. Highly erosive periods like the early and middle Holocene were probably periods when these cherts were frequently available, just as they are today.

Unfortunately, even knowing these relationships doesn't help us predict the availability of bedload chert, because drainage systems are highly variable in both space and time (Collins 1995:380). Variations over time in discharge, seasonal distribution of discharge, and sediment yield can change the channel pattern over time or along the length of a stream. Many streams are characterized by episodic storage of sediment at intervals along the channel in point bars or side-attached bars. Bedload-dominated streams are characterized by low channel stability (Schumm and Brakenridge 1987:Fig. 1). Under conditions like these, gravel bars near any given occupation site could periodically become exposed or occluded according to the vagaries of depositional history.

There is spatial variability, as well, in the geologic and climatic conditions that promote the formation of coarse-grained bedload deposits. Bedrock-floored channels draining small catchments along the Balcones Escarpment, in a region prone to orographically-induced monsoon-like rainfall events, are conduits for catastrophic flooding and movement of very coarse-grained sediment loads (Baker 1977).

PHYSICAL PROPERTIES

Bedload cherts have several properties that make them less desirable as raw material. They tend to be much more spherical than residual or nodule cherts because constant abrasion knocks off projections. Spherical cobbles are difficult to decorticate, and tabular cherts are more suitable for producing large bifacial tools. Perhaps the most critical defect, though, is that because of bedload impact, many of these cobbles are "distressed," with hidden hairline fractures or unresolved impact cones (Fig. 1, B).

Anyone who has test-knapped bedload cobbles knows that they often shatter unexpectedly. The presence of "distressed" cobbles means that plenty of careful searching and testing is necessary to avoid material failure. On the other hand, bedload cherts do have a few advantages. They are often concentrated in extensive gravel bars, minimizing the knapper's search time. Unlike the upland cherts, thick chalky cortex is usually absent, which helps with the decortication process. And in some geologic settings (Hondo Creek in Medina County comes to mind), very large stream cobbles can even exceed the size of other locally available chert sources. If bedload cherts are present in archeological lithic debris, they may be identifiable when cortex-bearing debitage can be found. Glossy, thin cortex with impact crushing, step fracturing, or small incipient cones of percussion visible on the surface (Fig. 1, D) is diagnostic of either bedload or terrace gravel cherts [I'm not sure if this is what Abbott and Tomka (1995:681) mean by "cortex abrasion"]. If no primary flakes are present, the chert source is liable to be ambiguous. Bedload cherts probably cannot be distinguished from terrace gravels unless there are well-documented changes in the stream's transport capacity that are mirrored in the modal clast size.

I don't mean to suggest that bedload cherts were never used. On the contrary, when a handy source was present, cobble cherts were probably heavily exploited. In fact, they were preferred for some artifact types (Chandler and Marchbanks 1996). Mike Collins is of the opinion that fluvial battering actually selects for solid cherts by reducing the more brittle clasts to rubble, leaving mostly survivors without shock faults, and he says that he and other knappers prefer bedload cherts for this reason (Collins, personal communication, 1997). Perhaps a quantitative test is needed. A good project for some lithic technology class would be to divide a gravel bar into quadrats, select a random 10% sample, and test every chert cobble in the selected quadrats, recording the number with and without flaws. The same thing could be done for residual and bedrock cherts.

Upland residual cherts are eminently suitable for knapping, provided they are large enough and have not been subjected to thermal stress (forest fires or freeze-thaw cycles). The soft, chalky cortex is a disadvantage, but is usually not a major problem once an initial platform exposure is obtained. These

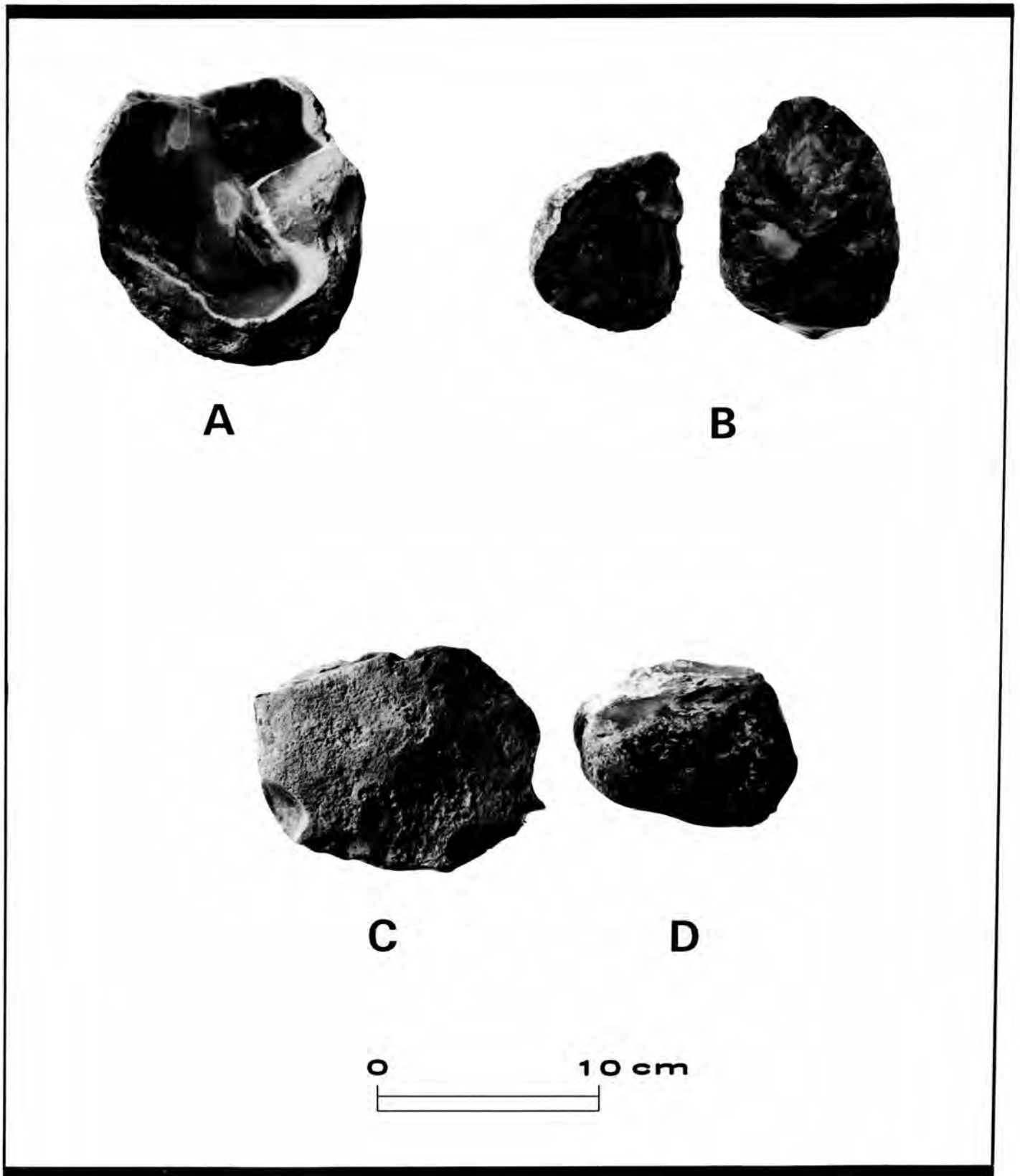


Figure 1. Bedload and Residual Cherts from Pedernales Falls State Park, Blanco County. A—interior of upland residual chert nodule; chert is variegated, but free from impact damage; B—Two halves of "distressed" chert cobble from channel of Pedernales River; note crumpled texture produced by many intersecting impact cones of percussion; C—rough, chalky cortex on surface of semi-flat upland residual chert nodule; note absence of battering; D—oblong chert cobble from channel, featuring a smooth, glossy surface with evidence of stream battering.

residual cherts lack impact features. They are much less aggregated than cherts found in stream gravel bars. Residual cherts can be identified by soft, chalky cortex, absence of impact features (Fig. 1, A, C), and possibly by tabular surfaces in large fragments. Ledge or nodule cherts either weather out or are actively quarried from rock faces by prehistoric knappers. I have seen some Lower Pecos shelters where most of the visible seam chert has long since been quarried away. Because most of these cherts have been directly exposed to weathering for geologically long periods of time, they may be jointed, flawed, and perhaps dewatered. It is not uncommon to see vertical joint faces in exposed seam chert like this. These defects, plus the difficulty of mining, seem to me to make ledge chert less desirable. Cortex is similar to that of upland residual chert, so ledge chert appearing in debitage might be difficult to separate from these residual cherts unless jointed and faceted debris is present.

CONCLUSIONS

Where possible, archeologists should examine their lithic debris for cortex patches that might identify chert sources. Mike Collins has done this at the Wilson-Leonard site, where he estimates that over the entire occupation span of the site, nodular cherts were preferred, followed by upland residual cherts, with bedload cherts a very minor third choice (personal communication, 1996). Unfortunately, most debitage collections don't have enough primary or secondary flakes to give us a good picture of chert sources. Perhaps more intensive work on chert

sourcing has been done at Fort Hood than anywhere else in Texas; here alluvial chert collected from Cowhouse Creek was a minor component of the assemblage at best (though better represented by tools than debitage); some may also have come from tributaries (Abbott and Tomka 1995:706).

Arenosa Shelter is another site where Collins has looked intensively at chert sourcing. There, he found that bedload cherts were preferred, accounting for 90-100% of chipped stone in most strata, but during three periods in the history of the site, other sources (chert nodules from the Salmon Peak limestone and relict, high terrace gravels) were used. In general, these alternate sources were used when rates of deposition at the site were low and alluvium probably choked the confined canyon, perhaps covering most of the bedload cherts. Collins suggests that "access to sources of chippable stone along the major rivers was dependent on sufficiently high energy flooding to uncover and rework the host gravels. At times when such flooding did not occur, it was necessary to augment chert supplies with inferior or embedded material from upland sources" (Collins 1974:401).

In any case, we shouldn't assume that bedload cherts visible today near the sites we find have always been accessible, or even present. In lithic sourcing, as in most other aspects of archeology, inquiry is better than supposition.

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Chris Ringstaff provided the chert samples used to illustrate this paper. Mike Collins commented on earlier drafts.

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MISSION SAN JUAN CAPISTRANO, California, has made the news for something other than the swallows that return there each year. This time we read in an Associated Press newspaper article dated July 25 that the interior of the Great Stone Church is made of volcanic tuff and not sandstone. Moreover, its interior walls were painted with brightly-pigmented lime washes which, according to Frank Matero, director of the Architectural Conservation Laboratory at the University of Pennsylvania, represented a "subtle palette of pinks, whites and turquoise."

The so-called Great Stone Church was begun in 1797, finished in 1806, and destroyed in an earthquake in 1812, one that killed forty people attending services.

"The stone is so soft it can be carved with a penknife, and it's very lightweight so it can be hoisted up," said Matero, a team leader on one part of a \$2 million, 10-year restoration project.

"Matero said the group is coming up with new information on how to preserve sandstone, tuff and old plaster and is experimenting with epoxies and other binders to find the best material for saving the ruins.

"Matero said there was evidence Indian craftsmen helped finish the church after Spanish master mason Isidro Aguilar died. Their lack of experience may have contributed to the collapse, the archaeologist said." BLF

FOLSOM POINTS FROM LLANO AND MIDLAND COUNTIES, TEXAS

C. K. Chandler

ABSTRACT

This paper illustrates and documents four previously unrecorded Folsom points and one Midland point. One is from Llano County in the Edwards Plateau area of Central Texas. The other three Folsom and the Midland point are from Midland County in the Lower Plains area of West Texas.

DISCUSSION

The 1991 report of the distribution of Folsom points in Texas documented 329 Folsom points from 86 localities in 57 of the 254 counties in Texas (Largent et al. 1991). Seven Folsom points and eight preforms have been documented from the Scharbauer Site in Midland County (Wendorf et al. 1955). None were reported from Llano County. Since Largent's 1991 report additional Folsom have been documented and published; many of these in *La Tierra* (Chandler 1990; Smith and Garrett 1992; Chandler and Kumpe 1994; Chandler and Smith 1994; Chandler and Hinds 1995). Largent has updated his data base for Folsom points and he now reports 345 Folsom from 102 localities in 63 Texas counties (Largent 1995).

DESCRIPTION OF THE ARTIFACTS

Figure 1 illustrates these four Folsom points and one fragmentary Midland point with actual size drawings by Richard McReynolds.

Figure 1, A, A' is a complete Folsom point made of tannish yellow, good quality chert having a glossy finish and waxy feel that indicates it has been heat treated. It is 36 mm long with a maximum width of 18.4 mm at 17 mm above the basal corners. Width at the base is 18 mm. It has a maximum thickness of 3.4 mm at mid-length outside the fluted area and is 2.8 mm thick in the fluted area. Flaking is fine, narrow and slightly oblique. The flute on the reverse is 31 mm long and 10 mm wide. The basal nipple is mostly intact. It is without patina. The shallow basal concavity on each side of the basal nipple is 2 mm. It weighs

3 grams. This specimen is from Tow Valley on the west side of the north end of Buchanan Lake in north Llano County.

Figure 1, B, B' is a complete Folsom point made of pale, nearly translucent, chalcedony. All surfaces have a light gray (nearly white) patina.

Dimensions are 29.3 mm in length, 22 mm wide at the center and 20 mm wide at the base. Basal concavity is 3.3 mm. It is 2.7 mm thick at 5 mm below the distal tip. It is 2 mm thick in the fluted area. The basal nipple is missing. There is a single flute on each face. The obverse flute is 20 mm long and 16 mm wide. The reverse flute is 21 mm long and 14 mm wide. It weighs 2.2 grams.

This specimen is a surface find from the sand hills of Midland County.

Figure 1, C, C' is a complete Folsom point made of medium quality light tan chert with a thin white patina. Flaking is irregular. Dimensions are 28.9 mm in length, 15.9 mm wide near the center with a base width of 15 mm. It is 3.6 mm thick at 14 mm above the base. It is fluted on the obverse face only. This flute scar is 22 mm long and 9 mm wide. The reverse has a large diagonal flake scar that originates from the lower left corner of the artifact. This scar is believed to have been present on the parent flake when it was discharged from the core. This area of the artifact is 2.4 mm thick



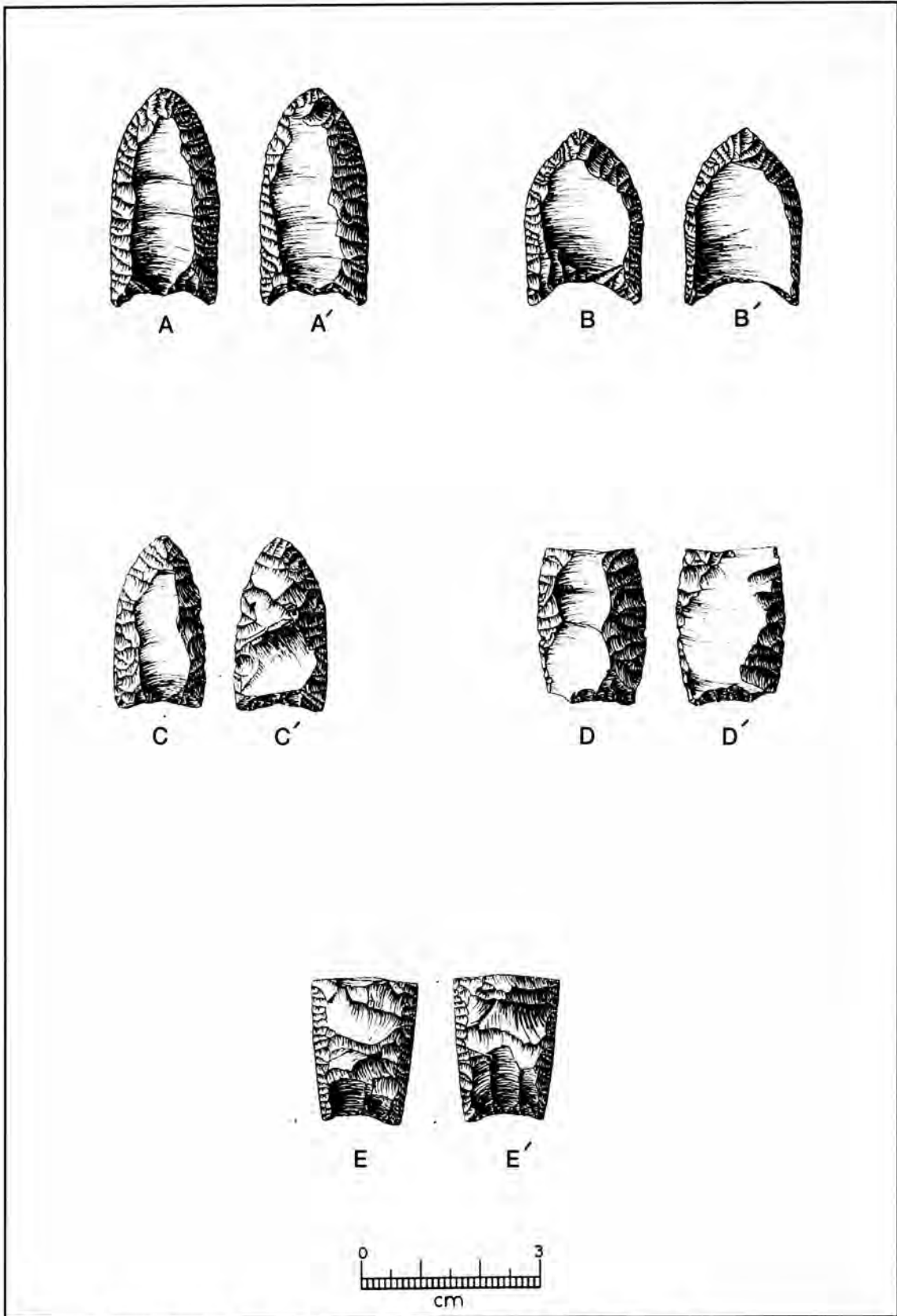


Figure 1. Folsom and Midland points from Llano and Midland Counties.

and may have been too thin to remove a flute on this face after the removal of the obverse flute. This scar is 15 mm long and 14 mm wide. The basal nipple is missing and there is a basal concavity of 1.2 mm. It weighs 2.0 grams.

This specimen is a surface find from the sand dune area of Midland County.

Figure 1, D, D' is a nearly complete Folsom point made of medium quality tan chert that is without patina. The distal end is broken and one basal corner is broken. Its present dimensions are 25.8 mm in length, 18.3 mm in width and 3.3 mm thick at 21 mm above the base. It is 2.4 mm thick in the fluted area. It has a shallow basal concavity of 0.5 mm. It weighs 2.2 grams. Flaking is irregular and it is fluted on the obverse only. This flute extends beyond the distal end break. It is 9 mm wide. The reverse face was totally unifacial as the parent flake scar that originated at the distal end. Both edges of this side have been minimally retouched.

This specimen is a surface find from the sand dune area of Midland County.

Figure 1, E, E' is a basal fragment of a Midland point made of a light tan excellent quality chert with the beginning of a faint white patina on one face. It is thinned with vertical thinning flakes from both faces as well as lateral thinning flakes from both faces. Edges are finely trimmed with parallel retouch averaging eight to nine scars per centimeter. It strongly resembles Folsom but is without fluting. Edges are heavily ground full length and base is lightly ground. This fragment is 25 mm in length, 18 mm in width at the break and 3 mm thick at the break. Base width is 14.7 mm. Basal concavity is 1.2 mm. Weight is 2.1 grams.

This specimen is a surface find from the sand dune area of Midland County.

ACKNOWLEDGMENTS

I extend my sincere appreciation to Michael Redwine for the loan of these five artifacts for study and documentation, and to Richard McReynolds who prepared the illustrations.

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A COMPLETE FOLSOM POINT FROM WILSON COUNTY, SOUTH TEXAS

C. K. Chandler

ABSTRACT

A complete Folsom point from north Wilson County is reported and illustrated. Only one Folsom point has been previously reported from this county.

THE ARTIFACT

This specimen, Figure 1, is illustrated with line drawings by Richard McReynolds. It is of very light tan, good quality, Edwards Plateau chert (M. Collins, personal communication 1996). The distal tip has been broken and replaced. It is 57.2 mm in length, 22 mm wide at 22 mm above the basal corner, with a maximum thickness of 5.4 mm at 30 mm above the base. The base width is 18.8 mm with a basal concavity of 6.4 mm beside the basal nipple. There is a single long flute on each face. The obverse flute is 43 mm long by 13 mm wide; the reverse flute is 26 mm long by 11 mm wide. There are prominent ripples on the obverse flute and those on the reverse flute are more smooth. Lateral edges are heavily ground, 46 and 41 mm. The distal tip is also heavily ground. A portion of the basal nipple survives. It weighs 8.0 grams.

This Folsom is a surface find from a plowed field in northern Wilson County near La Vernia. Only one Folsom is previously reported for Wilson County (Kelly 1990). It, too, is from the La Vernia area.

Several Folsom points have been reported from adjoining counties. One from southeast Bexar County near the Wilson County line is not far from La Vernia (Chandler 1990). Most Folsom points are individual finds. However, two sites in south central Texas have each yielded several Folsom points. Site 41BX52 in northwest San Antonio yielded seven Folsom (Henderson 1980) and Kincaid Rockshelter in Uvalde County had five Folsom (Collins 1990). Chandler and Hindes (1995) have reported ten Folsom points: six are from Atascosa County, two from Live Oak County, one from Frio and one from McMullen County.

Folsom points are also known as far south in Texas



Figure 1. A Complete Folsom Point from Northern Wilson County.

as the Lower Rio Grande (Chandler and Kumpe 1994) and an unpublished complete Folsom from the Tamaulipas side of the Rio Grande has been documented.



A statewide survey for Folsom points was conducted in 1991 by Largent, Waters and Carlson. They documented 329 Folsom points from 57 counties. This database was updated in 1995 (Largent) with 345 Folsoms reported from 63 counties.

Most of the Folsom points published in *La Tierra* have been reported to Largent, but some were too late to be included in his survey report in 1995. This growing database for Folsom point distribution and occurrence will aid future researchers to a better under-

standing of the Folsom occupation of Texas and the Plains (Largent 1995).

ACKNOWLEDGMENTS

I extend my sincere thanks to the finder and owner of this artifact for its loan for documentation and illustration, and to Richard McReynolds who did the drawings. His illustrations materially add to any report.

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IRON AGE SKELETONS FOUND

A rare, exceptionally well-preserved example of Iron Age burial practices has been found in a cave in southwestern France—22 skeletons, some still decked out in their funeral finery.

The cave, composed of two galleries and a well, dates to about 600 B.C. It was discovered by amateur speleologists in February 1994 but the Culture Ministry held off announcing the find until the cave could be sealed from the public. Experts said the discovery was significant because cremations, not burial, was the usual form of disposing of the dead during the Iron Age.

From
The Houston Chronicle

ORNAMENTAL ARTIFACTS FROM THE CARDINAL SITE, RIO SALADO, TAMAULIPAS, MEXICO

James Bryan Boyd

ABSTRACT

Two ornamental artifacts collected in an occupation site located on the Rio Salado in northern Tamaulipas, Mexico are reported. The artifacts are described in detail and a general description of the site and other artifacts collected there is given.

THE SITE

The site where the artifacts were found is located on the north bank of the Rio Salado, approximately 24 kilometers southwest of Zapata, Texas. The site was discovered by the author in November 1987 during an exploratory boat trip up the river. Such

ventures are possible only when Falcon Reservoir is nearly full, and its waters back up the Rio Salado for many miles. The Rio Salado is a major tributary in this portion of northeastern Mexico, and archaeological sites abound in proximity to the river. Figure 1 illustrates the area and the site being discussed.

The site was named the Cardinal Site by the author due to a bird of that species which was observed there during the initial visit. The Cardinal Site is located along both banks of a large *arroyo* which runs into the river from the north. An area several acres in size in the vicinity of this *arroyo* has been severely eroded, causing archaeological deposits there to become deflated (see Figure 2). Ground surface visibility is excellent and there is no grass cover. Consequently, artifacts are exposed at the surface following infrequent heavy rainfall in the area.

The site begins on a series of high bluffs located near the junction of the river with the *arroyo*. These bluffs are littered with thousands of chert flakes and scattered burned rock. A moderate amount of freshwater mussel shells are also visible, scattered along the bluffs. The area defined as the Cardinal Site extends generally northward for a distance of approximately 600 meters. This site is approximately 400 meters in width (east to west).

The Cardinal Site most probably represents an area which was occupied repeatedly over a long period of time, rather than one large, continuously occupied campsite. This is evidenced by the large areal extent of the site, as well as the nature and the horizontal distributional patterns of artifacts collected there. The central areas of the Cardinal Site are notable for the extraordinarily large amounts of burned [sandstone] rock located there. Some intact hearths are visible in these areas. Chert flakes and tested cobbles litter the surface, and snail shells are present in great numbers.

This site is located approximately 300 meters upstream from a low water crossing on the Rio Salado. The crossing is demarked by a sandstone ledge outcropping which would have afforded the



Figure 1. Area discussed in text. Falcon Reservoir is near the center of the map. Note the Rio Salado and the approximate location of the Cardinal Site.



Figure 2. Deflated deposits in central area of the Cardinal Site. View East. Photograph by the author.

former inhabitants of the region a convenient passage to the area on the south bank of the river. A mortar located in this sandstone formation was previously reported by the author (Boyd 1996:87-90). Access from the site to the river is most easily gained by walking down the dry arroyo bed to the point where it meets the river.

The area is uninhabited, and access to the site is possible only by river. However, the author believes that the site has been heavily relic-collected in the past.

ARTIFACTS COLLECTED IN THE SITE

In addition to the ornamental artifacts being reported numerous other classes of artifacts were collected in the site by the author during several visits made there. The most common artifact noted in the Cardinal Site is the projectile point. Dart points were far more prevalent than arrow points, and were found in all portions of the site. Arrow points were noted mainly on the high bluffs along the river, and in one small *atelier* ("workshop") in the site's central area, where numerous Clifton and Perdiz arrow points were found (Boyd n.d.,a). Other arrow point styles recovered in the site in general are Caracara, Starr, and Toyah. Dart point styles recovered include

Abasolo, Catan, Ensor, Refugio, Matamoros, and Tortugas. A single basally-notched dart point which resembles the Castroville style was also collected, but is probably not a Castroville (Dr. Thomas R. Hester, personal communication 1995). This style is probably a local type which has yet to be defined.

Other artifacts collected include various types of stone tools including a mano stone and a scribe. The remnants of a mud oven-like feature are visible in the site's central area. The feature is circular in outline and is approximately two meters in diameter. Remnant walls measuring approximately 0.5 meters in height are still standing along the feature's south side.

THE ORNAMENTS

Two artifacts of an ornamental nature were recovered from the surface of the site. One of the ornaments is made of marine shell, while the other is made of stone. Both appear to have originally served as pendants.

The shell pendant (Figure 3). This pendant is made of marine shell, apparently conch, and is ivory in color. It was found in the site's central areas, approximately 50-75 meters west of the Clifton/Perdiz *atelier* earlier referenced. This specimen measures

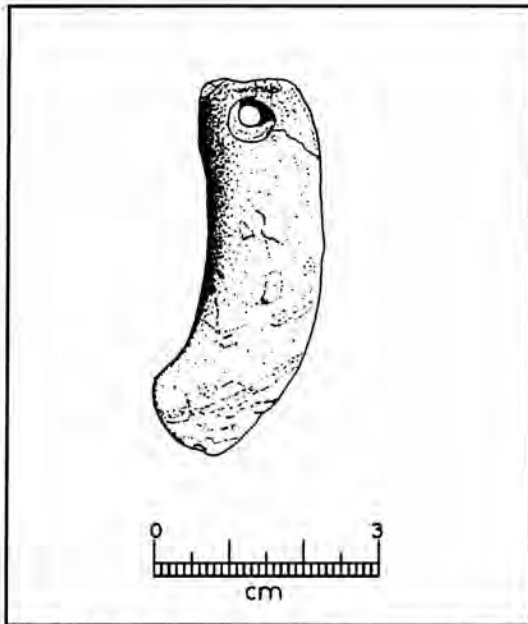


Figure 3. The marine shell pendant. Drawing by the author.

48.64 mm in length. Its maximum width is 15.20 mm, and its maximum thickness is 4.37 mm. There is a single biconically drilled hole near the top of the pendant. The width of the hole at the surface of the artifact measures 5.46 mm in diameter, while the actual perforation is only 2.72 mm in diameter. Marine shell pendants and beads are infrequently found in occupation sites in the area, but are often included as grave offerings with burials there (Boyd n.d., b).

The stone pendant (Figure 4) This fragmentary pendant is made of a light gray sandstone with small, crystalline inclusions. It was found on the high bluffs along the Rio Salado, near the site's southern edge. The pendant is wider near the top where one hole is complete and one is broken. The diameter of the specimen than gradually tapers, and the bottom portion is broken away. It is uncertain whether other holes were originally present on the opposite end of the artifact. The length of the surviving portion of the pendant is 32.89 mm, and the maximum width near the top is 27.25 mm. The maximum thickness of the artifact is 4.79 mm. The single complete hole measures 4.85 mm at the surface of the artifact, while the actual perforation measures only 3.07 mm in diameter. Two views of the artifact are illustrated in Figure

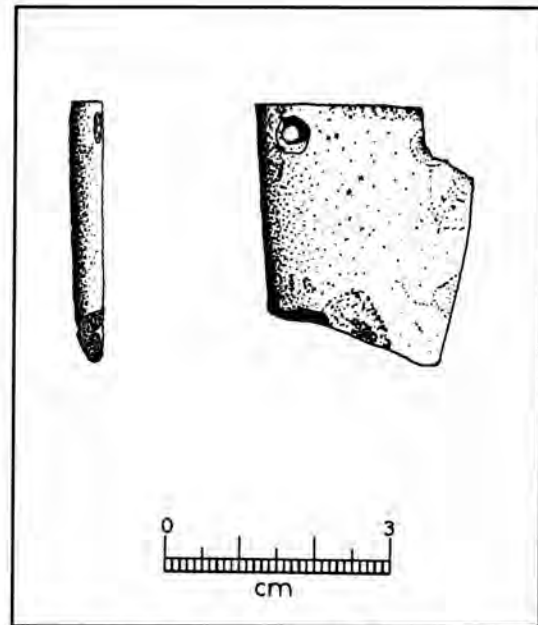


Figure 4. Two views of the sandstone pendant. Drawing by the author.

4. As in the case of marine shell ornamental artifacts, stone pendants are also infrequent finds in sites in South Texas and northeastern Mexico, and have yet to be noted in any burial salvaged in the region (Boyd n.d., b). A stone (limestone) pendant was salvaged on the U.S. side of Falcon Reservoir in 1952 (Cason 1952: 225 [Plate 30]), and numerous other ground stone ornaments collected in the region have been reported (Chandler and Kumpe 1994:28-33; Doug Bryan, Erick Kruger, Mike Ryan, and Jim and Cynthia Scott, personal communication 1983-present).

CONCLUSION

The Cardinal Site appears to have been utilized from the Archaic period through the Late Prehistoric period as evidenced by the collected projectile point types. No inference is made in regard to the antiquity of the recovered ornamental artifacts, as the integrity of any stratigraphic deposits which may have once been present has been severely deflated through extreme erosional processes. A comprehensive study of the sites in the region as well as their artifactual content, e.g. ornaments, etc., would further our understanding of this still remote and undeveloped area, and the peoples who once inhabited it.

ACKNOWLEDGMENTS

The author wishes to thank Dr. Thomas R. Hester, Director of the Texas Archeological Research Laboratory, The University of Texas at Austin, for

his continued invaluable assistance and helpful comments regarding the author's various archaeologically oriented projects, as well as providing unlimited source reference materials.

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TO YOUR HEALTH

The ancients, too, recognized the salutary effects of wine.

Noah, following the Flood, as the story is related in the Bible (*Genesis 8-9*), descended from the Ark on Mount Ararat (near the present borders of Turkey, Armenia, and Iran), on whose slopes he planted the first vineyard. He also drank his own wine—to excess, we are told. It is of some interest that the earliest archaeological evidence for wine-making is from the general region. An amphora dating to before 3000 B.C. from Godin Tepe in central western Iran was determined by chemical analysis of organic residues to have contained wine. Now we learn that grape presses dating to the late third millennium B.C. have been excavated at Titris Hoyuk in southeastern Turkey. That circular plaster basins found there were used for treading grapes was confirmed by analysis of residues found in the basins, according to Virginia R. Badler of the University of Toronto.

Archaeology Magazine

EARLY PALEO POINTS FROM THE FALCON LAKE AREA OF TAMAULIPAS, MEXICO AND SOUTH TEXAS

C. K. Chandler and Don Kumpe

ABSTRACT

Five fluted Clovis points and one Folsom point are illustrated and discussed. They are from the Falcon Lake area of the Lower Rio Grande in Tamaulipas, Mexico and South Texas.

INTRODUCTION

There are no Early Man projectile points of the Clovis or Folsom types reported by Epstein (1969) or MacNeish (1958) for their work done in Tamaulipas and Nuevo León, Mexico. The earliest Paleo points reported by Epstein (*ibid.*) were identified as Plainview. This classification was considered questionable and these were later identified as Golondrina.

A single Clovis basal fragment from the La Perdida Site in Starr County is reported by Frank Weir (1956:59-73). A large number and variety of lithic artifacts are reported from this site. They include the one Clovis, and other Paleo age projectiles of the Plainview, Meserve, and Scottsbluff types.

The only other Clovis documented from the counties along the Lower Rio Grande is the one from Cameron County included in Meltzer and Bever report (1995).

Folsom points are widely distributed in Texas (Largent et al. 1991) and they occur with much greater frequency than Clovis in the counties along the Lower Rio Grande. Folsom points are reported from all the Texas counties bordering the Rio Grande from the Pecos River to the Gulf, except Kinney and Cameron Counties (Chandler and Kumpe 1994; Largent 1995).

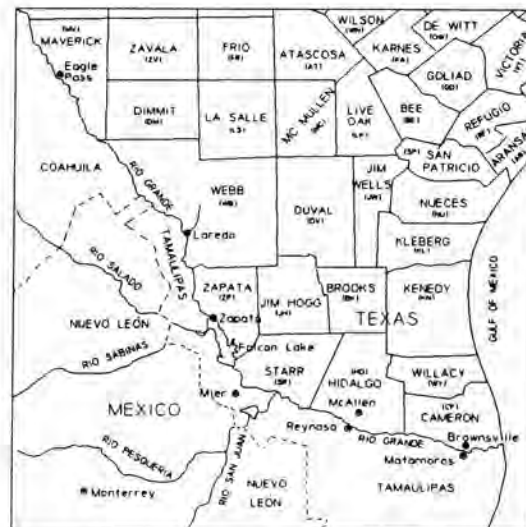
Figure 1, A, A', Specimen No. 386 is a complete but extensively reworked fluted Clovis point from near the town of Burgos, Tamaulipas south of the Rio Grande. It is made of dull ivory white chert of reasonably good quality. The blade is extensively reworked along both edges, apparently to restore a broken distal end. Just below the distal tip is an impact fracture on the obverse face. The reworking is mostly by deep, wide percussion flakes discharged from both

faces resulting in very irregular blade edges. Below this the lateral edges are parallel and heavily ground 25 and 28 mm. These basal edges are neatly parallel pressure flaked. The base is also ground.

Dimensions are 82 mm in length, with a maximum width of 26.6 mm at 25 mm above the base. Base width is 26 mm. Maximum thickness is 8.5 mm. Basal concavity is 3 mm. It weighs 25 grams.

The specimen is fluted on both faces. The obverse flute is 40 mm long with a maximum width of 16 mm. There is a second overlapping flute 20 mm long and 18 mm wide that includes two vertical thinning flakes. The single flute on the reverse is 37 mm long by 16 mm wide. This specimen appears to have been broken while in use and reworked while still hafted.

Figure 1, B, B', Specimen No. 501 is a near complete fluted Clovis point from Arroyo Morteros in Starr County near the town of Salineño. It is made of near translucent, pale blueish-white chalcedony having a glossy finish and waxy feel. The distal end is broken. Flaking is broad parallel to irregular. Lateral edges are near parallel to slightly convex and



South Texas and Northeastern Mexico showing area discussed in text. Note Falcon Lake.

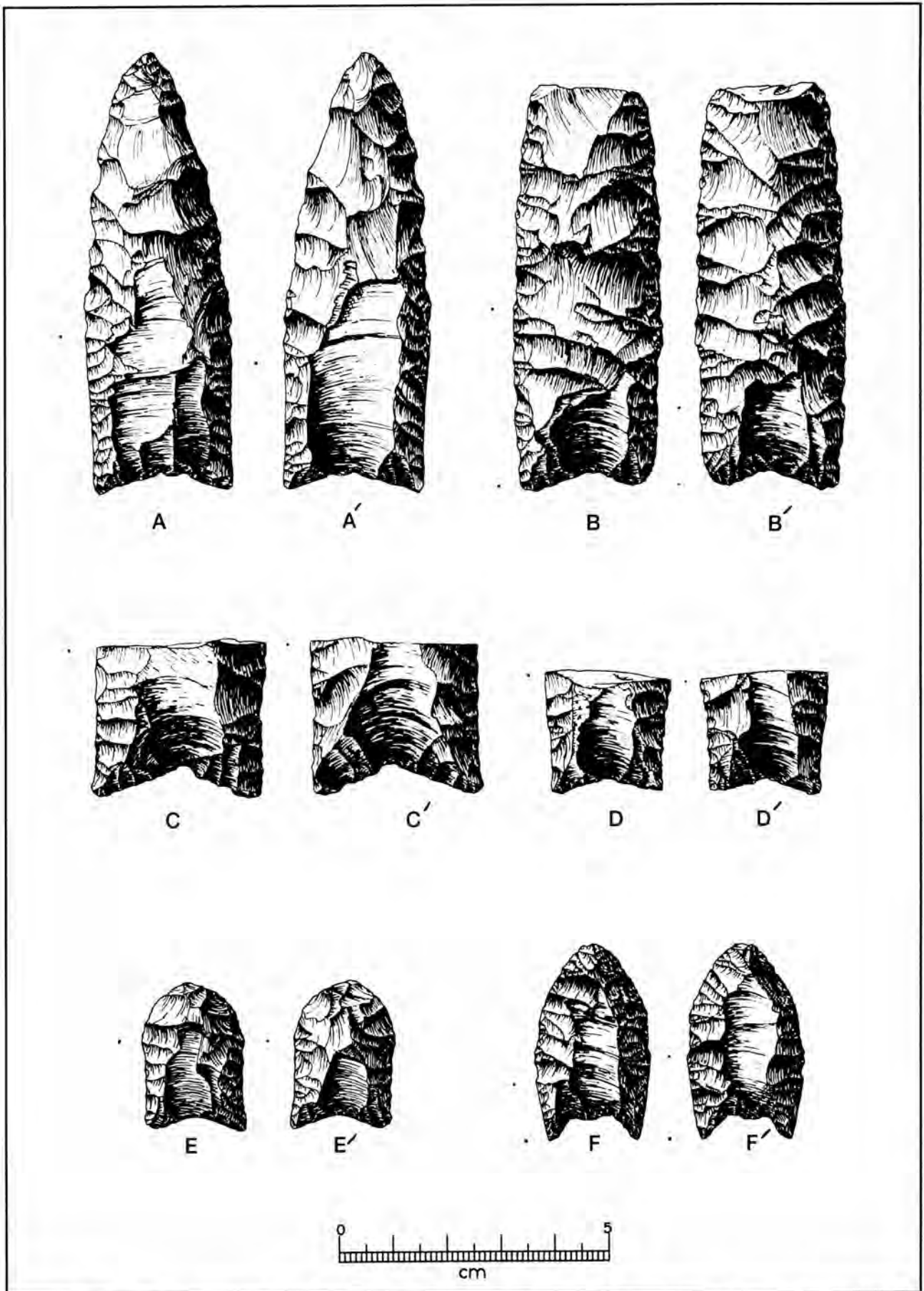


Figure 1. Early Paleo points from the Falcon Lake area of Texas and Tamaulipas, Mexico. A, A', Clovis, Tamaulipas; B, B', Clovis, Starr County, Texas; C, C', Clovis, Tamaulipas; D, D', Clovis, Tamaulipas; E, E', Clovis, Zapata County, Texas; F, F', Folsom, Tamaulipas.

are lightly ground 20 and 30 mm. The base is lightly ground.

Dimensions are 75 mm in length, maximum width is 28 mm at 30 mm above the base, base width is 25 mm. It is 8 mm thick and weighs 24.3 grams. Basal concavity is 3 mm.

There is a single flute on each face. The obverse flute is 20 mm long by 14 mm wide. The reverse flute is 20 mm long by 11 mm wide.

Figure 1, C, C', Specimen No. 500 is a basal fragment of a fluted Clovis point from Southern Island on the Tamaulipas side of Falcon Lake. It is made of khaki tan quartz arenite. Flaking is parallel to irregular. Lateral edges are basically parallel and are heavily ground. The base is also heavily ground. There is a single flute on each face that extends beyond the broken edge. The specimen is 29 mm long, 31.7 mm wide and 8.5 mm thick. It weighs 9 grams.

Figure 1, D, D', Specimen No. 453 is a basal fragment of a fluted Clovis point from the north end of Falcon Lake on the Tamaulipas side. It is made of a tan and chocolate brown chert having a glossy finish and waxy feel. There is no mixing of these two colors. They joined at the vertical center line with the dark chocolate brown occupying one lateral half and the light tan the other. There is a white patina on much of the tan portion on one face that extends on to the broken end and around the base a short distance. This patina does not appear on any area of the chocolate brown portion.

This fragment is 23 mm long, 24.5 mm wide at the break and 6.4 mm thick at the break. Basal width is 21 mm. The basal corners flare slightly. Basal concavity is 2.3 mm. Lateral edges and base are heavily ground. It weighs 4 grams.

Figure 1, E, E', Specimen No. 401 is a complete fluted Clovis point reworked from a longer fragment into what was probably used as a scraper. It is made of light grayish tan chert that has a glossy finish and waxy feel. Lateral edges and base are heavily ground full length. All arrises are reduced and rounded. The thick convex distal end is also smoothed. It has a single flute on each face. The obverse flute is 18 mm long with a maximum width of 10 mm. The reverse is 16 mm long with a maximum width of 8 mm.

Overall dimensions are 27.5 mm in length, 19.3

mm in width with a maximum thickness of 7 mm in the distal area at 7 mm from the distal edge. Lateral edges are lightly concave indicating the original blade was somewhat wider and convex in outline. The base expands slightly to a width of 19 mm. At 6 mm above the base the width is 18 mm. Basal concavity is 2.4 mm. It weighs 4.5 grams.

This specimen is from north of Zapata in Zapata County.

Figure 1, F, F', Specimen No. 187 is a complete Folsom point from the San Fabian Ranch between Highway 2 and the upper end of Falcon Lake in Tamaulipas, Mexico. It is made of uniformly light brown good quality chert that has a glossy finish and waxy feel. It is made on a slightly curved flake. The distal end has been reworked as the result of a distal tip fracture. This reworking has removed much of the edge grinding. Edges now show grinding 12 mm on the left and 16 mm on the right. Flaking is irregular and the edges do not exhibit the fine edge retouch often found with complete Folsom. There is a single flute scar on each face. The obverse flute is 23.5 mm in length and 9 mm wide. The reverse flute is 26 mm long and 11 mm wide. A portion of the basal nipple survives. The basal concavity is 4.4 mm beside the nipple.

This specimen is 36 mm long, 22 mm wide, 3.7 mm thick and weighs 4.2 grams.

SUMMARY

One nearly complete fluted Clovis point (#501, Figure 1, B, B') is from Starr County where only one Clovis is previously recorded (Weir 1956). One heavily reworked fluted Clovis (#401, Figure 1, E, E') is from Zapata County where none are previously recorded. The other three Clovis and the one Folsom are believed to be the first of their types to be documented from this northeastern area of Mexico.

Fluted Clovis points occur in at least two sites in Northern Mexico. One from near the village of San Joaquin in the central area of Baja California [Aschmann 1952]; two others made of obsidian are from Punta Blanca, near Guaymas, Sonora [DiPeso 1955]. A basal fragment of a Folsom point is reported from La Mota, Samalayuca in Chihuahua, a short distance south of El Paso [Aveleyra 1961]. The above bracketed references are from Luis Aveleyra Arroyo de Anda (1964).

ACKNOWLEDGMENTS

These six Early Paleo points were found by different individuals over a period of several years. They are now in the collections of Mike Krzywowski

and T. L. Donohoo and we extend our sincere appreciation to them for their loan and the opportunity to study and document them. We also extend our sincere thanks to Richard McReynolds who prepared the illustrations.

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AZTEC RUINS REDEFINED

Long considered a late settlement of refugees, perhaps fleeing drought, from the Chaco area, Aztec Ruins has recently been redefined as a major regional center in its own right. Peter J. McKenna of the Bureau of Indian Affairs and Thomas Windes of the National Park Service have obtained hundreds of new tree-ring dates showing that Aztec was a "New Chaco," rising ca. 1110 just as construction was ending at Chaco and continuing until the final, dramatic abandonment of the Four Corners shortly after 1275. Ceramics with black-and-white geometric patterns characteristic of Aztec Ruins have been found throughout the Four Corners, suggesting that it too was the center of a vast region. Like Chaco, Aztec had multiple Great Houses arranged in complex geometric patterns. A road following a central northwest-southeast axis leads from a large circular ceremonial building with three concentric walls. Great Houses were sited symmetrically on either side of this axis, much as Chaco's principal structures were arranged around its central axis.

Excerpt from *REWRITING SOUTHWESTERN PREHISTORY*, in
ARCHAEOLOGY MAGAZINE, 1997

AUTHORS

- JAMES BRYAN BOYD** is a police officer and is a Regional Steward assisting the Office of the State Archeologist along the borderlands area of Texas. His interest in archaeology extends into the states of Tamaulipas, Nuevo León, and Coahuila, Mexico. The area in which he is most interested is the area around Falcon Reservoir, where he is currently recording numerous sites with the Texas Archeological Research Laboratory (TARL) at Austin. Mr. Boyd currently has several ongoing projects with TARL, and has made over 600 expeditions into the field.
- KEN BROWN** is a PhD student of anthropology at the University of Texas at Austin and working on staff at the Texas Archeological Research Laboratory (TARL) there. He has been a contributor to *La Tierra* many times, with a variety of interesting subjects relating to archaeology. His address is: TARL, PRC Bldg. 5, 10100 Burnet Rd, Austin, Texas 78712-1100.
- C. K. CHANDLER**, Documentation Chairman of STAA, is a charter member of STAA and a Past President of the Texas Archeological Society (TAS) and also of the Houston Archeological Society. He was the 1985 Robert F. Heizer Award winner for his extensive work in south Texas archaeology. C. K. is a valued contributor of manuscripts to *La Tierra* and the *Bulletin of the Texas Archeological Society*. He has been honored by being named a TAS Fellow, and is an archeological steward for the Office of the State Archeologist (OSA).
- THOMAS R. HESTER** is Professor of Anthropology and Director, Texas Archeological Research Laboratory (TARL) at the University of Texas at Austin. Dr. Hester taught at the University of Texas at San Antonio from the time the University opened in 1973. He has done field work in Texas, the western United States, Belize and Egypt, and is the author of numerous books and papers on archaeology including *Digging Into South Texas Prehistory* (1980) and *A Field Guide to Stone Artifacts of Texas Indians* (with Ellen Sue Turner, 1985 and Second Edition, 1993). As Professor in the department of Anthropology he teaches both undergraduate and graduate courses, and works with students in the archaeology Ph.D. program.
- 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. 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.
- JOE AND KATHY LABADIE** have lived in Comstock, Texas for the past ten years. Joe got his BA in Anthropology (1984) and MA in Archaeology (1987) from UTSA and was a staff archaeologist at UTSA-CAR from 1982-1987. He is currently the Park Archaeologist at Amistad National Recreation Area and teaches Anthropology (part-time) at Southwest Texas Junior College in Del Rio.
- KATHY LABADIE** is a full-time student at Southwest Texas Junior College (majoring in history) and has accrued more than 6,000 hours as a National Park Service volunteer on archaeological projects. She has spent portions of the last two summers in Flagstaff, Arizona working with the U.S. Forest Service at Elden Pueblo.
- TERRY SAYTHER**
and
DEBORAH STUART are avocational rock art fanatics living in Austin, Texas. They have traveled extensively in Mexico looking for caves and rock art sites and have presented papers on their research at several rock art conferences. For the past five years they have been involved in surveying the state of Coahuila and have documented dozens of previously unrecorded rock art sites.

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.

NUMBER YOUR PAGES AND MAKE A PHOTOCOPY OF THE SUBMITTED MATERIAL FOR YOUR RECORDS BEFORE MAILING TO THE EDITOR.

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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