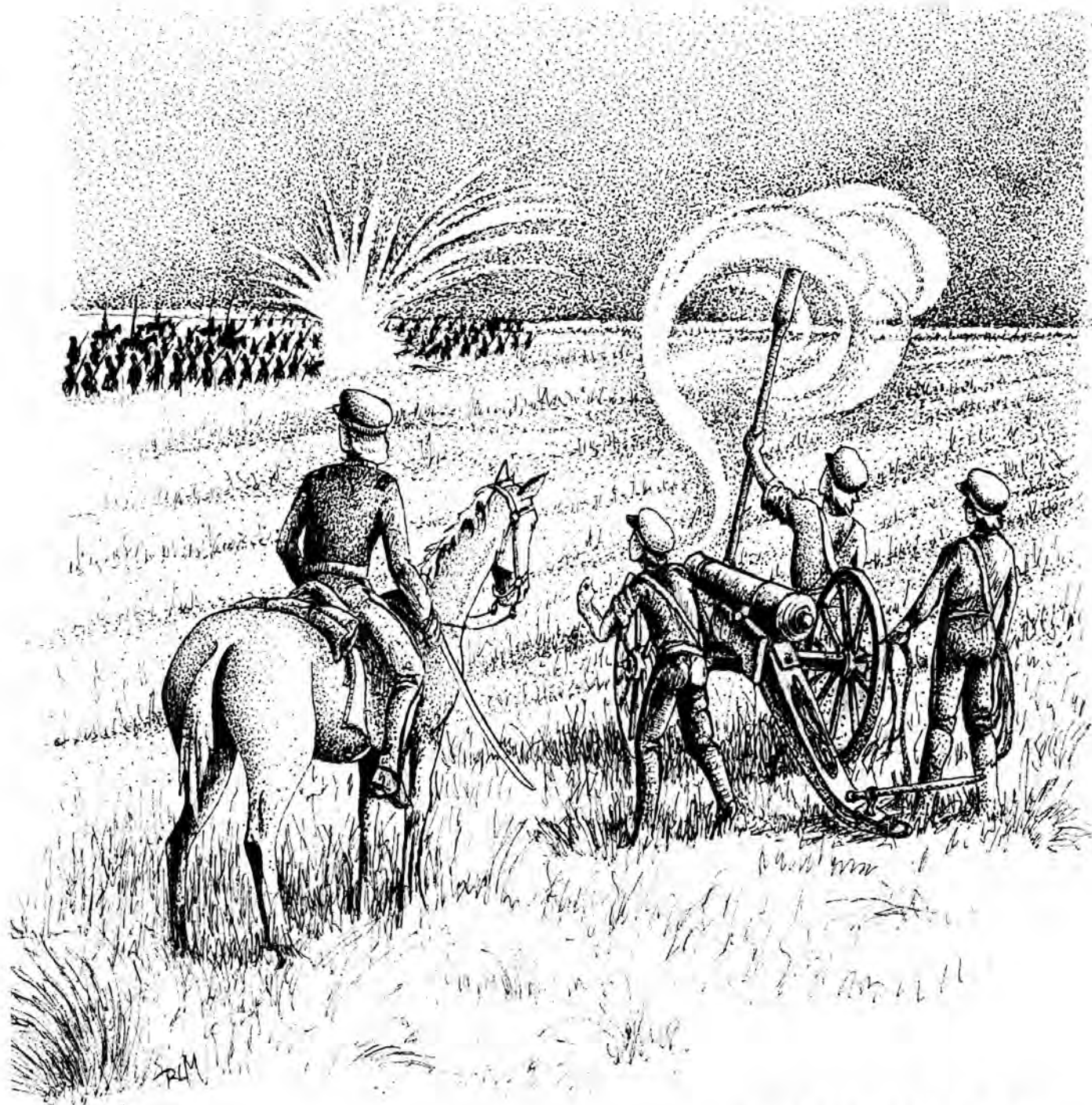


LA TIERRA



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About the Cover: Richard McReynolds has depicted a scene from the Mexican-American battle of Palo Alto. Another drawing by Richard McReynolds is on page 7.

Manuscripts for the Journal should be sent to: Mrs. Shirley Van der Veer, Editor, *La Tierra*, 123 East Crestline, San Antonio, Texas, 78201-6613, email shirleyvan@worldnet.att.net. Past issues of the Journal and Special Publications are available by requesting an order form from STAA (Jim Mitchell), P. O. Box 791032, San Antonio, Texas 78279, or from the STAA internet site (see below). Dr. T. R. Hester may be contacted at the Texas Archeological Research Laboratory, Pickle Research Center, Building 5, 10100 Burnet Rd, Austin, Texas, 78712.

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NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1999:3 **Observations on Fraudulent Artifacts in the Borderlands**

Thomas R. Hester

The occurrence of “fakes”—supposedly genuine artifacts but actually of modern manufacture—has always been a problem in archaeology (Whittaker and Stafford 1999:204). Both professional and avocational archaeologists are constantly asked to look at a stone tool or ceramic figurine and tell the anxious person if it is “real” or what it is “worth.” This is an opportunity that some relic-collector specialists have developed into a profitable business, offering “papers”—certificates of authentication—at a price, which the owner can use in selling the specimen on the artifact market.

However, for the professional and avocational archaeologist, this is a distinct problem. We do not charge to examine an artifact, and professionals must make it clear that they do not “authenticate.” Furthermore, archaeologists do not “evaluate,” in terms of the monetary value of artifacts. Such activities are prohibited by the code of ethics of many of the organizations to which both professionals and avocationalists belong. Still, the photos of artifacts come in the mail, or appear with their owners at the office door—and as STAA members know, at most meetings someone will usually appear to show a prize possession to whomever they can corner!

Interestingly, there are some patterns to be seen now in the kinds of fakes being sold along the Texas-Mexico border and beyond. Lots of shops sell the crudely-chipped “arrowheads” sold by the bag (“100s,” “1000s,” “10,000s”) by exporters in Laredo (Figure 1). These are being made in Mexico and are of minimal workmanship; yet you often see them for sale in antique stores and flea markets, sometimes in sumptuous framed arrangements (along with “fishhooks,” “thunderbirds,” and obsidian “points” sold with them).

But even with such obvious fake lithic artifacts, it is becoming difficult to determine if some dart points are “real,” because of all of the modern flintknapper specimens that are available. Most flintknappers do not, of course, intend for their products to end up in the artifact market, and some even mark them. But there are the “outlaw” flintknappers who produce high-quality replicas that

can be, and often are, sold as “authentic” (Whittaker and Stafford 1999:207). It’s not that I really care about the latter; if someone is buying artifacts, how fitting it is that they buy fakes!

Some fakes are, however, so pathetic that you simply have to tell the owner that they are fakes, to spare them any further humiliation! For 20 years or more, someone in Mexico has been making a style of garish, technologically-challenged ceramic “figurines” (Figure 2) and selling them either directly to tourists or via markets and shops. One gentleman told me of buying a pair of these in a Tampico market, assured by the shop owner that they had been “excavated nearby.” Jack Eaton, formerly of UTSA, used to see these quite commonly. Customs would seize them at Eagle Pass and bring them to the UTSA campus. Jack quickly recognized the pattern of these monstrosities, and soon lined the top of his bookcase with them (Customs didn’t want to haul them back to Eagle Pass). They can be found in private South Texas collections, on the Web in eBay auctions, and the like. A year or two ago, a person in a Texas border town was trying to sell one of these figurines for a princely sum. Upon this person’s arrest (on another charge) the specimen (Figure 2) fell into Federal hands. After having examined it for them (it took about three seconds), I told the agents that it was a fake. While they were clearly impressed by my powers of observation, I had to admit that I had seen quite a few of these, and that the mixture of strange motifs and coarse manufacture made them easy to spot.

And, of course, there are the “thunderbirds,” chipped “effigies” of eagles or raptors, and beloved (along with flint “fishhooks,” see Figure 4) by relic collectors everywhere. All of these are fake. The late E. Mott Davis had a slide of one (Figure 3; now in TARL files) from southeast Missouri, about which the eminent Missouri prehistorian, Dr. Carl Chapman, wrote to Mott:

“My first impression was that it was one of those Arkansas American Eagles that are so

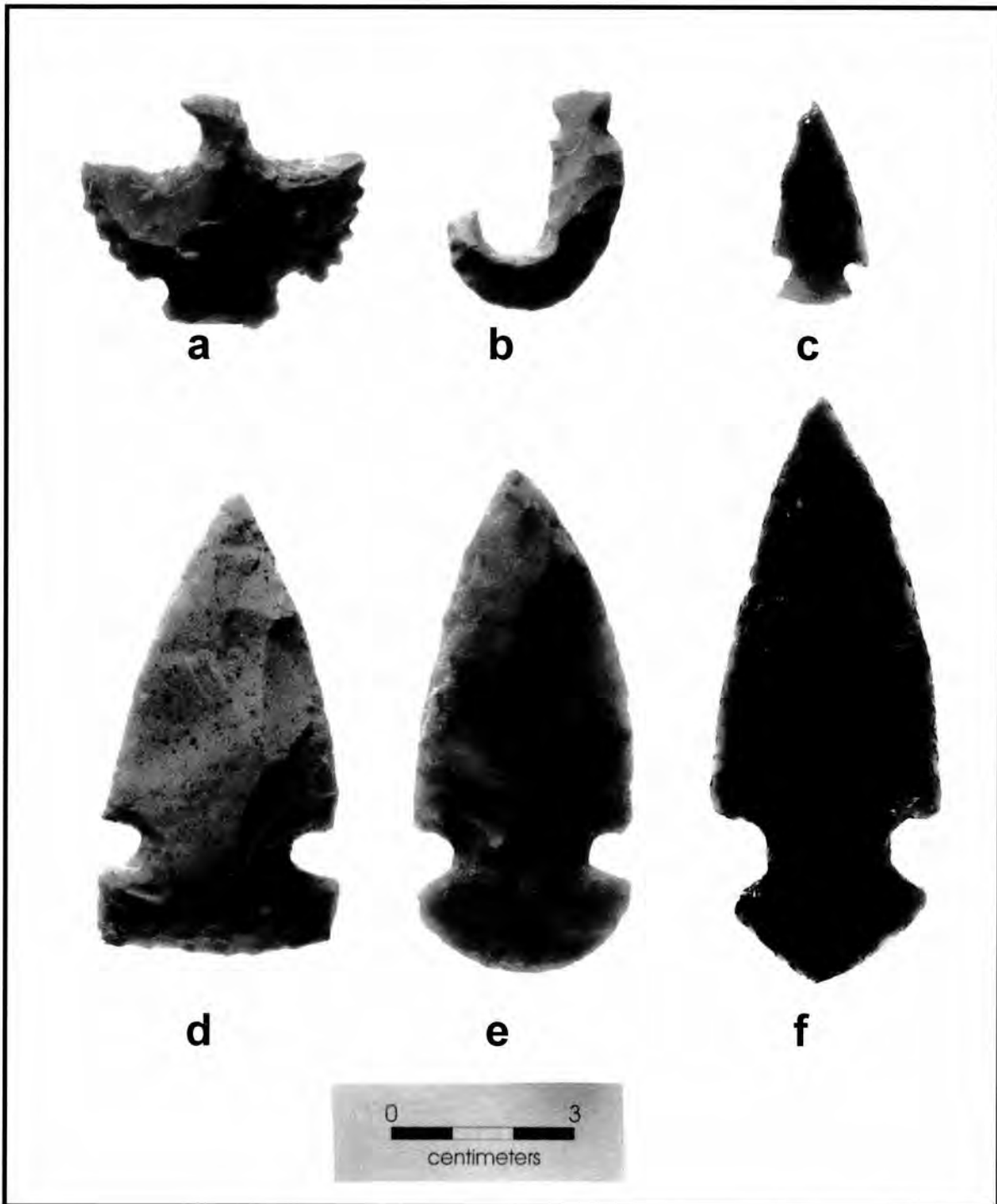


Figure 1. Fake Lithics Being Marketed in Southern Texas. From a Laredo export shop, April 1998: a, “thunderbird”; b, “fishhook”; c, fake obsidian arrowpoint; d, e, fake chert points; f, fake obsidian point. (TARL Comparative Collections).



Figure 2. An Example of A Fake Ceramic Figurine Style Common on the Texas-Mexican Border. (TARL files).



Figure 3. A "Thunderbird" from Southeast Missouri (E. Mott Davis archives, TARL).

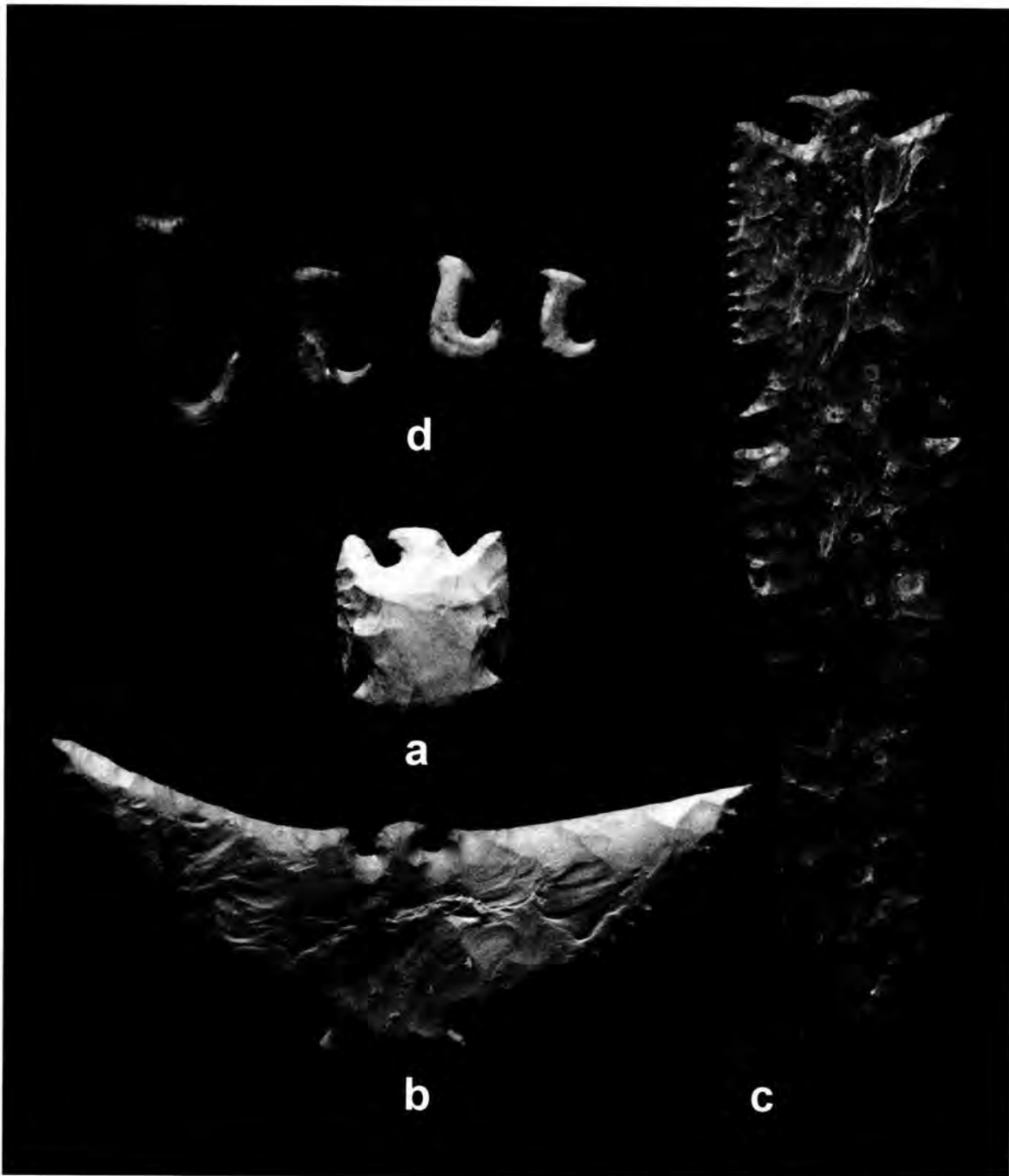


Figure 4. "Thunderbirds." Three varieties are depicted: a, common small style (see Figure 1); b, the large style; c, biface with "thunderbird" chipped at the top. Length of specimen c is 28 cm. "Wingspread" of the large "thunderbird" is 19.5 cm; d, "fishhooks." (TARL Comparative Collections)



Figure 5. Selected Fake Lithics. From the TARL Comparative Collections.

commonly being made nowadays and have been for the past few years. The stone also looks right for this. In a very close examination with lots of magnification, I found what seems to be evidence of rather fresh flint-knapping indications. These show up as lighter colored material and in cases of recent fracture a thin layer of the stone is left in place, fractured, but not enough for the flake to be removed. These little fine, whitish colored fractures are a dead give-away for most recently manufactured material.

Finding such an item in a mound is no criterion since some of these things have been planted in mounds to try to authenticate their existence, the expectation being that whoever happens to dig into the mound and find it to vouch for their provenience. I must say that I am unconvinced that it is an authentic Indian artifact in spite of the fact that some of the Hopewell people did do flint work that might be called eccentric" (letter of January 25, 1966).

The Missouri specimen illustrated here is rather mundane compared to other "thunderbirds." Figure 4 shows three styles of "thunderbirds" purchased in west Texas some years ago, part of a large collection of fakes donated to TARL (by a donor who realized

[later] that they were fakes). This is a valuable collection, in that the visiting artifact collector or garage sale enthusiast who comes by TARL with similar fake stone artifacts can be shown these specimens (Figure 5), and not go away muttering about the ignorance of the professional archaeologists on the staff. These artifacts are huge, sawed from flint blanks, and then pressure-flaked (see Whittaker and Stafford 1999:205 and Figure 1).

Dealing with "fakes" is thus a tricky matter for archaeologists. There are ethical issues that have to be weighed and the public service that we are all called on to perform has to be measured. Also, there are times when such helpfulness on our part might be dangerous to our health! Folks sometimes get pretty upset if you intimate that the object, on which they might have spent thousands of dollars, is not authentic! For example, I have indeed seen one "authentic" thunderbird (much resembling the one in Figure 3), found in northern Bexar County. A lady brought it to my UTSA office in the mid-1980s, describing in detail how she had found it down in a limestone crack—miraculously, just where her biker boyfriend had pointed. This enormous fellow was standing, arms folded, nearby and in the interest of self-preservation, all I could say was that, "by gosh, it sure looks real to me!"

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FOLSOM POINTS FROM CRANE COUNTY, TEXAS

C. K. Chandler and Curt Harrell

ABSTRACT

Two fragmentary Folsom points are reported and illustrated. They are from Crane County, Texas.

ARTIFACT DESCRIPTIONS

Figure 1, A, A' illustrates a fluted Folsom point from the northwest area of Crane County. It is made of uniformly light tan chert of good quality. There is a single full length flute scar on each face. This Folsom point is broken slightly off-center full length and has been lightly retouched from one face only along this broken edge and from both faces about 10 mm at the distal end. The unbroken edge is ground 12 mm. The basal concavity is not ground. Both flute scars have prominent ripples.

Dimensions are: Length, 37.4 mm; Width, 11 mm; Thickness, 3.6 mm. It weighs 2.3 grams.

Figure 1, B, B' illustrates a basal fragment of a Folsom point that has a flute scar on only one face. It is made of good quality light tan chert containing numerous tiny black specks. Edges are lightly ground full length and the base is ground. The one flute scar is smooth and is without ripples.

Dimensions of this fragment are: Length, 19 mm; Width, 18.5 mm; Thickness at the break, 3.5 mm. It weighs 1.7 grams. The basal concavity is 1.4 mm. All surfaces are glossy, probably due to blow sand.

DISCUSSION

Until recently Crane County was one of the Texas counties without a reported Folsom presence (Largent 1995, Largent et al. 1991). That has changed now with the report by Harrell (1995) of his MA thesis, "An Introduction to the Archaeology of Crane County, Western Texas," the Folsom points from Crane County reported in *La Tierra* (Chandler 1998) and this report.

ACKNOWLEDGMENTS

Thanks are extended to Richard McReynolds who prepared the illustration for these points.

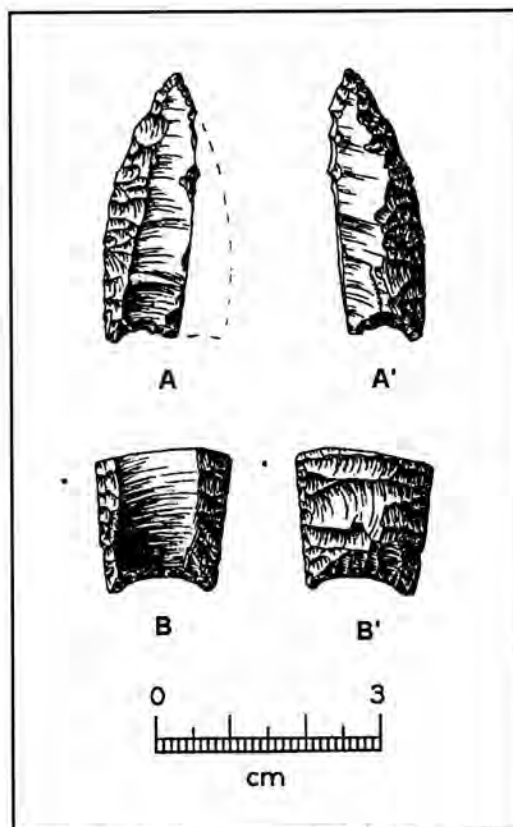


Figure 1. Folsom points from Crane County, Texas.



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VULTURE HILL: A PICTOGRAPH SITE ON THE RIO SALADO, TAMAULIPAS, MEXICO

James Bryan Boyd

ABSTRACT

Vulture Hill is a pictograph site located on the lower Rio Salado, just west of Falcon Reservoir on the Rio Grande. The site was discovered in the early 1990s, and has four separate rock art panels on a desolate and isolated hill. The site is discussed in context with the few other known rock art sites on the Rio Grande Plains, as well as to the proliferation of rock art sites in West and Central Texas, the Lower Pecos region, and the Sierra Madre Oriental of northeastern Mexico.

INTRODUCTION

Rock art sites are common occurrences in some areas of Texas, namely West Texas, the Trans-Pecos region, and some areas of Central Texas, where suitable surfaces for such art occur (rockshelters and overhangs). Similar conditions exist in the mountainous areas of northeastern Mexico, namely in the states of Nuevo León and Coahuila, where numerous rock art sites have been located and investigated (Boyd n.d.a).

On the Texas side of the Rio Grande, the greatest concentration of rock art sites is in the Lower Pecos River region, where various styles of rock art date from the Archaic through the Historic periods. The frequency of rock art sites south of Del Rio decreases dramatically, and only a few sites are known in that area. The southernmost rock art site in Texas is in extreme northwestern Webb County. The site, recorded as 41WB56 by Thomas R. Hester in September 1966, has pictographs in a shallow overhang on a bluff overlooking the Rio Grande (Hester 1986:2-4). The site is relatively small, consisting of a panel of polychrome pictographs, including numerous zig-zag lines and one probable anthropomorphic figure painted on the rear wall of the shelter. Placement of the pictographs into a recognized style has yet to be accomplished (Dr. Thomas R. Hester, personal communication 1998), thus dating of the panel is not presently possible.

The question arises whether the decreasing frequency of rock art along the Rio Grande as one travels southward along the river is due to cultural differences among the varied aboriginal populations that formerly inhabited the area, or is due to changes in the landscape itself. It is clear that in South Texas there are few rockshelters or overhangs as compared to areas in Central and West Texas, or the Lower Pecos region. Certainly there were notable differences in the cultures of the populations living in these areas, but differences in the geology of those areas undoubtedly influenced their character as well, especially the presence of rock art. In other words, it is logical that there would not be a preponderance of rock art in South Texas when a suitable medium for such art, (i.e., rockshelters, overhangs, etc.) did not exist except in isolated cases.

On the Mexican side of the Rio Grande there are numerous reported rock art sites in the areas adjacent to the lower Pecos River region (cf. Taylor 1948:74-87; Turpin 1988:279-284; Labadie et al. 1997:14-31). However, there is a sharp decrease in the number of rock art sites in areas on the Rio Grande Plains south of the lower Pecos. Whether this is due to cultural or geological differences is unknown, but it is believed that the latter is the primary reason.

One notable exception to the general rarity of rock art sites in the Rio Grande Plains of northeastern Mexico is the stunning petroglyph site of El Fronton de Piedras Pintas, approximately 40 km west of Falcon Reservoir. This site was extensively reported by Morales (1983); it consists of a veritable array of petroglyphs carved deeply into numerous huge sandstone boulders on the side of a low hill on the Rio Sabinas, in Nuevo León, Mexico. Detailed investigations were carried out at the site by the author in 1992, when a rockshelter under the cluster of boulders was discovered (Boyd n.d.a). A careful examination of the interior walls and ceiling of this shelter located several pictographs. These consisted of a "spider-web" motif painted (or drawn) in black, as well as two very small black anthropomorphic figures as well as a series of faded red lines. These

pictographs were not mentioned in the available literature, but were briefly discussed by Trevino (1996:85) following a visit to the site with the author in 1992.

The Sierra Madre Oriental lies west of the Rio Grande Plains. Numerous rockshelters and overhangs are located in this mountain range (Boyd n.d.a), which stretches from south of the Big Bend region of West Texas to coastal Tamaulipas, Mexico. Rock art sites are known in most parts of these mountains (cf. Boyd n.d.a; MacNeish 1958; Pauza 1997; see also examples in Turpin and Zintgraff 1991). These areas are separated not only by vast distances, but differences are readily apparent in the material culture as well. Yet, one culture trait that seems to be omnipresent in the Sierras is rock art. It *seems* apparent that rock art in this region as a whole exists wherever the geological medium for its preservation exists.

It was amidst these observations that the author set out in the early 1990s to locate rock art sites in the Rio Grande Plains area of South Texas and northeastern Mexico. Explorations in South Texas were concentrated along the Rio Grande in the area between Laredo and Rio Grande City, Texas, but no rock art sites were found.

It is notable that no rockshelters were found, and very few overhangs were encountered. However, on the Mexican side of the Rio Grande a small number of rockshelters and overhangs were located and explored, and several of these had occupational debris (Boyd n.d.a, n.d.b) but no rock art.

The absence of rock art in some instances is a probable result of the shallow nature of the shelters and the resultant weathering of the walls. Consequently it was quite exciting when the author discovered a small rockshelter with pictographs on the Mexican side of Falcon Reservoir on January 14, 1990. This small shelter, designated SG4-40AG, is located approximately 3-4 km from the Rio Grande, and several kilometers to the northwest of the city of Zapata, Texas. Several visits to this site were made, and photographs of the pictographs were obtained. The pictographs were located on the ceiling of the shelter, and comprised numerous red lines and a few geometric shapes.

The site lies in a very rich "site complex," with approximately 200 distinctive occupation sites recorded by the author within an area approximately 7 km by 5 km. There are several rockshelters and overhangs, but the one mentioned above was the only one known to have rock art.

THE VULTURE HILL PICTOGRAPH SITE

Following the discovery of the rock art site mentioned above, the author continued his survey of the Rio Grande Plains in the area west of Falcon Reservoir, in an attempt to locate additional rock art sites. On September 29, 1991 another rock art site was found. The site, consisting of a pictograph panel in a small rockshelter, was located on a hill on the Rio Salado, several kilometers to the west-southwest of Zapata, Texas, and west of Falcon Reservoir (Figure 1). It is about 2 km from the Rio Salado. The site is located near the crest of a mesa-like hill capped with huge boulders, along and in which there



Figure 1. General area map, showing approximate location of the Vulture Hill pictograph site. Note the Rio Salado just south of the site.

are several caves and shallow overhangs. Subsequent visits to the site located four distinctive rock art sites on the hilltop, all located in caves, overhangs, and crevices. This fairly complex rock art site is known as Vulture Hill, for the turkey vultures (*Cathartes aura*) that were often observed perched on top of the huge boulders comprising the crest of the hill. It is notable that three of the four shelters containing rock



Figure 2. Wide-angle view of the west side of Vulture hill, showing the central caprock (sandstone) rim in the background. Note the dense chaparral in the foreground. View is to the east. Photo by Mike Krzywonski.

art occur on the western side of the hill on which they are located (Figure 2).

The site was visited several times between 1991 and 1994, during which time three additional rock art panels were located. A relatively formal survey of the site was performed on October 14, 1995, and is the basis upon which the individual rock art panels are described and discussed below. Figure 3 is a plan view of the main pictograph areas at the Vulture Hill site.

The “original” shelter

This was the first rock art site located on Vulture Hill. It was discovered by the author on September 29, 1991. The site consists of a small shelter or overhang in the side of a huge sandstone boulder. The floor of the shelter is at present ground level, and its entrance faces south-southeast. The length of the overhang is approximately 3 meters, and it has a ceiling height of about 1.2 meters. The floor has a deep dirt fill. No artifacts were visible at the surface, nor was the fill probed or disturbed in any way. It is doubtful that the shelter was utilized as an occupation site due to its small size, but it could have provided temporary shelter for a very small number of people. The walls and ceiling are composed of a coarse brown sandstone. A large mesquite tree is

present 3 meters south of the entrance to the shelter. The first pictograph noted in this small shelter has an unusual motif consisting of three red dots connected by a slightly curved red line (Figure 4). This pictograph is located 0.8 meters above the cave floor, and about 0.6 meters from the cave’s east edge. The length of the motif is 23 cm. In addition to this figure, there are numerous other pictographs in the shelter, albeit less striking. There is one panel on the roof of the overhang that has several red “X”s, covering an area about 0.9 meters long and 0.3 meters wide. On the shelter’s rear wall, west of the primary motif, there is a panel of faded red lines in an area measuring about 1.2 meters long and 0.45 meters wide. This panel is about 0.75 meters above the floor of the cave. The panel is strikingly similar to the pictograph panel located on the ceiling of the small cave (SG4-40AG) discussed briefly above. The distance between the two sites is approximately 12 kilometers.

Vulture Cave

This site was discovered by the author on April 23, 1994. It is a relatively large cave by regional standards. The dimensions of the cave were not recorded at the time of the discovery. The cave mouth faces generally west. The floor of the cave is

a fine dusty soil of unknown depth; it is likely not very deep, but exhibits chert flakes and other lithic debitage. In addition, just inside the overhang near the north end of the cave, there is a series of what appear to be abrading marks in the sandstone wall

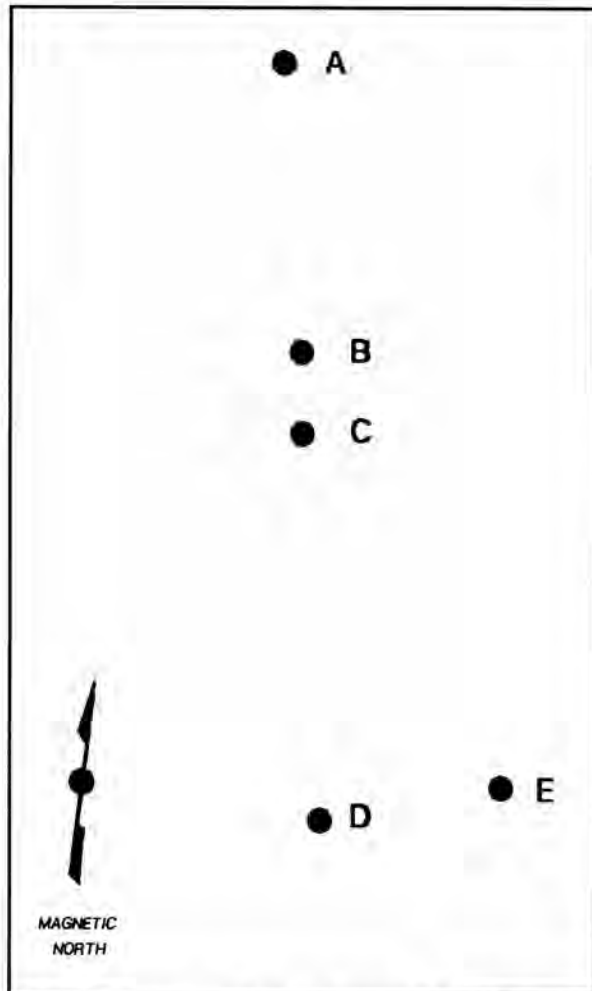


Figure 3. Plan view of selected areas of the Vulture Hill site. A, West Grotto; B, Vulture Cave; C, Bee Cave; D, XXXs Lair; E, "original" shelter. The Rock-wall shelter is not shown, but lies about midway between A and E. Luñena Wash runs north to south to the left (west) of the sites. Distance from A to D is 250 feet.

(Figure 5); whether these marks are ornamental or utilitarian in purpose is unknown. Lastly, there are very faded and spalled pictographs on the ceiling of the cave, just inside the entrance near the south end. The pictographs are a small remnant panel of lines and other indistinct shapes rendered in black. The panel(s) here may have once been more extensive, but it appears that the walls and ceiling of this cave are spalling at an accelerated rate. This cave is large

enough that it could have comfortably housed a family-sized band or group. It is fairly well hidden, and can be reached by a narrow and now overgrown path between numerous very large boulders on the west-central side of the hill.

"XXX's Lair

This site was discovered by Mike Krzywonski, who had accompanied the author to the site on April 23, 1994. This site is particularly interesting, because it is the only rock art site at Vulture Hill on the eastern slope of the hill. The pictograph panel is located on the rear wall of a small recess or overhang underneath and on the southeast side of a large sandstone boulder. This overhang is approximately 23 meters northeast of the "original" shelter. This recess has a sandstone floor, and is so small that it could only have served as a temporary haven for a single person seeking a retreat from the glaring afternoon sun. The width of the overhang is only about 1.2 meters, and the ceiling height is about 0.9 meters. The pictographs are large numbers of red "X"s, some in rows, along with some short red lines, that are located near where the rear wall curves suddenly upward and merges with the ceiling. The style of the pictographs is somewhat reminiscent of those in the nearby "original" shelter, though there are many more "X"s in this site (hence its name).

West Grotto

This extremely interesting site was discovered by Mike Krzywonski on May 28, 1994. The pictograph panel is located in a small fissure or crevice in a large boulder about 6 meters in diameter. The fissure is lozenge-shaped, about 1.1 meters in height and width.

The opening faces west, and red pictographs are present on both the north and south walls. The pictographs on the north wall are better preserved, and are somewhat complex in style (Figure 6). Portions of this panel are faded almost to obscurity, while other areas are well preserved. The area of the panel measures about 0.6 meters in width and about 0.75 meters in height. The bottom of the panel is 0.8 meters above ground level, as measured outside of the entrance to the crevice in which the rock art is located. One distinctive motif resembles a chevron, while various outlined figures adorn this complex panel, that appear to have been drawn directly onto the sandstone walls of the fissure with a relatively sharp mineral, perhaps a red ochre "crayon" implement. During the author's survey of the site, small



Figure 4. Photograph of unusual pictograph in the “original” shelter. Note the three dots, which are red in color, connected by the slightly curved line. The shelter wall is sandstone. The pictograph has been outlined for clarity purposes. The motif is 23 cm in width. Photo by Mike Krzywonski.



Figure 5. Photograph of abrading marks on wall of Vulture Cave. Note spalling of the feature, which is approximately 10 cm in length and width. Photo by Mike Krzywonski.

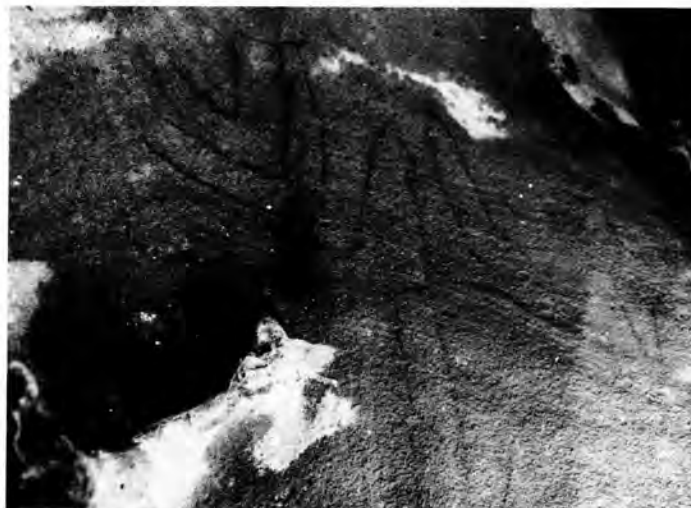


Figure 6. Photograph of complex red linear pictographs on wall of West Grotto. Note the chevron motif at upper left of photo. Area shown is approximately one meter in width. Photo by Mike Krzywonski.

nodules of red ochre were noted in the Vulture Hill area. The pictograph panel at West Grotto is the most complex of the Vulture Hill cluster of rock art sites. The function of this site could only have been for non-practical reasons, as it is too small to provide shelter even for a single person.

OTHER FEATURES AT THE VULTURE HILL SITE

Rock wall shelter.

This feature is a partially fallen, stacked-rock wall that partially encloses a low overhang between solid sandstone bedrock and a huge boulder. The building of the wall effectively created an enclosed shelter that could have housed several individuals lying in the prone position. The ceiling is rather low and the floor is solid sandstone. This feature is located on the west slope of Vulture Hill, approximately halfway between the "original" shelter and West Grotto. The antiquity of the feature remains undetermined; other similar features have been recorded in various sites on the Rio Salado (Boyd n.d.a).

Bee Cave.

This cave was discovered by the author on October 14, 1995. It is located in the sandstone ledge below the rock wall shelter described above. The cave, of undetermined size, is relatively well hidden from view, but the odds are that it was formerly inhabited. However, this has yet to be determined because a huge swarm of bees in the cave was disturbed when the author attempted to climb down into the cave. Both the author and Mike Krzywonski, who had accompanied him to the site, were forced to flee in haste. No return visits have been made. Africanized honey bees have colonized the area of the lower Rio Salado, and both Krzywonski and the author were ferociously and repeatedly attacked in 1992 by such bees at another pictograph site in Tamaulipas, Mexico.

Luñena Terrace.

This site is on the eroding slope on the western face of Vulture Hill. It is approximately 100 meters in length (north to south) and about 30 meters in width (east to west). The site has large amounts of scattered burned (sandstone) rock and moderate amounts of lithic debitage. No diagnostic artifacts were recorded, although a few broken unstemmed dart points were found. A Caracara arrow point with

a broken distal end was found above the terrace, in proximity to the original shelter. It was found next to a trail leading from the area of the terrace site to the slightly higher elevations near the crest of the hill, where the rock art sites are located.

NEARBY OCCUPATION SITES

There are innumerable occupation sites in proximity to Vulture Hill. The Luñena Terrace site discussed above is only a small and insignificant example when compared to some of the very large occupation sites or zones located along the lower Rio Salado, including the immediate area around Vulture Hill. Two of these large, nearby sites are discussed briefly below. The range of projectile point types recorded in those sites indicates that the area of the Vulture Hill pictograph site was inhabited almost throughout the range of human history in the region.

Los Muertos site.

This is a large occupation site located just over one kilometer to the east of Vulture Hill. The site exhibits much evidence of past occupation, including huge amounts of burned rock and lithic debitage. Many stone tools were recorded, including numerous projectile points, mainly dart points, including Abasolo, Andice, Catan, Ensor, Langtry, Matamoros, Shumla, and Tortugas types. Additionally, a specimen identified as a Folsom point failure (Mike Collins, TARL, personal communication 1995) was also recorded. The specimen was briefly reported in Hester (1995: 434 and Figure e). Very few arrow points were found in this site, but examples include Perdiz and a provisional type tentatively identified (by the author) as San Fabián (Boyd n.d.c). In addition to projectile points, large numbers of other types of stone tools were also recorded. Judging solely by the projectile points at the site, it appears to have been more heavily utilized during the Archaic period.

Antigua site.

This site, or occupation zone, is much larger in extent than the Los Muertos site. It lies approximately 3 km east of Vulture Hill, and exhibits significantly more evidence of prehistoric occupation, with incredible amounts of burned rock, some intact hearths, and tremendous amounts of lithic debitage. Stone tools, including projectile points, were quite numerous. Of particular note was the high degree of ground stone artifacts. These included

sandstone metates, mano stones, and pestles. No ground stone artifacts were recorded at the nearby Los Muertos site. Dart point types noted include Abasolo, Andice, Catan, Gary-like, Langtry, Matamoros, Palmillas, Pandora, Shumla, and Tortugas. Additionally, a Plainview point was documented, as well as a Pandale-like point. Similar dart points resembling the Pandale type are infrequent in sites in the area (Boyd n.d.a). Arrow point types recorded include Caracara, Fresno, Guerrero, Perdiz, Clifton, Starr, Toyah, Young, and Zavala. Also of particular interest is a metal projectile point found in one of the richer site areas in 1991 (Boyd n.d.a).

The Antigua site demonstrated evidence of a much higher degree of occupation during the Late Prehistoric period than did the Los Muertos site. However, it also appears that the Antigua site was inhabited extensively during the Archaic period. The correlation between the higher apparent usage of the site during the Late Prehistoric period and the noticeable increase in the number of ground stone artifacts is particularly noteworthy.

SUMMARY AND CONCLUSIONS

The purpose of this paper is to report a previously unreported rock art site on the lower Rio Salado in northeastern Tamaulipas, Mexico. The site, named Vulture Hill, has at least four distinctive pictograph sites located in small shelters or caves. Two of these sites (XXX's Lair and West Grotto) are too small to have served as occupation sites, although the former site could have provided temporary shelter for one person. These two sites appear to have been strictly utilized as rock art sites, and may have possessed some special significance to the artists. The "original" shelter, though small, might have provided *temporary* shelter to a very small number of people, in addition to serving as a medium for the pictographs. The Vulture Cave site appears to have served as an occupation site as well as a rock art site. It is possible that other rock art exists at Vulture Hill, such as in Bee Cave, but a complete survey has not yet been performed.

The colors utilized in the pictograph panels consist of red and black. Most of the pictographs appear to have been *drawn* directly on the rock wall surfaces with minerals present in the area, such as red ochre. The unusual pictograph of three dots connected by a line, located in the original shelter, appears to have been *painted* onto the surface.

The style of pictographs in the four sites is

variable. The original shelter and the XXX's Lair site exhibit "X"s and short lines, rendered in red. Additionally, the original shelter has the unusual dotted pictographs. Vulture Cave's pictographs are the most faded, spalled, and indistinct, with only a few black lines and other apparent vague shapes. It is the only site at Vulture Hill with black pictographs. The West Grotto site has some very unusual, linear red pictographs that contrast in style to the more simplistic, geometric styles observed in the other three sites.

Classification of the pictographs at the site into a recognized style has yet to be accomplished, and the estimated age of the rock art at Vulture Hill has not been established. Further research to address these issues is definitely recommended.

The Vulture Hill pictograph site is significant, not because its pictograph panels are particularly spectacular in the visual sense, but because it has rock art that had remained undiscovered until the 1990s. Furthermore, it is in an area where rock art has not been previously recorded. The site lies within 8-9 km of the Rio Grande, on the Rio Grande Plains, just west of Falcon Reservoir. Other than rock art site SG4-40AG, no other rock art sites are known in this part of Mexico. The nearest known rock art site on the Rio Grande Plains is the El Fronton de Piedras Pintas site, some 40 km to the southwest. Numerous rock art sites are known in the Sierra Madre Oriental, west of the Rio Grande Plains, some 80-120 km to the west, but this is expected because of the increased numbers of available rock surfaces, rockshelters, and overhangs.

Rock art, including pictographs and petroglyphs, is widely known in many parts of Texas, mainly West and Central Texas, and the Lower Pecos region. Rock art is also known to exist in many or most parts of the Sierra Madre Oriental in Mexico. However, on the Rio Grande Plains south of Del Rio, Texas, rock art is infrequent, and none is known south of 41WB56 in Webb County. The same circumstances appear to repeat themselves on the Mexican side of the Rio Grande, where until recently, the only known rock art site on the Rio Grande Plains in the area of Falcon Reservoir was El Fronton de Piedras Pintas. With the reporting of the Vulture Hill pictograph site (as well as SG4-40AG), the number of known rock art sites in the region has been significantly increased.

The relative lack of rock art in areas adjacent to the lower Rio Grande, when compared to the abundance of such art in other regions, appears to reflect the differences in the geology of the specified areas,

rather than cultural differences between their former inhabitants. Although we know that well-defined differences in material culture *did* exist between the respective populations, one *apparent* similarity in such traits was rock art. It appears that rock art occurs wherever a suitable medium upon which the artistic expressions of the aboriginal population could be expressed. The search for such locales, clearly isolated occurrences in the vastness of the Rio Grande Plains in northeastern Mexico, is a daunting, yet fascinating, challenge.

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NEW PUBLICATION

Cueva Pilote: Ritual Bloodletting Among the Hunters and Gatherers of Northern Coahuila, Mexico

Solveig A. Turpin and Herbert H. Eling, Jr.

This small cave high in the remote mountains of northern Coahuila meets all the criteria for a ritual site. Its isolated location, beneath the highest peak or pilote in the northern Sierra de la Encantada, and an unusual artifact assemblage, consisting of painted deer scapula, mussel and marine shell beads, an antique cache of Langtry preforms and points, ornamental snail shells, bear bones, human finger bones, fragments of a gourd vessel, and most importantly, three fiber pincushions and almost 200 agave spines, some stained with human blood, indicate that the Mesoamerican predelection for cave ceremonies was also observed by hunting and gathering people between 600 and 1000 years ago. Ethnohistoric accounts and monumental art works document occasions when bloodletting was implemented and illustrate the use of agave spines and holders in ritual *sangría*.

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ARCHAEOLOGICAL INVESTIGATIONS OF MEXICAN-AMERICAN WAR BATTLEFIELDS AND RELATED SITES IN TEXAS

Part I: Introduction And Discussion of Sites on The Palo Alto Battlefield

Timothy K. Perttula

ABSTRACT

Archaeological investigations of Mexican-American War battlefields, related sites (supply depots and camps), trails, and crossings in Texas were completed in 1997 with the support and assistance of the National Park Service's American Battlefield Protection Program and the staff of Palo Alto Battlefield National Historic Site (NHS) in Brownsville, Texas. These investigations are documented and discussed in the present paper.

SITES INVESTIGATED

An archaeological survey, completed in 1997, with the support and assistance of the National Park Service (NPS) and the staff of the Palo Alto Battlefield National Historic Site (NHS), ranged from Corpus Christi, Texas to the mouth of the Rio Grande (Boca del Rio). It concentrated on the battlefields, related sites (supply depots and camps), trails, and crossings in Texas, and other associated sites on the lower Rio Grande, in the area around Brownsville, Texas (Figure 1) (Perttula et al. 1997a-1997d).

The primary purpose of these investigations—which were carried out in concert with historical and archival investigations by Aaron Mahr of Palo Alto Battlefield NHS (Mahr 1994a, 1994b, 1995a, 1995b), and were a continuation of the National Park Service-Texas Historical Commission historical and archaeological investigations carried out in 1994 and 1995 (Mahr and Perttula 1995a, 1995b, 1995c)—was to:

- (1) document the current condition and integrity of these battlefields and related sites, and to (2) develop recommendations and strategies for preservation and designation efforts, as well as (3) discuss the scope of any future archaeological investigations that may be warranted on the battlefields and related sites.

Palo Alto Battlefield (41CF92)

The Palo Alto Battlefield looks much the same now as it did in May 1846—a broad, flat prairie covered with zacahuistle grass, and bordered on three sides by resacas (old channels of the Rio Grande). The only high ground is a small loma (locally called Arista's Hill) southeast of the Mexican battle line. The old Matamoros-Point Isabel and Tanques del Ramireño roads (the latter leading to the crossing at Longoreño) are now simply dirt tracks or farm roads.

The battle at Palo Alto took place on May 8, 1846, as General Zachary Taylor's forces were moving from the Point Isabel supply depot back to the besieged U.S. troops at Fort Brown. The Mexican forces (about 4,000 men) under General Mariano Arista were attempting to cut the U.S. army off from its supply line, and prevent Taylor's troops (about 2,200 men) from relieving his forces at Fort Brown. The Mexican force took up position that morning to block the Matamoros and Tanques de Ramireño roads. Arista's line stretched about a mile between the two roads (see Haecker 1994:Figure 10; Haecker and Mauck 1997:Map 3) across the plain of Palo Alto. Taylor, who had received advance information about the Mexican army positions, brought his forces up the Matamoros road until they were about one-half mile from the Mexican positions.

The battle of Palo Alto itself featured the artillery of both the U.S. and Mexican forces, particularly the light or "flying" artillery of the U.S. forces, which inflicted heavy casualties on the Mexican lines (Butler 1995:58-59). However, neither side was driven from the battlefield at the end of the day, and the soldiers from both forces camped on the battlefield that night. Hostilities were expected to be renewed on May 9, 1846. However, in the early morning of the 9th, the Mexican army had left Palo Alto, falling back along the Matamoros road about

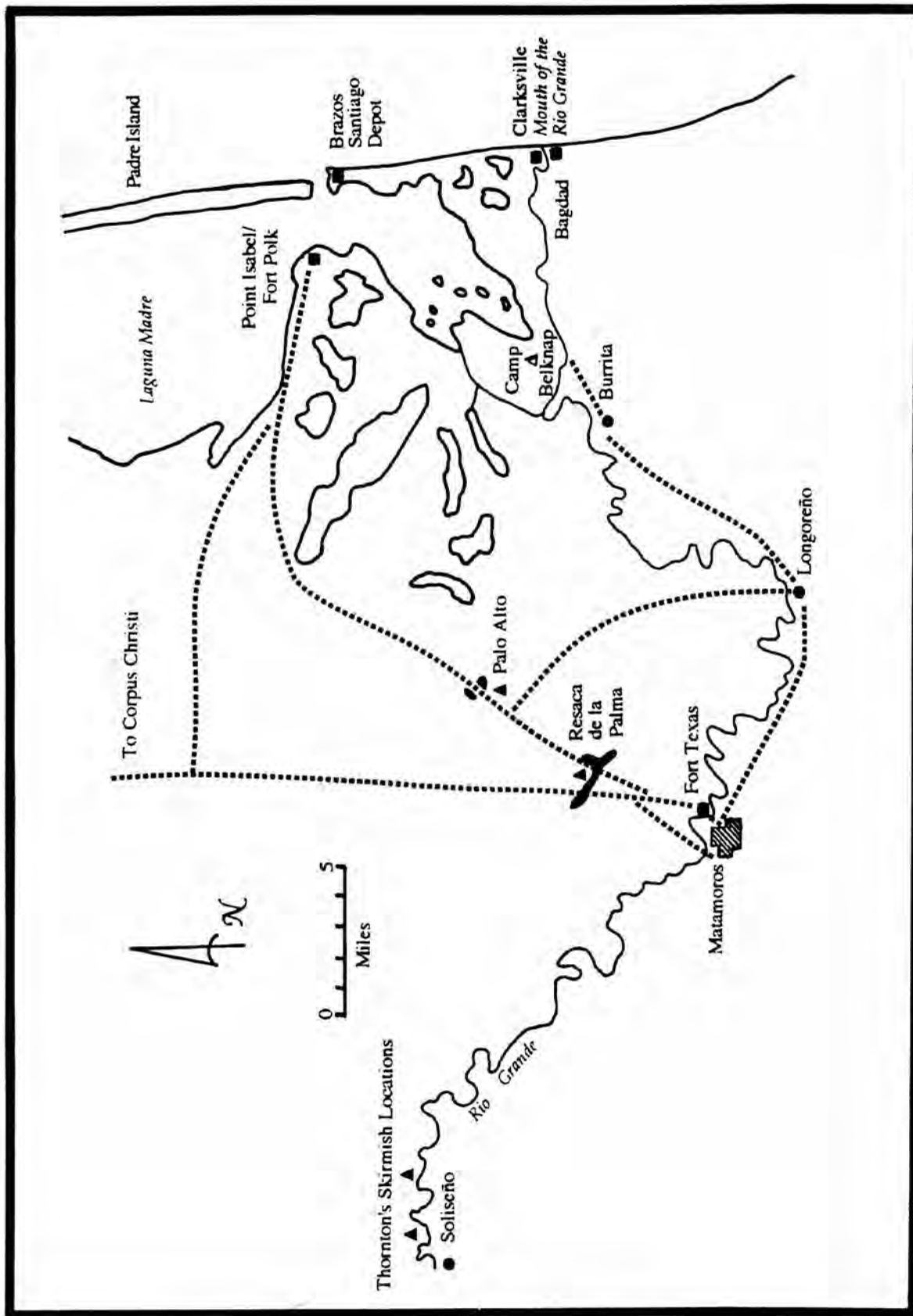


Figure 1. Mexican-American War-Era Battlefields, Forts, Towns and Settlements, Camp Areas and Depots, and Roads.

five miles to take up positions again astride the road crossing at Resaca de la Palma.

During the battle of Palo Alto, only two U. S. officers (among them Brevet Major Samuel Ringgold) and 13 enlisted men were killed or mortally wounded (Butler 1996). Mexican army casualties were estimated to have included at least 100 soldiers killed, and an unknown number wounded (Butler 1995:59).

Haecker's (1994, 1996; see also the earlier work by Shafer 1974; Baxter and Killen 1976; Bond 1979; Plitt 1992) metal detector investigations of major areas of the Palo Alto battlefield in 1992 and 1993 for the National Park Service (and recovery of a variety of military-related artifacts) have defined a core area of several hundred acres adjacent to and east of the Matamoros-Port Isabel road where the May 8, 1846, fighting was concentrated (Figure 2). Haecker's work helps to place the Mexican and American lines at different stages of the battle (Haecker 1994; Haecker and Mauck 1997:29-48).

Archaeological survey efforts were concentrated in those areas of the battleground where the soldiers from both sides were thought to have camped, and also those areas where the wagon baggage trains were likely kept during the battle (e.g., Haecker and Mauck 1997:Map 3). Four battle-period archaeological sites were identified at Palo Alto, one at Arista Hill (near the Mexican baggage train) and three by Palo Alto Resaca in the vicinity of the American positions. One U.S. camping area along the resaca (41CF92-7) is particularly interesting in that it had an extensive scatter of reconstructible olive green English wine bottles dating to the 1840s-1850s; more recently, lead musket balls of American manufacture have been noted on the surface from this camping area (Aaron Mahr, 1997 personal communication). Because all the archaeological sites recorded at the Palo Alto Battlefield National Historic Site are within the boundaries of previously defined site 41CF92—which covers the entire battlefield area—each of the localities that were recorded were assigned consecutive subset numbers, i.e.: 41CF92-1, 41CF92-2, etc. (Carolyn Spock, 1995 personal communication) to retain provenience information from intra-site contexts.

Site 41CF92-1

This small site (900 square meters, or 0.2 acres)

is on a cleared field in the flat salt prairie immediately west of Resaca Palo Alto. Late 19th to early 20th century ceramic sherds and bottle glass, including plain whiteware, lead-glazed Mexican coarse earthenwares, and colorless/patinated bottle glass, occurred in a tight surface cluster at the resaca side of the cleared field. The site is not associated with the Palo Alto battle.

Site 41CF92-2

A diffuse surface scatter of pre-1850 bottle glass sherds were noted over about 1.1 acres on the flat salt prairie between a meander loop of Resaca Palo Alto. The patinated bottle glass included aqua medicine and dark olive green wine bottles (Table 1). Based on the likely age of the bottle (cf. Jones 1986), and the location of the sherds near American battle and camp areas, the bottle glass sherds from 41CF92-2 are probably domestic refuse associated with the U.S. forces at the Palo Alto Battlefield. Additional systematic surface collections, metal detecting, and shovel testing of 41CF92-2 should be done to document its horizontal and vertical integrity and gather archaeological information on the functional character of the archaeological deposits.

Site 41CF92-3

Site 41CF92-3 is primarily a late 19th-early 20th century farmstead on a low natural levee adjacent to Resaca Palo Alto. Two dark olive green wine bottle sherds suggest that the site was also used sometime prior to the Civil War, but these materials occur in a context mixed with more recent historic trash deposits. From surface archaeological evidence alone, it covers about 1.8 acres. A large assortment of plain whitewares, decalcomania whitewares and porcelain, lead-glazed earthenwares, and bottle glass were identified from the site during the investigations.

Because the site is not clearly associated with the Palo Alto battle, and the few earlier archaeological materials are in dubious contexts, no further archaeological investigations are warranted as they pertain to the full documentation by the National Park Service of the Mexican-American War archaeological remains on the site. The site may have other research values, however, that relate to the study of more recent agricultural settlements in the lower Rio Grande.

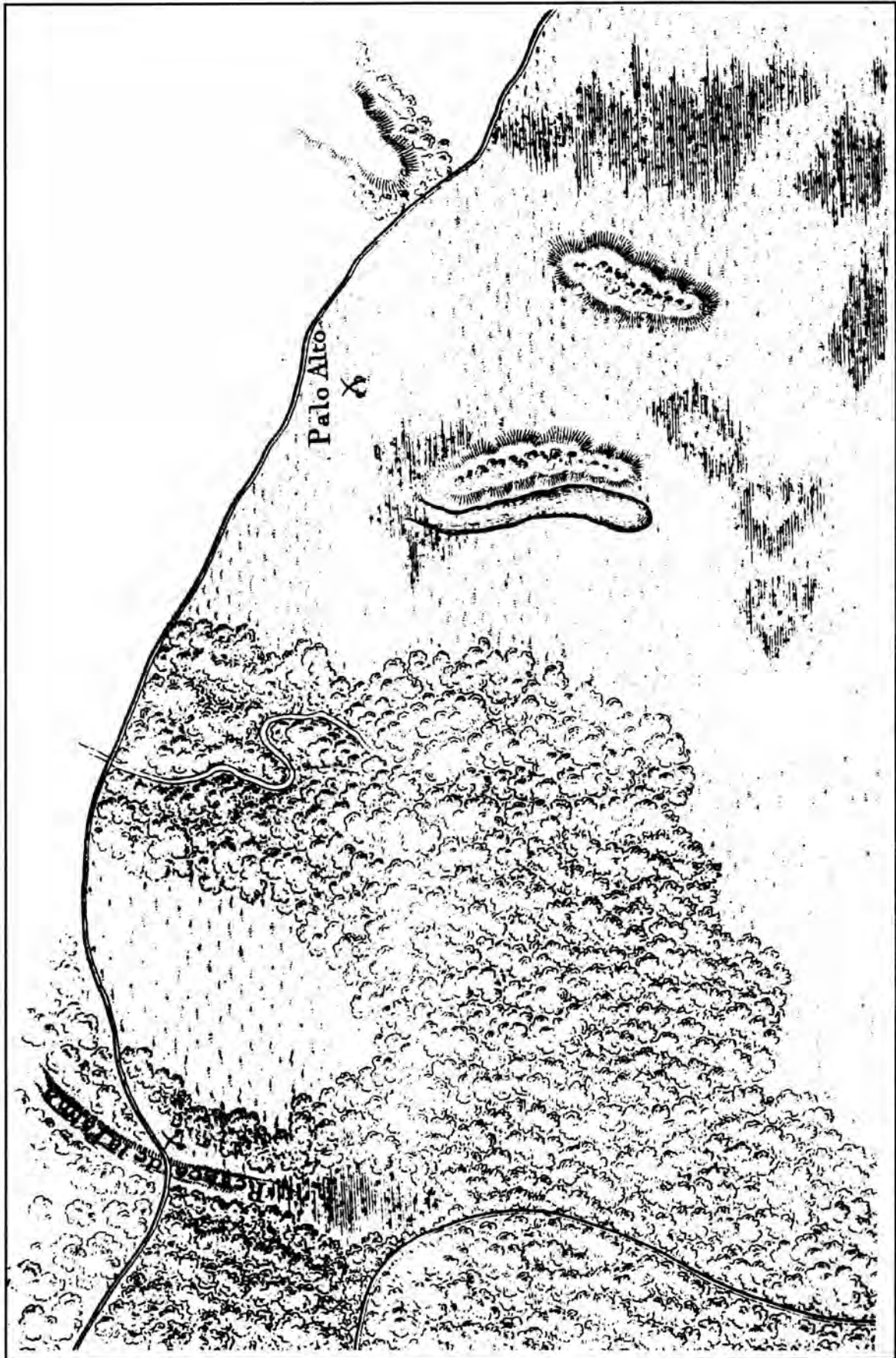


Figure 2. Details of the Palo Alto and Resaca de la Palma Battlefields, from Webster's (1847) Map of the lower Rio Grande.

Table 1. Artifacts Documented from Palo Alto Battlefield Sites

Palo Alto Battlefield (41CF92-1)

- 3 plain whiteware body sherds
- 2 lead-glazed Mexican earthenware sherds
- 1 patinated bottle glass body sherd

Palo Alto Battlefield (41CF92-2)

- 4 dark olive green bottle glass body sherds (patinated), wine
- 2 aqua bottle glass body sherds (patinated), medicine

Palo Alto Battlefield (41CF92-3)

- 2 salt-glazed earthenware body sherds
- 19 Mexican lead-glazed earthenware body sherds
- 1 porcelain body sherd with decalcomania
- 6 whiteware sherds: 1 plain, 2 with decalcomania, 1 flown blue, 1 overglaze hand-painted, and 1 unidentified decoration
- 2 dark olive green bottle glass body sherds
- 1 clear glass lip, tableware
- 1 clear glass, body sherd
- 1 green bottle glass body sherd, with embossed letters

Palo Alto Battlefield (41CF92-4)

- 7 sherds from a salt-glazed stoneware bottle

Palo Alto Battlefield (41CF92-5)

- 3 dark olive green bottle glass body sherds

Palo Alto Battlefield (41CF92-6)

- 5 clear bottle glass, body sherds (from machine-made bottle)
- 1 salt-glazed body sherd with interior Albany glaze

Palo Alto Battlefield (41CF92-7)

- 20 dark olive-green bottle glass sherds: 5 lips with wine finish, 7 body sherds, and 8 bases with deep pushups and sand pontils
- 2 olive-green bottle glass body sherds, probably from champagne bottle
- 1 cut bone

Palo Alto Battlefield (41CF92-Area C)

- 2 olive-green bottle glass body sherds
 - 2 dark olive-green bottle glass sherds, 1 body, 1 base with pushup
 - 1 olive green paneled bottle body sherd, embossed with "...ER.."
 - 2 aqua bottle glass body sherds
 - 2 colorless bottle glass body sherds
 - 3 plain whiteware sherds, 2 body and 1 base
 - 1 black transfer-printed whiteware body sherd
 - 2 spongeware/spatterware body sherds
-

Site 41CF92-4

A small scatter (250 square meters) of a single mid-19th century salt-glazed stoneware bottle was identified at 41CF92-4. The site is on the south slope of a low cactus-covered hill, locally called Arista's Hill, and in the general area of the presumed Mexican wagon/baggage train (see Haecker 1994:Figure 13; Haecker and Mauck 1997:Map 3). Resaca Palo Alto is to the north of the hill, with an unnamed resaca about 25 meters to the south of the stoneware sherd scatter. The salt-glazed stoneware bottle is a light-gray to brown color on the exterior surface, and only lightly glazed on the interior of the bottle. It probably contained ale or beer.

The site may possess research significance if it can be reliably linked to the battlefield itself, specifically if it is an archaeological deposit related to the Mexican wagon/baggage train area. Additional archaeological survey (with systematic and controlled metal detecting) is warranted in the vicinity of 41CF92-4, particularly across the unnamed resaca south of the site, to determine if other such non-weapon/armament-related archaeological deposits are present that can be associated with the Mexican positions.

Site 41CF92-5

Dark olive green bottle glass sherds from English wine bottles were found on the surface at 41CF92-5, on the flat prairie overlooking Resaca Palo Alto, and adjacent to the old Point Isabel-Matamoros road. Three mid-19th century wine bottle glass sherds were identified over about a 0.6 acre area, then covered in thick grasses.

The site may possess research significance if it can be reliably linked to the battlefield itself, specifically if it is an archaeological deposit related to either U.S. or Mexican soldier camps or wagon/baggage train areas. Additional archaeological survey, including surface inspection and systematic and controlled metal detecting, is warranted at 41CF92-5 to determine if intact archaeological deposits are present at the site.

Site 41CF92-6

Site 41CF92-6 represents post-1870 archaeological deposits that may be associated with a farmstead

along the south side of Resaca Palo Alto that is shown on the 1955 Los Fresnos USGS 7.5' topographic map. The surface artifact scatter on the broad, flat salt prairie covered about 625 square meters, and consisted of 20th century machine-made clear bottle glass sherds and one salt-glazed sherd with an interior Albany glaze slip (dating from about 1870-1920; see Greer 1981).

Because the site is not associated with the Palo Alto battle, no further archaeological investigations are warranted as they pertain to the full documentation by the NPS of the Mexican-American War archaeological remains on the site.

Site 41CF92-7

Cutbank erosion along the east natural levee bank of Resaca Palo Alto exposed battle-era wine and champagne bottle glass sherds from between five to eight different bottles at site 41CF92-7. The cutbank is about 1 meter in height, and the 19th century bottle concentration covers about 100 square meters along and immediately adjacent to the bank. The bottles appear to be eroding from an archaeological deposit buried about 5-10 cm below the surface, perhaps within a buried trash deposit. One cut animal bone was located about 50 meters south of the site along the resaca, and may be from a related archaeological deposit.

Twenty-two mid-19th century bottle glass sherds were identified from site 41CF92-7. They include two olive green bottle glass body sherds, probably from champagne bottles, and 20 1830s-1840s (cf. Jones 1986; Earls et al. 1996) wine bottle glass sherds of dark olive green color. There were eight, thick, round base sherds with deep pushups and sand pontils, five lips with two-part down-tooled finishes and finish heights of 26 mm (the finish being applied with a lipping tool), and seven body sherds. Based on the 26 mm finish heights, the 20 mm bore diameters, and the 93 mm base diameters, the wine bottles were quart-sized, with an estimated 750 milliliter capacity.

Because of the site's location along the bank of Resaca Palo Alto, as well as its proximity to the Point Isabel-Matamoros road, we suspect that it is a trash deposit disposed of from U.S. wagon/baggage trains or U.S. soldier camp-debris. As such, the archaeological deposits have the potential to contain a representative assortment of the non-armament

kinds of artifacts used and discarded by U.S. soldiers during the Palo Alto battle.

Systematic surface inspection of the Resaca Palo Alto bank should be conducted both north and south of 41CF92-7 to locate other battlefield-era trash deposits, along with bank profiling to define in situ deposits. Continued or accelerated bank erosion is adversely affecting the site, as is road grading/maintenance along the top of the bank. If the erosion continues, the archaeological deposits could be completely eroded and lose contextual integrity. Stabilization of the cutbank may be warranted, depending upon the rate of erosion.

Site 41CF92-8

Site 41CF92-8 is a 20th century farmstead with collapsed structure ruins, situated on a low, thick brushland-covered, rise to the north and east of Resaca Palo Alto. Surface archaeological materials cover about 2400 square meters (0.6 acres), consisting of wire nails, clear bottle glass, and architectural remains. The site is not associated with the Palo Alto battle.

Area C

Area C on the Palo Alto Battlefield is just west of the heaviest concentration of battlefield-related

military artifacts (see Haecker and Mauck 1997: Maps 3-5; Perttula et al. 1997a:Figure 3), west of Haecker's Search Area 1, and east of Resaca Palo Alto. It may be a U.S. camping area. During the reconnaissance of the battlefield, a narrow and previously plowed strip of Area C was examined that runs parallel to the old Port Isabel-Matamoros road, and a diffuse surface scatter of Mexican-American War era artifacts was identified (see Table 1).

Mid-19th century artifacts found in Area C include bottle glass and plain and decorated white-ware sherds. The bottle glass comprised aqua bottle glass sherds from a medicine bottle, one olive green sherd with ".ER." on the side of a paneled bottle, and dark olive green wine bottle glass sherds with a deep push-up base. In addition to three plain white-ware base and body sherds, also noted in Area C was one body sherd with a black transfer print, and two red and green spongeware/spatterware sherds.

This area of the Palo Alto Battlefield site may represent a significant archaeological deposit related to either U.S. or Mexican soldier camps or wagon/baggage train areas. Additional survey should be completed here, including surface inspection and controlled surface collection (after the area is plowed), along with systematic and controlled metal detecting.

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ARCHAEOLOGICAL INVESTIGATIONS AT MEXICAN-AMERICAN WAR BATTLEFIELDS AND RELATED SITES IN TEXAS

Part II: The Palo Alto House or Inn (41CF92-9), Also Known as the Taylor Tavern

Timothy K. Perttula and Bo Nelson

ABSTRACT

Archaeological remains at the Palo Alto Inn, a Mexican-American War-era site north of the Palo Alto Battlefield in Cameron County, Texas, are discussed and documented.

INVESTIGATIONS

In this paper, we discuss the archaeological remains at the Palo Alto Inn, a Mexican-American War-era site along Resaca Palo Alto, a short distance north of the May 8, 1846 Palo Alto Battlefield, in Cameron County, Texas. The Palo Alto House or Inn (41CF92-9) operated between about 1847-1853, just north of the Palo Alto battlefield on the Matamoros-Port Isabel wagon road. A July 14, 1847 advertisement in the *American Flag* (a U.S. Army of Occupation newspaper published in Matamoros, Mexico) stated that the Palo Alto House was "now open for the reception of guests on the battleground of Palo Alto. Comfortable conveyance furnished from the opposite side of the river, at a reasonable price. Preparation is being made for horse racing to come off on Sunday next and we advise those who wish to see 'lots of fun,' not to fail going" (quoted in Haecker and Mauck 1997:52).

One of the selling points of the Palo Alto Inn was its proximity to the battlefield as a tourist attraction and a place to collect souvenirs (Haecker 1994:39). The Inn was "one house, a sort of tavern kept by an American of the name of Taylor" (Coker 1992:93). According to Harriet Chapman, who stayed at the Taylor house or tavern, the Palo Alto House or Inn was "a rough board building built on the great plain of Palo Alto, not a large tree in sight, nothing but chaparral and not a glimpse of human habitation" (Coker 1992:93). In the summer of 1849, Mr. Taylor abandoned the Inn and left for California, although apparently Mrs. Taylor kept the establishment open.

By 1853, the Palo Alto House or Inn was abandoned (Haecker 1994:40). Butler (1995:64) suggests that the Inn or tavern was actually burned down during an Indian raid.

The Palo Alto House or Inn site covers an estimated 6,000 square meters (1.5 acres) along a low natural levee paralleling Resaca Palo Alto. Most of the site is exposed immediately adjacent to a maintained dirt road, in limited areas of erosion, and the site itself is covered in thick mesquite, Spanish dagger, and cactus brush. Two areas of hand-made brick concentrations on the north side of the road are likely to be remnants of chimneys associated with the structures that stood at the site, and we presume that other features—structure remnants, wells, and trash deposits—are preserved at the site.

During visits in 1994, 1997, and 1998, large quantities of mid-19th century artifacts were visible on the surface of the Palo Alto House or Inn. Particularly common is a wide assortment of English-made decorated whiteware ceramics (mainly from the Staffordshire potteries), most notably transfer-printed (n=65) and hand-painted (n=46) examples (Figure 1). Also present are salt-glazed American-made stoneware (n=22), yellowware (n=12), dark olive green wine and olive green champagne bottle glass (n=11), square cut nails and horseshoe nails, kaolin pipe sherds, U.S. military buttons, and U.S.-made lead musket balls (Figure 2 and Table 1). Few Mexican-made artifacts are in the surface materials, other than sherds of lead-glazed jars and bean pots, and one Mexican *real* coin. There are also two sherds of Mier Plain, a locally-made coarse earthenware found on ca. 1780-1900 Tejano sites along the lower Rio Grande (Perttula et al. 1999).

The Palo Alto Inn site has great research potential—because of its short-term occupation (a maximum of six years), preserved structural and trash features, and intact archaeological deposits—for learning more about the archaeology and



Figure 1. Decorated Whiteware Ceramics, Kaolin pipe bowl sherd, Salt-glazed stoneware sherd, and yellowware sherds from the Palo Alto Inn. Top row, left to right: purple transfer-printed, purple transfer-printed, purple transfer-printed, blue transfer-printed, hand-painted, blue annular ware; Second row, left to right: salt-glazed stoneware, dark blue spongeware, blue-red spongeware/spatterware, blue shell-edged, hand-painted; Third row: purple transfer-printed, black transfer-printed, kaolin pipe bowl, yellowware, black-white-blue annular ware.



Figure 2. Selected Artifacts from the Palo Alto Inn. Top row, left to right: olive green bottle lip, military button; patinated olive green bottle lip; Bottom row, left to right: patinated olive green bottle lip, dark olive green bottle base, cut nail.

Table 1. Artifacts Documented from the Palo Alto Inn (41CF92-9)

1994

1 square nail

1 military brass button

6 dark olive-green bottle glass sherds; wine and champagne finishes

4 aqua bottle glass body sherds; medicine bottle

1 hand-made earthenware body sherd (Mier Plain)

2 yellowware body sherds

7 salt-glazed stoneware sherds

49 decorated whiteware sherds: 2 shell-edged, 1 flown blue, 7 spongeware/spatterware, 13 hand-painted, 9 annular ware, and 17 transfer-printed (red, purple, black, and light blue)

hand-made brick

1997

2 yellowware body sherds

2 light salt-glazed stoneware body sherds

18 decorated whiteware sherds: 9 transfer-printed, 2 hand-painted, 2 spongeware/spatterware, 1 purple cut sponge, 1 shell-edged, and 3 annular ware

1 kaolin pipe bowl

1 military brass button

3 U.S.-made lead balls

1998

3 horseshoe nails

1 metal chain link

1 brass percussion cap

1 brass button or cuff link stud

2 kaolin pipe stem sherds

5 dark olive green bottle glass sherds—wine and champagne finishes

7 Mexican lead-glazed sherds

2 Mexican lead-glazed bean pot sherds

1 coarse earthenware sherd (Mier Plain)

6 yellowware body sherds

13 salt-glazed stoneware sherds

130 decorated whiteware sherds: 8 shell-edged (7 blue, 1 green); 12 flown blue, 1 flown black; 16 spongeware/spatterware (13 blue, 1 red-blue, 2 red); 31 hand-painted, polychrome; 23 annular ware; 39 transfer-printed (22 blue, 1 dark blue, 2 black, 7 purple, 3 brown, 1 green, 3 red)

material culture record of early frontier and statehood Texans along the lower Rio Grande. Because of its remote location, however, and abundant Mexican-American War-era artifacts, the site is subject to the depredations of metal detectorists and artifact looters from the Brownsville area (see Haecker and Mauck

1997:53). The site warrants preservation and long-term management by the National Park Service, and upon excavation and interpretation, would comprise a significant educational exhibit associated with the Palo Alto Battlefield National Historic Site.

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ARCHAEOLOGICAL INVESTIGATIONS OF MEXICAN-AMERICAN WAR BATTLEFIELDS AND RELATED SITES IN TEXAS

Part III: Sites Within the City of Brownsville

Timothy K. Perttula

ABSTRACT

During several construction activities in the Brownsville, Texas area, relics of the Mexican-American War have been unearthed. An attempt has been made to document these artifacts and to make suggestions for future investigation of the area.

BACKGROUND

Occasionally, Mexican-American War period military artifacts are exposed in the city limits of Brownsville through construction-related activities, although their archaeological contexts have not been well established. During the construction of the Market Square in November 1984, for instance, cannon balls and other artifacts were found by construction workers, and reported in the Brownsville newspaper (Correspondence on file, Office of the State Archeologist, Texas Historical Commission). Similar kinds of Mexican-American War-era artifacts were reported during another construction project on Washington Street between the Stillman House Museum and the main downtown border station in 1995 (Thomas B. Carroll, 1995 personal communication).

Mexican-American War fortification features may also be preserved in the downtown area of Brownsville. A 500+ foot-long earthen parapet and ditch was built by the Mexican forces about a mile north of Fort Brown, near a major bend in the river (not far from the present Border Station) and between the two main roads leading north out of Matamoros. While surface evidence of the parapet would have been obliterated by downtown construction, it is possible that subsurface remnants of the parapet and ditch could be preserved under modern fill and construction debris, along with artifacts from the Mexican forces using the parapet, and U.S. military artifacts (such as cannon balls fired from Fort Brown during the siege).

Stillman House (41CF94)

Possible Mexican-American War era artifacts were also recovered in 1995 at the Stillman House (41CF94) during Museum maintenance activities outside and under the 1850 structure built by Charles Stillman, and which he lived in until 1866 (see Hart 1996:102). The Stillman House sits on a flat alluvial terrace overlooking the Rio Grande.

Most of the materials were found about 30-45 cm below the surface. Stillman House Museum personnel collected mid-19th century olive green wine and medicine bottles, glass jar sherds, Davenport whiteware ceramics with "IRONSTO..." and "DAVENP..." back markers, and a 4 lb. cannonball during landscaping and sewage line work; their locations were noted on the Lot 7 and 8 plat map of the museum grounds, and the author documented the artifacts during a June 1995 survey effort (Photographs of the Stillman House artifacts are on file at the Archeology Division at the Texas Historical Commission, Austin) (Table 1).

Table 1. Artifacts Documented from the Charles Stillman House (41CF94)

-
- 1 olive-green wine bottle with pushup base
 - 1 aqua paneled medicine bottle
 - 1 4 lb. iron cannonball
 - 3 plain whiteware sherds with maker's marks, "Lion and Unicorn," "IRONSTO...", and "DAVENP..."
 - 1 brass spigot
 - 1 piece of pyrite
 - 1 colorless glass jar
-

The Stillman House may have intact Mexican-American War-era through ca. 1870 archaeological deposits preserved under the house. Should the

opportunity present itself, and with the permission of the Stillman House Museum, a program of shovel testing and 50 x 50 cm units would be important to conduct in yard and under-house contexts at 41CF94 to document the horizontal and vertical integrity of the deposits, and assess the research potential of the archaeological deposits.

41CF129 (Building 2 at Fort Brown)

Excavations at Building 2 at Fort Brown occasioned by the expansion of the U.S. Customs facility at the Brownsville Gateway Border Station encountered significant and relatively discrete pre-1850 archaeological deposits buried under the artificial Rio Grande levee and in the footprint of the structure (Moir et al. 1993). The archaeological deposits encountered at the Border Station predate the 1868 construction and use of the new Fort Brown around Fort Brown Resaca, located about 0.5 miles from the original Fort Brown (see Carlson et al. 1990:20 and Figure 12).

The types of domestic and architectural remains found in the lowest archaeological deposits at 41CF129 suggest they represent artifacts and animal bones discarded during a ca. 1830s-1840s occupation by tenants of the city of Matamoros working *los ejidos* or municipal property on the north side of the Rio Grande (Moir et al. 1993:8). The hand-made brick and small cut nails further suggest that the residents of 41CF129 lived in a lightly-framed wood structure, perhaps an *jacal*. An 1848 lithograph of Matamoros by John Phillips and Alfred Rider depicts four such wood structures on the north bank of the Rio Grande, directly across the river from the Alameda in Matamoros (Sandweiss et al. 1989:112), and not far from the general area of 41CF129. A ca. March-April 1846 map of Matamoros and the Fort Brown area shows a field or *labor* in the vicinity of 41CF129, just north of the *Campamento Americano* (map on file at the Center for American History, The University of Texas at Austin). Other maps of the period, and contemporary descriptions of the Fort Brown area in March 1846, indicate that much of the land around the fort was heavily cultivated, with several structures in the vicinity (Aaron Mahr, 1997 personal communication).

A wide range of domestic and architectural remains were recovered from the ca. 1830s-1840s occupation, particularly large numbers of small (less

than 6d in size) cut nails and imported European (British) ceramic tablewares. The assemblage includes: locally-made and unglazed quartz-tempered Mexican ceramic vessels; Mexican lead-glazed wares and tin-glazed majolica; English cream-ware/pearlware (with shell-edged and annular/banded decorations); English whitewares (decorated with transfer-print, blue bands, hand-painted, and blue spatterware), blue and white-banded yellowware; redwares; decorated white clay or kaolin pipes; buttons; sand-tipped pontil olive green bottle glass and free-blown olive green, black (dark olive green) and aqua bottle glass; hand-wrought nails; hand-made brick; cut nails; very thin window glass; and a brown gunflint (Moir et al. 1993:85).

Associated in good context with these domestic remains were several military artifacts that may be associated with the May 1846 siege of Fort Brown (or Fort Texas). Among the military artifacts were French and English gunflints, ca. .70 and .72 cal lead shot, a ca. .28 cal copper musket percussion cap and a ca. .19 cal ribbed pistol percussion cap, 1.6 cal iron grapeshot, brass cannon friction primer tubes, and copper wire lanyards for firing cannon friction primers (see Moir et al. 1993:Figure 27a-e and Figure 30c-d).

Proposed Inspection Dock Excavations

Similar 1840s archaeological deposits to those documented in the Building 2 excavations (Moir et al. 1993) were encountered during 1991-1992 investigations of a proposed U.S. Customs inspection dock by the National Park Service (NPS). The NPS work was about 100 meters south of Building 2, and 120 meters east of the Rio Grande (Potter 1992; Hunt 1992).

This work identified stratified 1840s deposits and cultural features to depths of 1.8 meters below surface (bs) in alluvium, underneath modern fill and several construction episodes associated with the 19th and 20th century use of modern Fort Brown. One pit feature was several meters in size and was 0.22-0.95 meters in thickness. Hunt (1992:15) suggests that the buried deposits and pit features "may actually represent earlier [pre-1848] Mexican occupations of the Old Fort Brown site location prior to the post's construction." As mentioned above, 1846 maps of this area, and an 1848 lithograph, show existing structures, roads, and agricultural

fields there.

The 1840s archaeological deposits contain an assortment of domestic and architectural items. These include ball clay pipe stem and bowl fragments, light blue and light mulberry transfer-printed whiteware ceramics, plain whiteware, annular ware (mocha), hand-painted lusterware, olive green (champagne bottle with a deep pushup base and black bottle glass, thin (mean thickness of 1.36 mm) window glass, cut nails (n=43), hand-made brick

fragments, a mud dauber nest, and copper wire. No military artifacts were found in the pre-Fort Brown deposits. In strata 14, dated to the early 1850s, Hunt (1992) recovered one sherd of a brown paste earthenware (probably Mier Plain), which he considered the product of local Mexican potteries. Military artifacts recovered in the NPS excavations—percussion caps, brass buttons with army eagle design, lead spatter, cupric star, and a gunstock decoration—also date to the early 1850s.

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LOOTING AT TWO ARCHAEOLOGICAL SITES ON PUBLIC PROPERTY IN WESTERN KERR COUNTY, TEXAS

Bryant Saner, Jr.

ABSTRACT

The State of Texas has the Antiquities Code to prevent the destruction of archaeological sites on public property. This does not seem to stop some individuals. Two sites on state property in western Kerr County, Texas, have been illegally dug by unknown persons in the last four to five years. These sites required measures specific to each locale to deter the destruction. Using a variety of creative measures, the author worked with several state and federal agencies to get such deterrents in place. One site is a habitat for the endangered Golden-cheeked Warbler. This presented a problem; however, it was overcome and the measures to stop the destruction at the site proceeded. The other site required several visits from personnel from two divisions of the Texas Department of Transportation (TxDot). Fill material was placed in the illegally dug holes on the right-of-way (ROW) at TxDot expense. Significantly, the destruction of the sites stopped and no further loss to date is noted. Monitoring of these sites will be done on a regular basis by several different people and agencies.

INTRODUCTION

Kerr County is located approximately 60 miles northwest of San Antonio. Kerrville is the county seat. Interstate 10 passes through the northern portions of the county. The primary river system is the Guadalupe River. The start of the river is in two areas. The headwaters of the South Fork of the Guadalupe River are found in the extreme southwestern part of the county, while the North Fork headwaters are in the western area of the county. These branches come together near Hunt to form the Guadalupe River. The sites discussed in this report are on those drainage systems.

In the State of Texas, destroying historic or prehistoric archaeological sites and/or removing artifacts from sites on public property without the required permits is unlawful under the Antiquities Code of Texas (Amended Sept 1, 1999 [Potter 1999]). The Antiquities Code defines public property as "any land under the jurisdic

tion of the State of Texas." This law covers property governed by an entity created and operating under the laws of the State of Texas, including a city, county, school district or special district. The Antiquities Code makes it unlawful for a person to enter, or attempt to enter, private land without the consent of the owner or his representative to intentionally destroy historic or prehistoric archaeological sites or remove any artifacts from these sites. A person violating this law is guilty of a misdemeanor and shall be fined not less than \$50.00 and not more than \$1000.00 and/or confined in jail for not more than 30 days. Each day of continued violation is considered a separate offense. The code allows for sites on public and private property to be designated as State Archeological Landmarks (SAL). All cultural resources, historic or prehistoric, within the public domain of the State of Texas are considered State Archeological Landmarks. However, to have a site officially designated as a SAL, the site must be nominated and approved for designation by the Texas Historical Commission. SAL status may also be given to sites on private property. This is only done with written permission of the landowner. The official SAL designation makes it easier to prosecute violators under Texas law (ibid.). It is also against the law to damage, destroy or vandalize a right-of-way of a Texas highway (McGraw 1999) (See Sections 28.03 & 28.04, Title 7, Texas Penal Code, Vernon's Texas Codes Annotated). Federal property falls



under a series of laws, prominent among them is the National Historic Protection Act. Cases may arise where certain Federal Laws and the Antiquities Code of Texas are both applicable (Scott 1999).

The term "looting," as used in this report, is defined as violating the Antiquities Code or laws of Texas regarding historic and prehistoric archaeological sites. Looting is an ongoing problem in Texas. This problem is fueled by the value placed upon artifacts and prices paid for them by some individuals. People even sell these artifacts to obtain money to buy drugs (Hester 1998). There are folks that are not aware of the Antiquities Code; however, ignorance is no excuse. Others have knowledge of the Antiquities Code and choose to ignore it. Some collectors let their enthusiasm override good judgment. Professional archaeologists cannot be overlooked either, especially those that are in violation of antiquity permits issued by the Texas Historical Commission. The point is, these people are breaking the law, as well as destroying archaeological sites, thereby reducing the opportunity for future generations to have access to undisturbed sites.

SITES

The first site, 41KR493, is on the North Fork of the Guadalupe River and consists of a large burned rock midden and a rockshelter located on the Kerr Wildlife Management Area (KWMA) under the jurisdiction of Texas Parks and Wildlife Department (TPWD). It is the only pictograph site recorded in Kerr County (Saner 1996a). The associated midden is 28 meters x 34 meters, with a rise of 1 meter. The North Fork of the Guadalupe River is 60 meters southeast from the midden. The northwest edge of the midden is 20 meters from the center of a state highway and easily accessible from this highway. However, the site was covered with brush and not visible from the road. Looters have made several large pits in the center of the midden. Ironically, one is actually under a sign stating the penalties for destroying archaeological sites on state property. This site was visited by the author on a regular basis for monitoring purposes. It was noted on the first visit that approximately ten percent of this midden had been destroyed by illegal digging. Over the next few years, it was noticed that the disturbed areas increased slowly.

The second site (41KR537) is a burned rock midden on the South Fork of the Guadalupe River in southwest Kerr County. A state highway was built through the middle of the midden many years ago. The majority of the remnants of the midden are on the north side of the

highway and this is where the majority of the destruction is found. There is a fence that separates the right-of-way and privately owned land. Approximately 3 to 4 meters north of the fence is a steep bluff. On the south side of the highway, areas of cultural debris are seen. There is no fence on the south side of the highway. The South Fork of the Guadalupe River is approximately 65 meters south of the site. On the north side of the highway, an area approximately 17 meters long and 4 meters wide is disturbed, including right-of-way and private property. There was approximately 12 meters of fence hanging free; the soil under it has been removed by the "looting." This causes erosion during rainy weather, allowing large rocks to roll out on to the highway. The rocks could have caused serious damage to a vehicle, resulting in serious injury or loss of life. The digging on the south of the highway is much less extensive. A 1 x 2-meter hole and several small holes, less than a meter in diameter and less than 30 centimeters deep, were noted.

DISCUSSION

The destruction at 41KR493 was discovered in January of 1996. Approximately 10% of the site was damaged at the time of detection. The illegal digging was being done on a slow, steady basis and herein lies the problem. At this rate the site could sustain considerable damage over the years leading to a possible complete loss of the site. The rate of destruction would continue and perhaps increase if deterrents were not put in place.

This site is about 20 meters from a highway, but could not be seen because of thick brush coverage (Figure 1). This prevented the looters from being detected and provided a sense of security while illegal digging took place. It was decided that clearing the brush to allow an unobstructed view of the midden from the highway would be a large part of the solution (Figure 2). This plan was discussed with TPWD personnel and it was agreed that clearing would be the optimal solution. Another problem arose at this time. The site is located in a habitat area of an endangered species, the Golden-cheeked Warbler (*Dendroica chrysoparia*).

This bird's habitat requires a combination of Ashe junipers (*Juniperus asheii*), also known as cedar, and broad-leaved trees greater than 10 feet in height. There are many cedar and a few large broadleaf trees on the site. The Golden-cheeked Warbler's habitat is in the canopy of these trees above 10 feet (Beardmore et al. 1995). To clear the brush that is less than 10 feet in



Figure 1. 41KR493 midden viewed from the highway prior to clearing the brush.



Figure 2. 41KR493 midden viewed from the highway after the brush is cleared.



Figure 3. 41KR537. Fire-cracked rock from looter's hole on highway right-of-way.



Figure 4. 41KR537. Destruction to the midden on highway right-of-way.

height and trim the trees that are greater than 10 feet in height up to 10 feet above the ground would not harm the habitat. Permission to trim the brush and trees was obtained from the U. S. Fish and Wildlife Service (Bill Armstrong personal communication 1998). TPWD personnel gave clearance to proceed with clearing the brush and required that U. S. Fish and Game Service guidelines for the Golden-cheeked Warbler habitat be met. Trimming and clearing took place in October of 1998. As a further deterrent, the brush and limbs that were cut at the site along with brush brought from other areas was placed in the open holes. An ongoing effort is being made to cover the entire midden with brush brought from other areas to make it a little more difficult to dig in this midden.

The site is being continuously monitored. This author visits the site on a regular basis. Several preservation-minded individuals that live and work in the area also check on the site regularly. The Kerr County sheriff's department along with Game Wardens for the TPWD were notified of the situation at 41KR493 and they also check the site when in the area.

Destruction at 41KR537 was discovered in July of 1996 (Figures 3 and 4). The looting was reported to Mike Davis, an archaeologist with the Office of the State Archeologist. Nancy Kenmotsu, Supervisor of Archeology in the Environmental Affairs Division of the Texas Department of Transportation (TxDOT), was notified by Mr. Davis. Several visits to the site by TxDOT over a period of two months revealed that the destruction was continuing.

The site was recorded in July of 1996 (Saner 1996 b). An archaeologist with TxDOT visited the site in early September. At that time, a map of the locale was sketched and flagging tape was placed around the disturbed area. Another visit by a TxDOT archaeologist took place in mid-September to monitor the destruction, photograph the site and put up signs stating that it is a violation of the law to damage, destroy or vandalize the right-of-way of a Texas highway. The penalties for doing this are spelled out on the sign. It was proposed that a notice be written and submitted to local newspapers regarding the penalties, the significance of damage and cost of repairs to state property. The private landowner whose property was disturbed posted No Trespassing signs on the fence separating the Right-of-way from private land. The open holes on the Right-of-way were filled with a white roadbase-type material to discourage further looting (Figure 5). A white-colored material was chosen so that when excavation was done cultural material could be distinguished from the fill material.



Figure 5. White fill material in looters' hole on highway Right-of-way. Note large rock near reflector that could roll onto highway.

At this time, it was determined that to correct the damage to the Right-of-way would required resloping with heavy equipment. A proposal for limited tests on the Right-of-way was written. Excavation of three 1-meter hand-dug units at set intervals across the site was described. A report of investigation and description of materials will be produced within three months of the initiation of field work and submitted to the Texas Historical Commission, Division of Antiquities Protection, now the Archeology Division of the Texas Historical Commission, for review. Following concurrence from the Texas Historical Commission, a final report is to be submitted to the Southern Texas Archaeological Association for publication (Kenmotsu 1996).

The site is visited by the author on a regular basis. There are several individuals living in the area that check the site every time they pass by it.

41KR493 and the portion of 41KR537 on the Right-of-way are designated State Archeological Landmarks. This designation provides firm legal avenues to prosecute looters caught at these sites. Violators will be prosecuted to the fullest extent of the law. A strong effort would be made to have the results of the prosecution published in a local newspaper in hopes of sending a message to other would-be looters concerning these and similar archaeological sites on public property in this area.

CONCLUSION

The deterrents put in place to prevent further looting on these sites have been successful to date. The clearing of brush at 41KR493 has prevented further destruction to the midden by making it visible from the state highway and removing a feeling of security. The signs posted, surveyor's tape strung around the site and the fill

material placed in the looter's pits at 41KR537 has worked well. No further destruction has been noted and no more rocks have washed into the road way. The excavation at 41KR537 has been delayed because no further looting is taking place and major TxDOT archaeological projects in other areas of the state have lowered the priority of this site (Nancy Kenmotsu, personal communication 1999).

41KR493 will continue to be maintained. It will need periodic brush clearing. This will be done on an as needed basis. Cut brush will also be hauled in and piled on the midden to deter further destruction. 41KR537 will need continued monitoring and excavation of the highway right-of-way so it may be regraded to prevent rocks from rolling into the roadway. 41KR537 is an important archaeological site; however, prevention of injury to people and damage to vehicles should take the highest priority at this site.

The important outcome is that no further site

destruction has occurred since the deterrents were put in place. Individuals in the area are also aware of the problems at these site and check them every time they pass by. These sites will also be monitored on a regular basis by several different agencies and organizations to be sure the looting does not recur. Similar efforts elsewhere may have similarly successful outcomes.

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COMMENTS ON MANUFACTURE OF ARROW POINTS

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ABSTRACT

Comments are given on the experimental manufacture of chert arrow points, in regard to selection of flake blanks and force application techniques.

INTRODUCTION

Data from experimental flintknapping are useful in the study of prehistoric lithic manufacturing patterns. While experimental manufacture of stone artifacts may not use the full range of techniques used by prehistoric flintknappers, the general principles of lithic manufacturing can be studied to provide data for lithic analysis.

This article gives data and comments on the experimental manufacture of unifacial and bifacial arrow points. Heat-treated cherts from Central Texas were used for all experiments. Flake blanks for the manufacture of arrow points were selected from bifacial reduction debitage from the manufacture of dart points, where heat-treated cherts were used. Emphasis is given to discussions of the selection of flake blanks and force application techniques used in the experiments.

BIFACIAL ARROW POINTS

Metric data are given in Table 1 for 34 Perdiz arrow point replicates made by pressure flaking, with some of the specimens shown in Figure 1. All specimens have metric attributes within the ranges of typical prehistoric arrow points from Southeast Texas, with weights of 2.3 grams or less, and thicknesses of 5.0 mm or less (Patterson 1985). It was found that the ideal thickness range for flake blanks to manufacture bifacial arrow points was 3.0 to 5.0 mm. Only a few of the specimens in Table 1 have thicknesses less than 3.0 mm.

A high rate of breakage was experienced when using flake blanks with thicknesses less than 3.0 mm. Most breakage of flake blanks during pressure flaking was by transverse fractures across the width of the specimen. Very thin flat flake blanks fracture from the high pressure generated by spot loading with a pointed pressure flaking tool. Breakage of flake blanks during pressure flaking can be virtually

eliminated by the use of flake blanks with dorsal ridges instead of flakes with flat dorsal faces. Either small prismatic blades or other types of flakes with dorsal face ridges may be used.

A dorsal face ridge strengthens the cross section of a flake, to resist snap fracture from bending with high pressure spot loading. It is common to observe



Figure 1. Arrow Point Replicates.

bifacial arrow points with a remaining portion of a dorsal face ridge. It is often judged that specimens of this type were made from prismatic blades. However, it is not always possible to judge whether an arrow point was made from a prismatic blade or another type of flake with a dorsal face ridge. Arrow point replicates shown in Figure 2 all have remaining portions of dorsal face ridges, but none of these specimens was made from a prismatic blade.

Ideal flake blanks for arrow point manufacture do not have thick bulbs of percussion which require more pressure flaking work for removal. I seldom have breakage during shaping of stems on arrow points. This is probably due to the thickest part of the flake blank being at the proximal end where stem formation is usually done.

Arrow points are often observed that have remaining flat surface portions of the original flake blank. No pressure flaking was required in these areas of flat surface to obtain the desired arrow point shape. Large areas of flat surface are often found on

Table 1. Metric Data for Arrow Point Replicates

| <u>Specimen</u> | <u>Length</u> | <u>Width</u> | <u>Thickness</u> | <u>Weight, Grams</u> |
|-----------------|---------------|--------------|------------------|--------------------------|
| 1 | 34.1 | 13.9 | 3.9 | 1.3 |
| 2 | 41.5 | 13.5 | 4.8 | 1.8 |
| 3 | 41.7 | 14.9 | 4.3 | 2.2 |
| 4 | 32.2 | 13.9 | 3.9 | 1.2 |
| 5 | 40.7 | 12.4 | 3.6 | 1.8 |
| 6 | 38.8 | 14.2 | 4.6 | 2.2 |
| 7 | 37.0 | 13.3 | 3.9 | 1.8 |
| 8 | 33.5 | 11.2 | 3.6 | 1.0 |
| 9 | 31.7 | 16.6 | 4.6 | 1.7 |
| 10 | 43.3 | 13.2 | 3.9 | 2.3 |
| 11 | 38.3 | 16.9 | 4.6 | 1.9 |
| 12 | 31.8 | 17.9 | 3.9 | 1.6 |
| 13 | 29.7 | 12.5 | 3.2 | 0.9 |
| 14 | 34.1 | 17.8 | 2.9 | 1.6 |
| 15 | 33.1 | 16.6 | 2.6 | 1.1 |
| 16 | 38.2 | 12.3 | 5.0 | 1.7 |
| 17 | 34.1 | 13.4 | 4.8 | 1.9 |
| 18 | 35.6 | 13.5 | 5.0 | 1.5 |
| 19 | 37.5 | 14.5 | 5.0 | 2.0 |
| 20 | 30.0 | 11.5 | 4.6 | 1.4 |
| 21 | 34.2 | 14.7 | 3.9 | 1.3 |
| 22 | 33.9 | 12.3 | 2.4 | 1.2 |
| 23 | 36.6 | 12.7 | 3.9 | 1.5 |
| 24 | 37.5 | 11.9 | 5.0 | 1.6 |
| 25 | 34.7 | 17.1 | 3.8 | 1.5 |
| 26 | 34.9 | 16.9 | 3.6 | 1.8 |
| 27 | 27.0 | 10.0 | 3.0 | 0.8 |
| 28 | 33.7 | 11.6 | 4.4 | 1.5 |
| 29 | 34.2 | 17.2 | 2.5 | 1.3 |
| 30 | 28.3 | 12.2 | 4.2 | 1.0 |
| 31(A) | 38.5 | 17.8 | 5.0 | 2.1 |
| 32(A) | 39.3 | 18.7 | 4.3 | 2.0 |
| 33(A) | 34.0 | 18.2 | 3.6 | 1.5 |
| 34(A) | 32.7 | 19.2 | 4.6 | 1.6 |
| mean | 35.2 | 14.5 | 4.0 | 1.6 |
| std. dev | 3.825 | 2.525 | 0.755 | 0.385 |
| range | 27-43 | 10-18 | 2.4-5.0 | 0.8-2.3 |

A - with dorsal face ridges, Figure 2

bifacial arrow points that represent remaining areas of the ventral face of the original flake blank.

For pressure flaking, I use a long 3/4-inch wood dowel with a soft iron nail for a tip. Higher force can be generated by use of leg muscles. The piece being worked is held in the palm of the left hand against the left thigh, with the pressure flaking tool in the

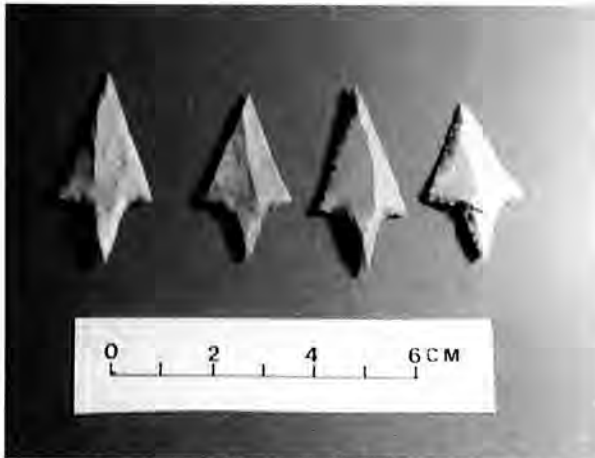


Figure 2. Arrow Points with Dorsal Face Ridges.

right hand. The pressure flaking tool is placed against the right thigh. After placing the tip of the flaking tool on a desired spot on the edge of the piece being worked, the right leg is moved to apply force to the pressure flaking tool. This force application technique for pressure flaking is commonly used by modern flintknappers.

UNIFACIAL ARROW POINTS

Unifacial arrow points with steep marginal retouch are often found in Southeast Texas. Many of these specimens were used earlier than standardized bifacial arrow point types (Patterson 1992). Unifacial arrow points can be made by conventional pressure flaking or by use of raking retouch (Patterson 1998). Pressure flaking allows use of a wide range of flake blank shapes, because shaping and thinning can be done on both faces of the flake blank. Flake blanks must be selected more carefully for use of raking retouch, because only steep marginal retouch is being done. One advantage of raking retouch is that this flaking technique can be done rapidly. I have often made a unifacial arrow point in about one minute, using raking retouch. Another advantage of raking retouch is that less breakage of thin flat flake blanks is experienced, because force is not applied as a single concentrated spot load.

Raking retouch is done by raking a thick chert

flake along the edge of the piece being worked. Raking retouch produces steep short fracture scars with no edge serration, compared to pressure flaking that produces longer fracture scars with edge serration (Patterson 1998). Some unifacial arrow points made by raking retouch are shown in Figure 3.

Unifacial arrow points can be easily overlooked



Figure 3. Unifacial Arrow Points

in an assemblage of lithic flakes. A 10-power magnifier should be used to determine whether or not a pointed flake has been purposefully retouched, instead of being a fortuitously pointed flake. Impact damage is a useful attribute for the identification of unifacial arrow points (Odell 1988). I have given a detailed discussion on the identification of unifacial arrow points (Patterson 1994). Many archeologists probably don't find unifacial arrow points simply because they don't look.

Aside from the occurrence of many unifacial arrow points in Southeast Texas (Patterson 1992: Table 1; 1996: Table 6), unifacial arrow points have also been found in South Texas (Headrick 1993: Figure 11d,u), Northeast Texas (Brewington et al. 1995: Figure 28a'), and South-Central Texas (Patterson 1974: Figure 1).

SUMMARY

This article has discussed some aspects of arrow point manufacture, especially regarding the selection of flake blanks and force application techniques. Data from experimental flintknapping enables a better appreciation of the manufacturing processes for stone tools and projectile points used by prehistoric flintknappers. A knowledge of flintknapping should be part of the repertoire of every serious lithic analyst.

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TESTING AN UPLAND SITE IN GUADALUPE COUNTY, TEXAS

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ABSTRACT

In an area along the gentle slopes of these Texas hills, fairly extensive debitage suggests that there has been repeated lithic work activities during the Archaic period. Some of the biface specimens are examined, as well as the reduction flakes which are a by-product of the knapper's work. In addition, a discussion of the examination with ultraviolet light of flakes and other items is presented.

INTRODUCTION.

The Guadalupe River flows from the narrow canyons of the Balcones Escarpment into the widened valley of the plains below. A line of hills to the east marks one edge of this plain, and the terraces there are dissected by the tributaries which eventually drain into this river. The high terraces in these hills effectively separate the drainage of the Guadalupe and the San Marcos Rivers. Lying atop these hills are gravels of typically varied sizes which are often exposed in the pastures and along the slopes. They consist mainly of cherts and other siliceous rocks, plus limestone, siltstone and fragmented shale (see Folk 1980). In spite of, or perhaps because of, the rocky slopes and silty- clay soils, stands of post oak and blackjack oak abound, some extensive with thorny shrub undergrowth and others in open grasslands.

The margins above the creekside terrace sometimes appear as small bench terraces, and it is along this wooded hillside that evidence of early lithic production is noticed in various places. The area studied here was described to some extent in a previous article (Howard 1997), and additional material has been recovered since then. Several deposits of reduction flakes, bifaces and debitage occur in a 4-x 12-meter area which appears to have been partly eroded at some time in the past. One small section approximately 2 x 3 meters may be a primary deposit of debitage, and some of that material will be discussed later. Items were mainly recovered from a gentle slope of moderately sorted gravels, ca. 2 cm to 6 cm, that were partly exposed or

slightly covered with silty soils. Deeper sandy loams were curiously devoid of material, at least to the extent they were tested. Trees, underbrush, vines, and roots often determined where testing proceeded with the least difficulty.

No features were noticed, and despite the occurrence of various sized chunks of sandstone, none of them had any obvious appearance of being utilized. This tends to lend support to the view that this site was mainly visited for lithic procurement and production activities.

INITIAL BIFACES

Bifaces are commonly lithic artifacts that have had flakes removed from two surfaces to produce a tool or projectile point. The description of artifact manufacture here is based in part on the presentation in Turner & Hester (1993) and Johnson's discussion of the Sleeper Site (Johnson 1991). In the beginning stages, a flat cobble or large flake is selected and the knapper begins removing the outer cortex by striking it with a hammerstone. At some point, the resulting artifact is a trimmed object with sinuous edges and varied amounts of cortex remaining on



one or both surfaces. These are being classified here as initial bifaces, since little can be determined about their eventual function. The reduction flakes from this stage are often large and retain some cortex. The example in Figure 1a is one of four large cortex flakes with some flake scars on both sides, recovered from tested areas.

The next step in lithic production was to further reduce the biface by hammerstone flaking, removing all of the cortex and begin shaping the object. The intermediate result is crudely-flaked thick bifaces that have oval, elliptical or nearly triangular shapes with thicknesses greater than 1.5 cm. Some thick bifaces can also be final stage tool forms, though none recovered here are distinctive. The pear-shaped biface in Figure 1b appears to have been a large flake that was trimmed around all the edges, and it has no cortex remaining; it is 1.9 cm thick. Another biface fragment not shown is a wide, carefully formed triangular shape, 2.3 cm thick.

THIN BIFACES

When the reduction of a thick biface continues, the knapper arrives at a stage where the item approaches its final form. This artifact appears to be a preform that still needs the careful flaking that produces a finished specimen. When this is successful, the thin bifaces are, of course, finished items, generally dart points or "knives." Only six specimens in this study area seem to have reached that final stage.

While the biface in Figure 1c appears to be a more advanced stage, the flaking on one side is mainly limited to the edges, and about half of that face remains smooth. It is made from an interesting agatized chert and is 1.3 cm thick. It was found as three fragments, each about one meter from the others, in an area with other biface fragments and reduction flakes. The biface fragment in Figure 1d was near one of those fragments, and it appears to be a later stage preform. It is .9 cm thick and made from a typical, medium brown chert; a large flake scar suggests that it was over-thinned accidentally. Two other similar fragments were recovered from tested areas. A damaged biface (Figure 1e) gives some idea of how a preform specimen likely appeared. The convex base, pear-shaped biface seems to be a "theme" here, and may be best compared to the Group 4 thin bifaces at Loma Sandia (Taylor & Highley 1995).

Four dart point fragments recovered are indica-

tive of the time over which aboriginal visits to this site occurred. The Martindale is an Early Archaic type point which appears in Central Texas. One specimen here (Figure 2a) exhibits some characteristics of this type, and is produced from an opaque, mottled chert. The Tortugas type is associated with the Archaic period of southern Texas; other points from this locale also suggest this Middle Archaic tradition (cf. Taylor & Highley 1995). This triangular point (Figure 2b) was found as two fragments approximately two meters apart. It is 7 cm long, and is produced from a medium brown chert with an off-white streak curving through it. The lateral edges are straight, and one edge has indications of being reworked making it steep, though not distinctly beveled.

The basal fragment of a Marcos type point (Figure 2c) is made from an opaque, gray chert that is seldom noticed in this locale. Such points are part of a Central Texas tradition during the Late Archaic. Another damaged fragment is a small, expanding stem point, with a short triangular shape that is strongly suggestive of an Edgewood or Ellis type (Figure 2d). In a previous article (Howard 1997), some other items found in this study area are illustrated, including a likely Abasolo type dart point. Identification was assisted by referring to Turner & Hester (1993), plus other examples in the literature.

REDUCTION FLAKES

A few examples of reduction flakes are representative of the various kinds of debitage recovered in the area. A secondary cortex flake (Figure 3a) has short scars along one end, which indicates its use as a scraping implement. The sharp blade (Figure 3b) is a tertiary reduction flake with nibbles along one edge that could be the result of light cutting activities. Some other specimens of these sorts of incidental tools are a noticeable part of the recovered material, though most are less distinct or have been damaged in ways that make their function uncertain.

About half of the material is recognizable as normal reduction flakes, from large flakes greater than 5 cm to a small percentage of chips about 1 cm in size. The specimen of Figure 3c is illustrated as an example of a billet flake. Such flakes have a portion of the biface edge remaining on the proximal end where they are struck. The last stage of biface reduction often produces small, ovoid flakes with flattened, unscarred ventral surfaces; these are termed pressure flakes (Figure 3d) which refers to

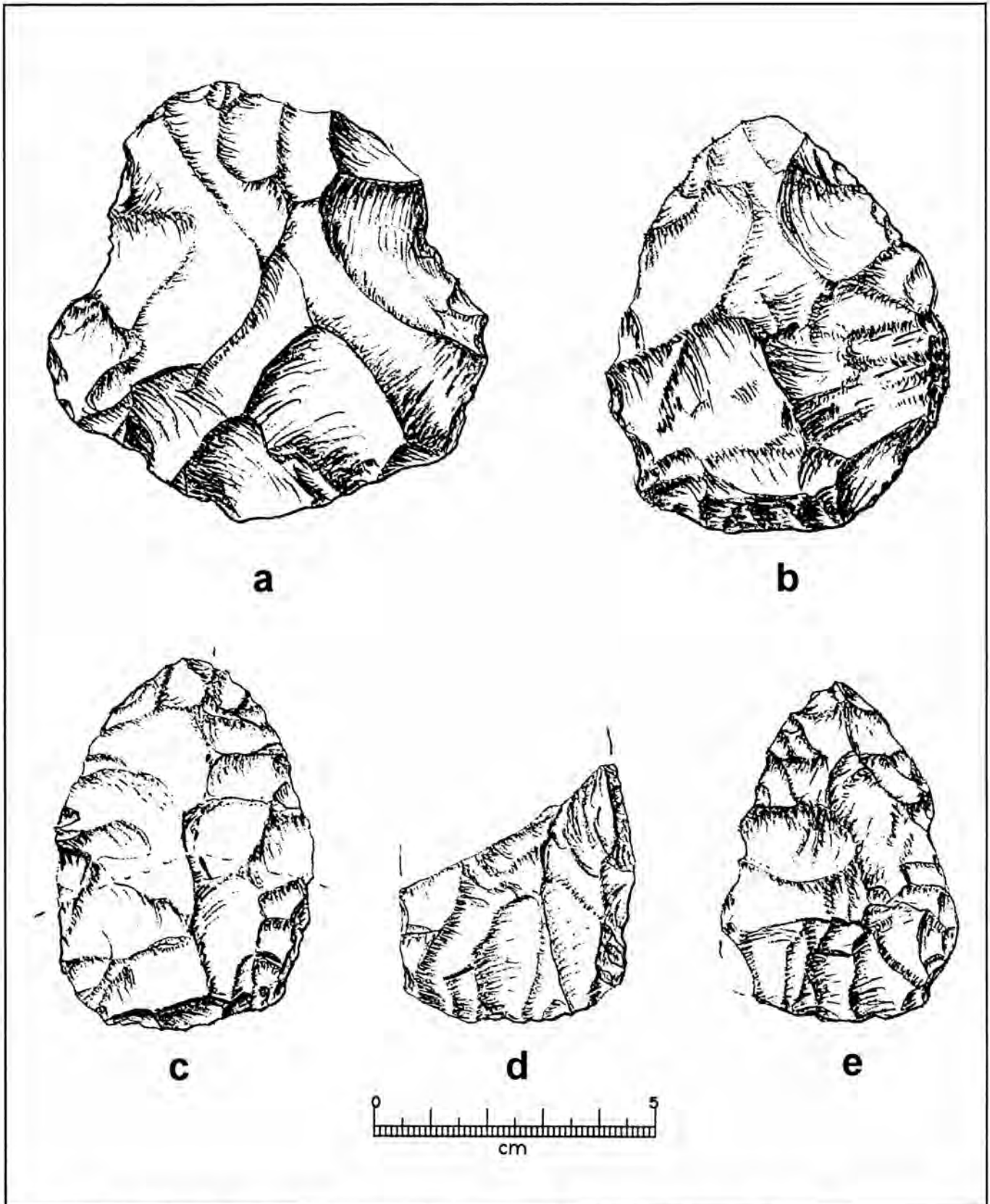


Figure 1. Bifaces from an upland site in Guadalupe County. a, b, thick bifaces; c, d, e, thin bifaces.

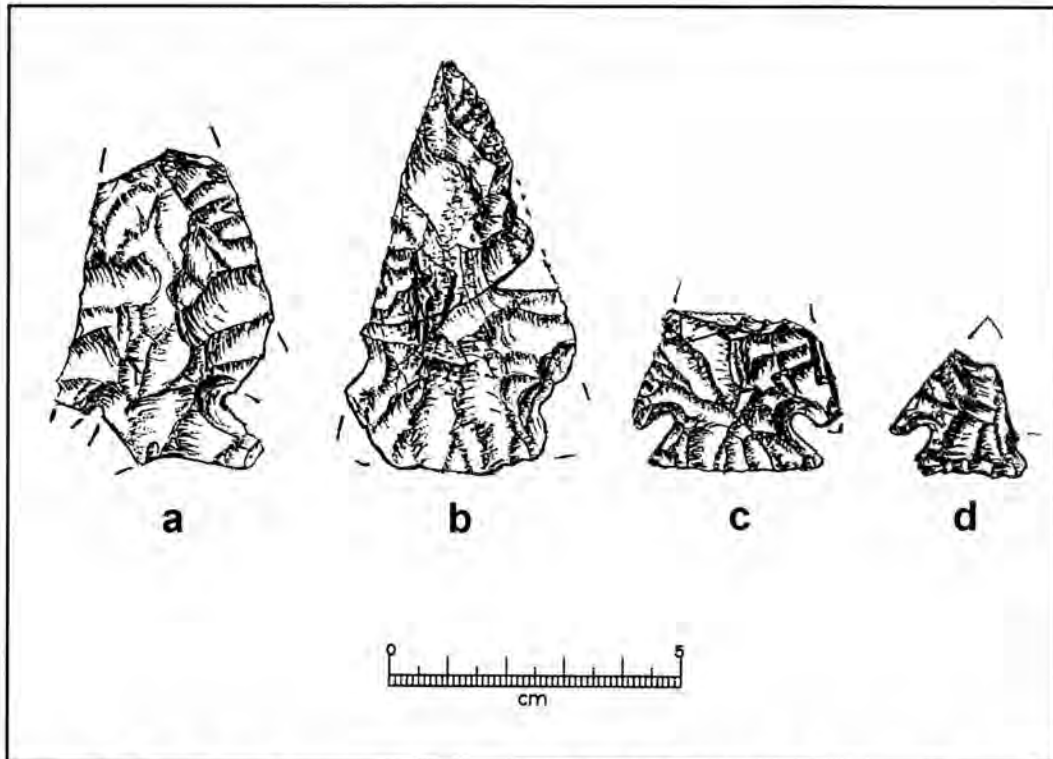


Figure 2. Dart Point fragments from upland site in Guadalupe County. a, possible Martindale; b, Tortugas; c, Marcos base; d, possible Edgewood.

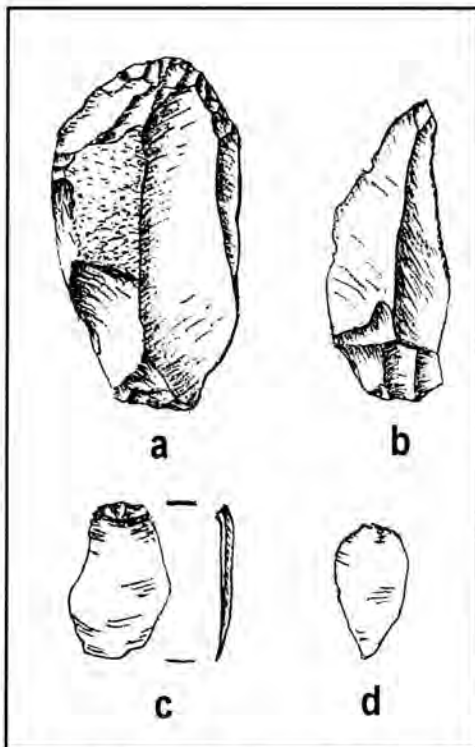


Figure 3. Reduction flakes. a, secondary reduction flake; b, blade; c, billet flake; d, pressure flake.

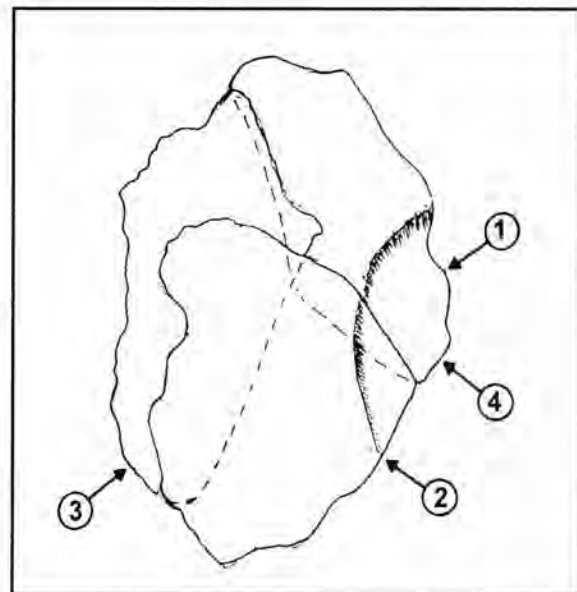


Figure 4. Fitted cortex flakes. Numbers indicate sequence and direction of blows.

the special technique used in their removal. Very few of these sorts were found in the recovered material, which suggests that biface finishing was a rare activity at this site.

Interestingly, nothing was recovered which was recognized as a hammerstone, though several scarred or fractured pebbles could have been employed for that task. Small chunks of sandstone also showed no signs of usage.

EXAMINATION WITH ULTRAVIOLET LIGHT

Almost from the beginning of testing in this area, artifacts, debitage and other lithic material was inspected under ultraviolet light. This hand-held unit has two small tubes described as long wave ultraviolet. From the first, it was observed that much of the material fluoresced with a strikingly similar orange hue, despite the obvious variations in appearance of the chert. However, there was a small range of hues, with a dark, rusty orange at one end and a bright yellow at the other. Also, what were naturally occurring "flakes" appeared almost black, so this became a simple method to remove geomorphed cherts, which sometimes had a worked appearance. Another early observation was that recently broken fragments showed a brighter fluorescence on the exposed edge. This facilitated the determination of whether some artifact scars were aboriginal or a result of subsequent damage, e.g., animal traffic.

This observation also led to some further speculation. First, it could be seen on some broken flakes that the UV "tint" graded from a bright yellow-orange in the interior to a muddy or dark orange of the exterior. This suggested that the hue was partly the result of chemical changes on the surface of the artifact, and the color seen would be affected by some long-term action of the soil chemistry; the original chert was just one component of the hue and could give a greenish tint, a pinkish cast or some other tint.

The other observation was perhaps more practical. If an artifact fragment showed a brighter color along the snapped, exposed edge, it suggested some recent event as the cause, and therefore the other fragment(s) could be nearby—and vice versa. In several instances, this proved to be valuable in searching for and recognizing multiple fragments of items. It also seemed significant in other cases to determine whether damage had resulted from original production failures.

In a discussion of some artifacts recovered at Panther Springs (Potter & Black 1995), a somewhat similar description of lithic material observed under ultraviolet light is presented. That researcher, however, concludes that the varied hues are to be attributed to the origin of the chert. It has remained difficult to explain why a range of material that appears significantly different—translucent brown, glossy tan, opaque gray or olive green—can fluoresce with remarkably similar color, and in other instances flakes which appear to be from the same lithic object have clearly varied hues.

Since the specimens from this area reveal occupation throughout the Archaic period, it is impossible to define a component that can be assigned to a sub-period with much certainty. In following along the lines of the earlier observations, it appeared that those items which might be ascribed to a Middle Archaic component had a similar muddy orange color in ultraviolet light. A group of reduction flakes from the approximate center of the site was inspected in the same UV light, and arranged in a sequence from dark orange to yellow-orange; a "typical" biface was used as a midpoint. The count of the observed colors was 1 dark orange, 27 muddy orange, 39 yellow-orange, and 1 yellow hued flake.

It would be preferable to have well defined artifactual examples to compare with material from primary deposits, and even then, the tints have a subjective aspect similar to suggestions that patina can be a guide to the age of specimens; there may be some validity to such comparisons, however, such observations remain difficult to apply.

A POSSIBLE PRIMARY DEPOSIT.

Throughout this locale, a few reduction flakes or biface fragments may be recovered quite frequently. When a few flakes and a thin point fragment were found in exposed gravels, it was at first considered to be merely evidence of the ancient occupations here. Further testing of the area indicated the presence of a 2- x 3-meter flake midden at the northern edge of this site. Approximately 500 reduction flakes were recovered, and seven chipped stone artifact fragments, plus a number of utilized flakes. A number of large (greater than 5 cm) cortex flakes and chunks of debitage were also noticed and occasionally collected. The base of a Marcos type point (Figure 2c) was recovered here, which seemed to hint that the assemblage could be Late Archaic;

however, a fragment of a likely Tortugas point (Figure 2b) was also among the items; these shallow deposits provide few hints for stratified comparison. What can be noted is the lack of large bifaced items, the presence of small fragments of thin bifaces, and a more frequent occurrence of utilized flakes. The occurrence of material virtually ceased beyond the bounds of this small area, except for a few appearances downslope, and this relative "isolation" also suggested that the midden could be mainly the result of a single work event; the number of flakes and some visual clues suggested that 20 to 50 lithic items could have been produced. The absence of features would indicate that any occupation was probably brief.

Inspection of the debitage with ultraviolet light led to a further sense that the debitage was at least partly from a single occupation. A few groups of associated (within a radius of ca. 40 cm) flakes were recognized as being from the same object, and in three or four cases, flakes could be fitted together. In some other instances, debitage fragments were also matched. It was decided not to sort out all of the flakes, so a limited selection of representative samples from across the midden was examined in ultraviolet light. The count of muddy orange flakes was 38, and yellow-orange flakes was 64. For comparison, the 20 bifaced specimens from the whole site were also examined, and of these 11 were in the muddy orange range, and the other nine were in the yellow-orange. It might also be noted that the muddy orange items were often the larger or thicker bifaces, though a small Edgewood-like basal fragment fragment was also one of that group.

Without more data, it is unclear what may be inferred. One possible explanation may be that different sorts of work activities took place here at different times. During the "earlier" phase, lithic production was more or less limited to reducing cobbles or large flakes to thick bifaces which were carried elsewhere. The "later" occupation(s) may have involved the further reduction of bifaces to a finished stage, resulting in more flakes in that group and fewer large bifaces, though it is possible that the production of large flakes or blades for specific

purposes was also a significant activity. However, only one diagnostic item, the Marcos fragment, is clearly part of the yellow-orange group, so assigning that group to a later period is quite tentative. I have put the terms earlier and later in quotes since it isn't certain what time periods they may, in fact, refer to.

Another possible clue to the activities in this area are the number of flakes which could be matched and sometimes even joined along the aboriginal scars. Figure 4 is a schematic drawing of four cortex flakes which were fitted together, and shows something of how a cobble was first reduced; the direction of hammer strikes and the order is indicated. The last flake removed has a long sharp edge with nibbles that indicate usage for cutting or slicing. It is possible that some of the lithic reduction of cobbles was mainly to produce such blades for use as incidental implements. The fact that this and other examples occur in this midden also suggests that it represents deposits which were more or less intact, and hopefully further study will provide more information about the brief occupation of this site.

CONCLUSIONS

Several components of lithic artifacts are present along the upland slopes of these wooded hills. Unfortunately, the shallow, mixed deposits defy any simple method of identifying associated material or tool groups. Examination of artifacts with ultraviolet light suggests a possible diagnostic for arranging items in a way that provides some hints about related materials. It is at least a different way to sort the chaotic picture of lithic debitage, with the caveat that no objective way to match varied "tints" has been offered. While the results have been positive, e.g., fragments recognized and matched, an experienced eye may have given a similar assistance. However, there is a possibility that ultraviolet inspection could also provide a sort of "relative dating" of artifacts in a particular situation, given that enough diagnostic material is also present in the same setting.

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BO NELSON has pursued his interest in archaeology for over 30 years, and recently has made the transition from being an avocational to being a practicing professional archaeologist. Growing up in Northeast Texas led to his primary interest in Caddoan archaeology, but with more archaeological experiences throughout the state, Spanish Colonial archaeology and the archaeology of South Texas can be added as new interests. Bo is an active member in the Texas Archeological Society (Regional Director, Region 4), and the Texas Archeological Stewardship Network.

LELAND W. PATTERSON is a retired chemical engineer and an active avocational archaeologist. His current research interests include the prehistory of southeast Texas, lithic technology, and the early peopling of the New World. Patterson has authored or coauthored over 390 publications in archaeology. Some of his publications have been in *American Antiquity*, *Journal of Field Archaeology*, *Lithic Technology*, the *Bulletin of the Texas Archeological Society*, and *Current Research in the Pleistocene*. He is author or senior author of several major archaeological site reports, and has recently published a detailed synthesis of Southeast Texas archaeology. He has received the Crabtree Award of the Society for American Archaeology for research by an avocational archaeologist.

TIMOTHY K. PERTTULA, who lives in Austin, has a PhD in Archaeology from the University of Washington (1989), and has been doing archaeology in Texas since 1974. While his principal research interest is Caddo archaeology and ethnohistory, in the last few years he has also become fascinated with South Texas archaeology, particularly the prehistoric, Hispanic, and Tejano archaeology at Falcon Reservoir on the lower Rio Grande.

BRYANT SANER, JR. grew up in Kerr County and developed an interest in archaeology at an early age. He is active as an avocational archaeologist today. His main interests are the Southern Edwards Plateau and the Lower Pecos Region. Bryant is active in recording, documenting, teaching and preserving archaeological sites in the Hill Country and has recently started to work for the University of Texas at San Antonio, Center for Archaeological Research. He is a Steward for the Texas Archeological Stewards Network and is an active member of the Texas Archeological Society, Southern Texas Archaeological Association and the Hill Country Archeological Association.

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 3 1/2" disk, IBM or compatible, in ASCII form (if not in Word Perfect or Word), 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 requires special processing which adds to the cost of the issue. Sharp Black and White photos are preferred but color can be used. 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 is very often slightly enlarged, 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. HAVE DUPLICATE PHOTOS TO BE SAFE.

Manuscripts and/or hard copy of disk, if used, or other information may be submitted to: Shirley Van der Veer, Editor, *La Tierra*, 123 E. Crestline, San Antonio, Texas 78201-6613. With your cooperation, much time may be saved in correspondence to clear up matters before *La Tierra* can go to press. E-mail makes for easy clear-up. Shirley's is shirleyvan@worldnet.att.net. Include your email address when contacting her.

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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