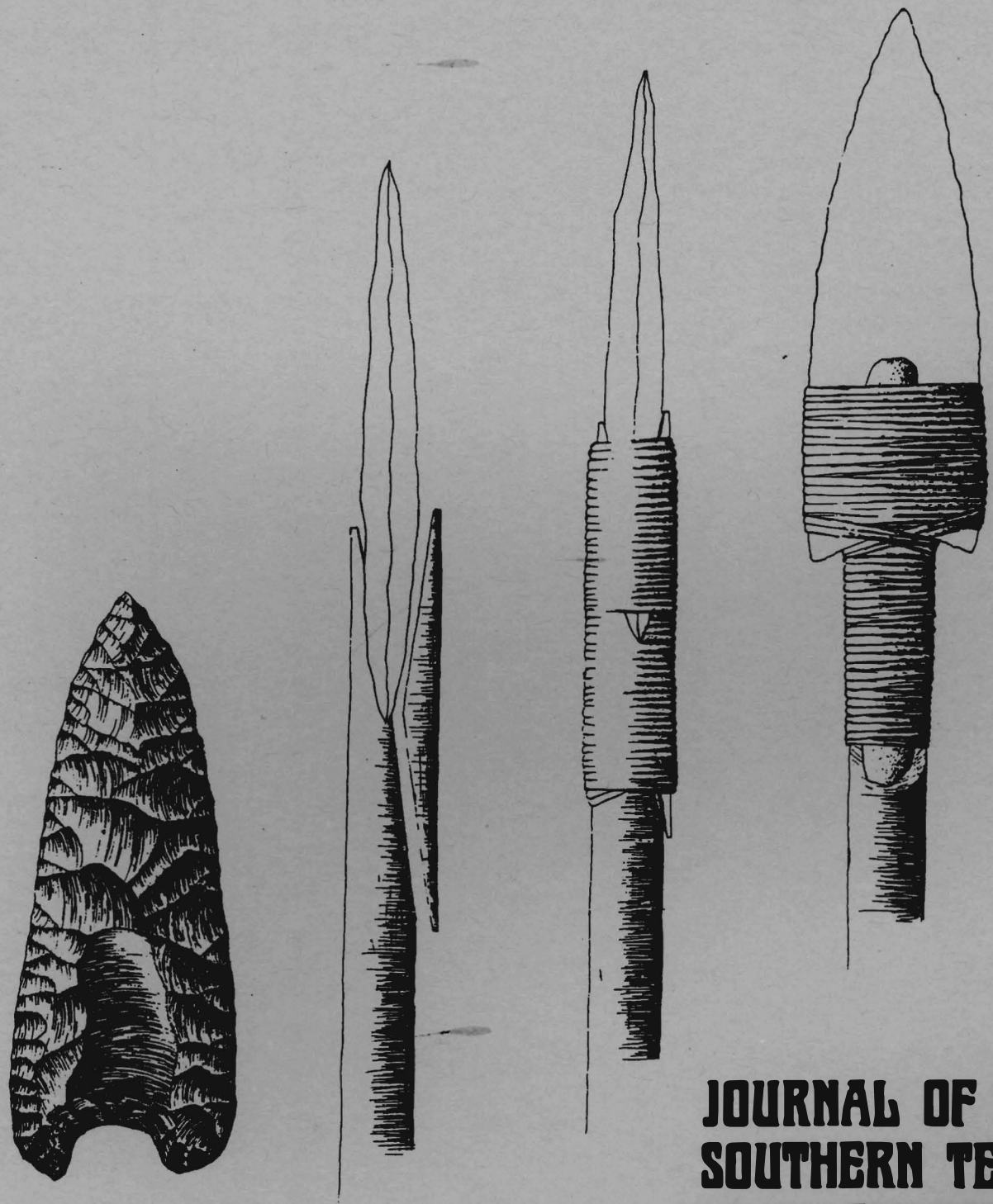
LA TIERRA



JOURNAL OF THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

October 1988

Volume 15, Number 4

LA TIERRA

Quarterly Journal of the Southern Texas Archaeological Association

Volume 15, Number 4
October, 1988

Evelyn Lewis
Editor

* * * * * * * * * * * * * *

* * * * * * * * * * * * * *

About the Cover: The Colby Fluted Point is shown on the left. Hafting of a Clovis Point is shown by the three figures to the right. Model by Christopher Ferguson. Illustrated by Richard McReynolds. See paper by T. C. Kelly starting on page 7 of this issue.

\- - - - - - - - - - -

Manuscripts for the Journal should be sent to: Editor, **La Tierra**, Evelyn Lewis, 9219 Lasater, San Antonio, Texas 78250. Copies of past issues of the Journal and Special Publications are available from: Bette Street, 100 Kings Crown E., San Antonio, Texas 78233.

For membership information contact the Membership Chairman: Liz Smith, 1607 West Huisache, San Antonio, Texas 78201.

For use of the STAA Lending Library, contact Lynn Highley or Anne Fox at the Archaeology Laboratory, The University of Texas at San Antonio, San Antonio, Texas 78285.

Library of Congress Catalog No. 76-649774.

All articles in **La Tierra** are now summarized in **Abstracts in Anthropology** published by the Baywood Publishing Company.

All contributions to this Non-Profit organization are tax deductible.

E D I T O R I A L

With this last issue of La Tierra for 1988, I want to take this opportunity to thank the authors and contributors to the Southern Texas Archaeological Association journal for their outstanding manuscripts. Each issue has offered a collection of ideas and project reports that come only from dedication to the field of archaeology and the ability to share these ideas with our readers through the written word.

Your agreement in accepting any changes I might have made in editing has made my job a pleasure. I am especially indebted to Shirley Van der Veer for her patience in explaining the production end of the publication business, and the necessary limitations to stay within a prescribed framework and budget.

Our staff artist, Richard McReynolds, is generous to a fault in providing the splendid illustrations for content and/or cover design. And experts in their fields have been available and gracious for critiquing a paper prior to publication.

Dr. T. R. Hester, in spite of being moved from our midst, still sends his South Texas Archaeology notes for each copy. I appreciate the extra effort it takes to work this into his already crowded schedule, and getting the report to me on time.

With this kind of camaraderie and cooperation **La Tierra** will always be a source of pride for all of us involved with the STAA. Please continue sending your manuscripts for future issues. I would like to have several reports 'ahead' in my file drawer and promise that they will be published, as needed, in **La Tierra.**

Evelyn Lewis
Editor

NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1988-4

Mesoamerican Artifact Occurrence in Southern, Central and Western Texas: An Update

Thomas R. Hester

From time to time, archaeologists have reported artifacts of Mesoamerican origin from various parts of Texas. In many cases, these can be dismissed as tourist discards, as attempted hoaxes, or as in an increasing number of instances, as documented evidence of Mesoamerican specimens in prehistoric archaeological contexts.

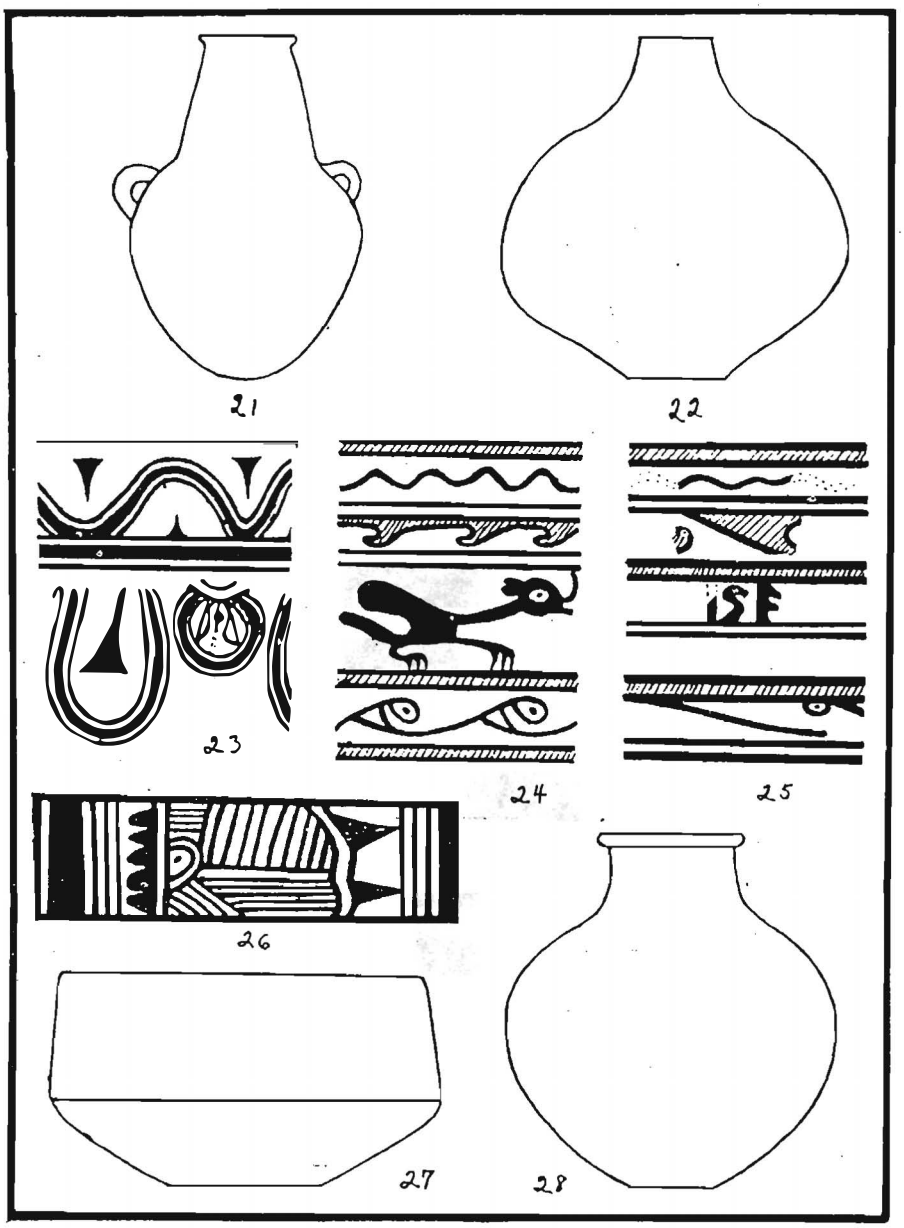
Green obsidian chips derived from the famous mines and quarries at Cerro de las Navajas (Pachuca), Hidalgo, in central Mexico have been excavated at site 41 WY 72 in Willacy County (Day 1981). The Mexican obsidian from Willacy County is part of a series of Mesoamerican artifacts found in the Rio Grande Delta, presumably linked to trade between the peoples of the Brownsville Complex and the late Huastec cultures of the Mexican Gulf Coast. Other specimens include a jadeite bead (see Hester 1980:79) and other jadeite artifacts reported by MacNeish (1947:7), and five pottery vessels found in the Brownsville area by A. E. Anderson. Mason (1935) has published details on the latter; they include four ollas and one bowl, 14-15 inches high (see Figure 1).

Up the South Texas coast, in Kleberg County, a small greenstone figurine of Mesoamerican style was found in a cache with other artifacts (Krieger 1953; W. Armstrong Price, personal communication, 1969). This 1948 discovery will be the subject of a later paper in the **Notes on South Texas** series in this journal.

In the interior of south Texas, four Toltec-era spindle whorls were collected from the surface of a site in Dimmit County (see Hester 1980:129). Although I think it is likely that they reached that site in prehistoric times, the possibility that they were transported into the area in more recent times by ranchworkers from Mexico cannot be ruled out.

There are also a series of interesting figurine heads, hollow and Mesoamerican in style, from various localities across the state. The striking similarity of most of these, in contrast to the usual tourist-type figurine fragments (mostly fakes), suggests that their presence should be closely examined. One specimen (Figure 2) was found by a Mr. Clark in a gravel pit in Coleman County in 1938 or 1939 (Jim Damon, San Antonio, personal communication, 1976). Interestingly, a specimen remarkably like the Coleman County artifact is reported from the McDonald Mesa locale in Pecos County by Rogers (1972:50,58). It is 5.5 cm high and 4 cm in diameter, only slightly smaller than the artifact shown in Figure 2. Two hollow figurine heads of this sort were also published by Krieger (1953:Figure 79, D,E), as being of "Xipe Totec" style. [Xipe Totec, "the flayed god," a deity widespread in Mesoamerica, especially in postclassic times, is depicted wearing the skin (especially the facial skin) of a sacrificial victim.] One (Figure 3,a) is from the Fort Worth area, and the second (Figure 3,b) was purchased in Fort Smith, Arkansas (the latter specimen is said by Krieger to be shell-tempered). Yet another "Xipe Totec"-style figurine head is reported by Compton (1964) from a field near Dallas; he felt there was no probability of a hoax in terms of its discovery.

Documenting the presence of Mesoamerican artifacts in the Rio Grande Delta is not difficult; obviously, there were some type(s) of trade contacts and explaining or defining these remains a problem. Explaining the dispersed occurrences of the hollow figurine heads is much more of a problem. None are from good archaeological contexts, yet their discovery at widely-separated locales and their shared attributes as a group would suggest that we are not merely looking at tourist discards or efforts at fooling the unsuspecting



21. Olla of cream-colored ware with painted decorations in black.
22. Shape of two ollas of cream-colored ware with painted decorations in black and red.
23. Part of the painted decoration of the olla shown as No. 21.
24. Part of the painted decoration of one of the ollas shown as No. 22.
25. Part of the painted decoration of the other olla, shown as No. 22.

(In Nos. 24 and 25 the hatching represents red coloring).

26. Part of the painted decoration of the bowl shown as No. 27.
27. Bowl of cream-colored ware with painted decorations in black. (The proportionate size is twice that of the ollas).
28. Olla of red or red-slipped ware.

Figure 1. Mesoamerican Pottery Vessels from Near Brownsville, Texas. Enlarged from Mason (1935:Plate 6). Mason's descriptions accompany the figure. Not to scale.

Figure 2. Front and Side View of Hollow Ceramic Figurine Head from Coleman County, Texas. Scale is in centimeters.

archaeologist. I have tried for a number of years to get the hollow figurine heads more specifically identified by Mesoamerican archaeologists. Krieger (1953:517) described them as of "Xipe Totec" style, yet suggested that Figure 3,b had been made in "the Mississippi Valley region" since it was shell-tempered. James B. Griffin (personal communication) looked at photographs of the specimen in Figure 2, noting it to look like a "Mexican piece" and "strongly suggestive of Xipe Totec." Other archaeologists knowledgeable about Mesoamerican figurines, as well as specimens from the Southeast (cf. Krieger 1953), have offered no strong opinions as to style, date, or Mesoamerican cultural affiliation. Perhaps having exhumed these photographs and notes from my files and publishing them here will move the matter along.

Figure 3. Hollow Ceramic Figurine Heads Illustrated by Krieger (1953). From Figure 79, D, E. a, Fort Worth, Texas; b, purchased at Fort Smith, Arkansas. No scale available.

More than 20 years ago, Griffin (1966) published an overview that drew together the conflicting opinions about Mesoamerican influence on the emerging agricultural societies of the American Southeast and Mississippi Valley. Griffin (ibid.:130) concluded that there had been a "...continuing seepage from Mesoamerica of ideas and practices" that added to these Eastern cultural patterns. The nature or mechanisms of the movement of these ideas is still unclear, though the Mesoamerican artifact data from Texas may, through continuing documentation and analysis, contribute some new views on the issue.

References

Compton, C. B.
1964 A Tantalizing Situation. **The Masterkey** 38(4):156-158. Southwest Museum, Los Angeles.

Day, D. W.
1981 An Assessment of Archeological Sites 41 WY 71 and 41 WY 72, Willacy County, Texas. **Reports of Investigations** 17. Prewitt and Associates, Austin.

Griffin, J. B.
1966 Mesoamerica and the Eastern United States in Prehistoric Times. In: Archaeological Frontiers and External Connections, edited by G. F. Ekholm and G. R. Willey, pp. 111-131. **Handbook of Middle American Indians**, Vol. 4. University of Texas Press, Austin.

Hester, T. R.
1980 **Digging Into South Texas Prehistory.** Corona, San Antonio.

Krieger, A. D.
1953 Recent Developments in the Problem of Relationships Between the Mexican Gulf Coast and Eastern United States. In: Huastecos y Totonacos y Sus Vecinos. **Sociedad Mexicana de Antropología** 9(2):497-518.

MacNeish, R. S.
1947 A Preliminary Report on Coastal Tamaulipas. **American Antiquity** 13(1):1-15.

Mason, J. A.
1935 The Place of Texas in Pre-Columbian Relationships Between the United States and Mexico. **Bulletin of the Texas Archeological and Paleontological Society** 7:29-46.

Rogers, R. M.
1972 Ceramics, Pecos River Drainage, Pecos and Crockett Counties, Texas. **Transactions of the Seventh Regional Archeological Symposium for Southeastern New Mexico and Western Texas**:47-70. Dawson County Archeological Society, Lamesa, Texas.

THE NOCKENUT CLOVIS POINT

Thomas C. Kelly

ABSTRACT

The first reported find of a Clovis fluted point in Wilson County, Texas, occurred in 1986. The finding of any Clovis point is an interesting archaeological event, as Meltzer documented in his 1987 Texas Clovis fluted point survey. To date only a total of 205 Clovis points have been recorded in the entire state. None was reported from Wilson County. This specimen is larger than any of the points reported by Meltzer, and may possibly be the largest Clovis point ever found in Texas. Morphologically, the point differs from the majority of Texas Clovis points, and these typological implications are briefly examined.

THE FIND

In May, 1986, a farm worker (Richard Kalak) unknowingly made a most unusual archaeological discovery. He was thinning watermelon vines on Donna Dixon's Union Valley farm near Stockdale, Wilson County (Figure 1). His hoe struck a large chert artifact and flipped it out of the ground. The tip was broken off by the hoe and not recovered. This turned out to be a very large fluted Clovis point, since named the Nockenut Clovis Point (Figure 2), after the nearby abandoned town.

Joe Tovar, a resident of Stockdale and an archaeological student at The University of Texas at San Antonio, was the first to recognize the importance of the find. He brought it to the Center for Archaeological Research, the University of Texas at San Antonio, where it was examined by Dr. Thomas R. Hester and myself.

Kalak was able to point out the exact location of the find in the next to last row of watermelons, near a small oak grove. He and Tovar spent considerable effort looking for the missing tip in the red sandy soil. Tovar and the author also conducted an intensive survey of the area in December 1987, when the field was barren, but failed to find even a single chert flake in a 50-acre area. The inference then was that the point was an isolated find. The location was recorded with the Texas Archeological Research Laboratory, the University of Texas at Austin, as the Nockenut Site, 41 WN 77.

The Nockenut point is now in the McLean Bowman Paleo-Indian collection. He graciously loaned it to the author for analysis. Comparison with other recorded Clovis points suggests that this may be the largest so far recorded in Texas.

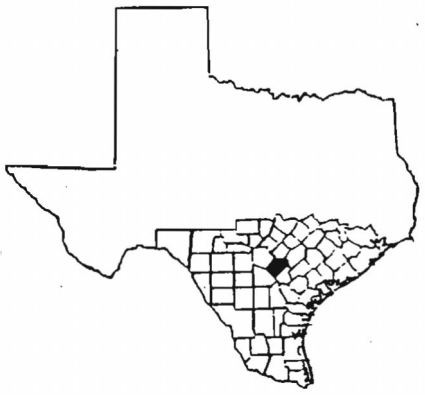


Figure 1. Map of Texas showing Wilson County (darkened area).

DESCRIPTION

The Nockenut point is made of dark honey-colored Edwards chert with small thin gray specks. These specks appear to be of chemical origin rather than material inclusions. Patina is not visible, a situation also noted on a Folsom point recently recorded from the same red sandy soil near La Vernia (Kelly n.d., manuscript in preparation). Heat treatment is suggested by its glossy appearance and slick feel, as well as by the length and regularity of some of the pressure flake scars. Soft hammer flaking was the primary reduction means, with random scars up to 30 mm long and 15 mm wide on the obverse, crossing well over the center (Figure 2, a).

The predominance of long, deep, wide scars on this face suggest that this was the dorsal side of a large flake or blade, and major irregularities, or an arris, were removed. A series of non-random, neat parallel pressure flakes (very small diffuse negative bulbs), were used to shape the tip.

The reverse has rather more regular flaking and the scars terminate on, or just slightly beyond, the mid-line (Figure 2, b). This would have been the flat ventral side of the flake or blade blank, and would have presented minimal problems to the knapper. Observed from either end, the reverse is slightly more symmetrical and rounder than the obverse. No effort was made to remove the ridges between adjoining flake scars, producing slightly serrated sharp edges on the upper two-thirds of the specimen. Microscopic examination shows no evidence of either impact or tool wear on these fragile serrations.

Because both faces have been completely covered with flake scars, it is impossible to determine conclusively whether the reduction sequence began with a very large flake, a complete nodule, or a blade struck off from a carefully prepared core. The symmetrical considerations mentioned, and the massive flaking on the obverse face, are suggestive of a blade struck from a prepared core. An arris or ridge would have been helpful in controlling the obverse flute.

Soft hammer technique and a bevelled platform was probably used for the obverse flute, as the first flute was 33 mm long and 17 mm wide and hinged out in a series of deep ripples (Figure 2, a). However, it was not thick enough to provide the desired basal thinning, and a second flute flake was removed. It feathered out smoothly, but not evenly, 17 mm up the first flute. A deep flake was then driven in from the right side at the top of the flute to deepen the distal end of the flute cavity.

The reverse flute (Figure 2, b) is a single deep blade scar 32 mm long and only 12 mm wide. It terminated in a hinge fracture, partially under the surface, producing an overhang. A sample of the red sandy soil, in which the point lay, is embedded under this overhang. This flute would seem to have been controlled for a desired size and would have required an isolated platform or nipple. This 12-mm-wide flute, and the implied narrow foreshaft to fit it, would appear to be entirely too small to properly support this massive 36-mm-wide point.

Lahren and Bonnichsen (1974) have suggested a way of hafting the Anzick Clovis points to possible bone foreshafts found associated with them, as well as other grave goods included in two very early burials. The proximal ends of these carefully shaped bone artifacts were pointed to insert into mainshafts, and the distal end was bevelled flat to theoretically fit in a Clovis flute. Their theory held that a short bevelled piece was fitted into the opposite flute and against the longer bevel of the foreshaft. It was then bound to both point and foreshaft.

Christopher Ferguson (Santa Fe Replicast) manufactures, and has experimentally hafted, casts of Paleo-Indian points. The drawing in Figure 3, b is his version of hafting Clovis points, as theorized by Lauren and Bonnichsen. The fitted piece does not necessarily have to be as wide as the foreshaft, and in Ferguson's reproduction the foreshaft is 17 mm in diameter with the fitted

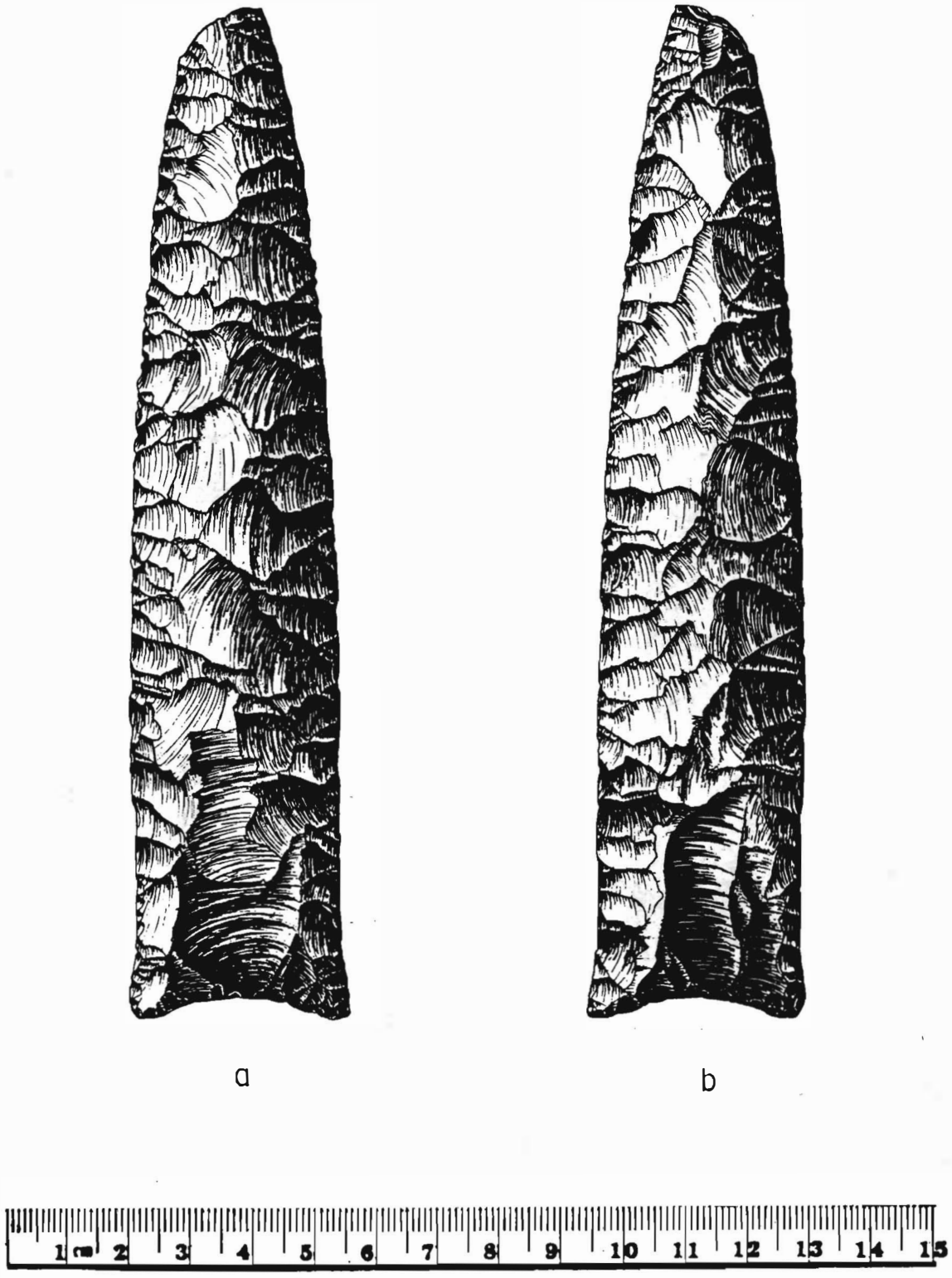


Figure 2. The Nockenut Clovis Point. a, obverse; b, reverse.

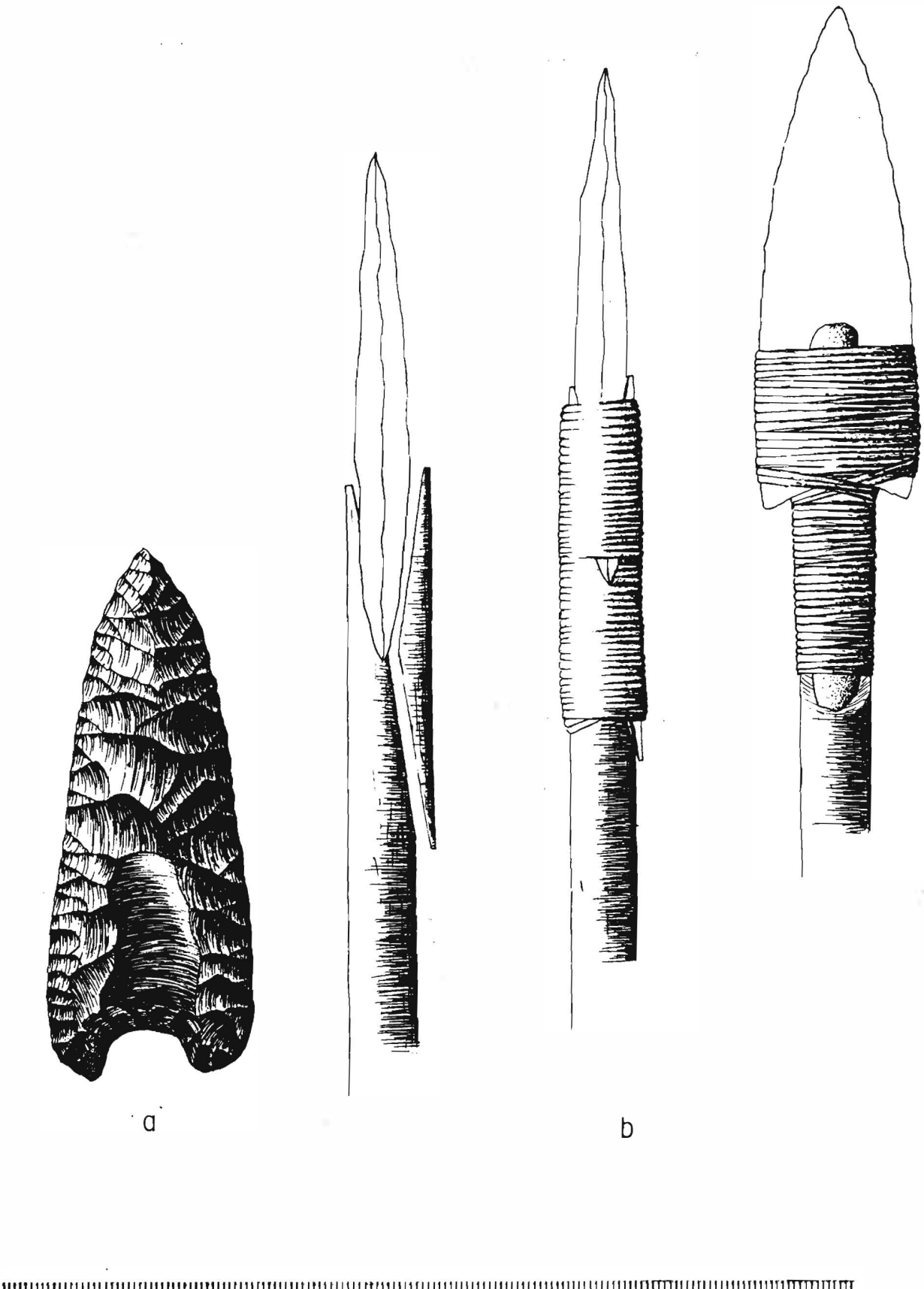


Figure 3. a, Colby Fluted Point; b, Hafted Clovis Point Model by Christopher Ferguson.

piece only 10 mm wide. This method of hafting would work well with the narrow reverse flute (Figure 2, b) of the Nockenut point, and with other Clovis points that are similarly fluted.

Frison (1978) repeatedly mentions the necessity of streamlined hafting to permit the essential very deep penetration required to kill megafauna. Ferguson's reproduction seems to satisfy this requirement, and at the same time provide a strong junction of haft to point. Incidentally, "fitted piece" is a poor name for this device. If this possible hafting scheme is eventually accepted, would "foreshaft splint" better describe it?

DIMENSIONAL DATA

The capitalized five letter codes (XXXXX) are the standard computer encoding symbols for the attributes used in computer-assisted analysis of Paleo-Indian point types, as outlined in Kelly (1982, 1983a, 1983b).

The Nockenut Clovis point has a length (LNGTH) of 164 mm (6 3/8 inches), even with the tip missing. Symmetrical extension of the two edges of the point would suggest that the missing tip was about 10 mm long.

Despite the massive reduction, the thickness (THICK) is still 10 mm for most of the point's length, tapering to eight mm toward the base from just above the flutes. Meltzer's study (1987:56, Table 9) for 135 Clovis points lists a minimum of .07 cm (.7 mm), maximum of 2.8 cm (28 mm) and a mean of .73 cm (7.3 mm). Having handled several hundred Clovis points myself, including a fair percentage of those used by Meltzer, only the mean (7.3 mm) seems possible. It is impossible to make a two-fluted point only .7 mm (less than 1 mm) thick. Likewise, 2.8 cm is 1.102 inches and an incredible thickness for any projectile point.*

The length of the shortest ground edge (GRNED) is 37 mm and coincides with the length of the shortest flute. This measurement has been suggested as the limit of foreshaft binding (Kelly 1983a).

The two non-metric (nominal) variables or attributes are the type of flaking (TYPFL) 003 for irregular, and type of basal thinning (BTHIN) 005 for fluted.

The width (WIDTH) and haft-distal (HDIST) are both 33 mm with the haft proximal measurement (HPROX) the widest dimension, 36 mm. The basal concavity (BACON) is 3 mm.

COMPARISONS WITH TEXAS CLOVIS AND OTHER PALEO-INDIAN POINTS

Meltzer (1987:56, Table 9), summarizing the 205 Clovis points recorded in his Texas Clovis Fluted Point Survey, found a mean length of 7.42 cm (74.2 mm or 2 7/8 inches) for unbroken points, and a maximum length of 13.04 cm (130.4 mm or 5 1/8 inches). The 130 cm point is probably the largest one illustrated by Meltzer (ibid.:57, Figure 10). This point seems to have a slightly flaring base, like the Nockenut point. Originally it was probably longer, as both tip and base seem to be damaged. Meltzer (1987:57) observes that the Texas Clovis sample is dominated (95%) by points with tapered sides, and bases that are significantly narrower than the widest parts of the blades. He refers to these

---

* Personal correspondence from Meltzer (March 18, 1988) states that both extremes have been dropped and the revised mean is .718 cm, maximum is 1.2 cm, and minimum is .3 cm. One was a format error, and the other was probably a misplaced decimal on submitted data. There may be a typological principle working here. This author strongly urges that typological data for projectile points be given in millimeters, thus eliminating decimal points and one possible source of error.

as classic Clovis points. The Nockenut point by this definition is clearly a non-classic Clovis point. Its parallel basal edges flare into ears somewhat like southern Texas Golondrina points.

In Turner and Hester (1985:81), Kathy Roemer illustrates a large Clovis point found by J. W. House (Hester 1966) on the McLean Bowman ranch in Dimmit County. It is 126 mm (4 15/16 inches) long and with the classic Clovis, slightly tapered, base. The massive flake scars on the illustrated face are quite similar to those on the obverse face of the Nockenut point. There is, again, the suggestion of removal of an arris and the implication of a blade reduction sequence. Turner and Hester describe the material as brown flint.

The largest Clovis point illustrated in Suhm and Jelks (1962:198, Plate 89, G) is from Calhoun County and is 133 mm (5 1/4 inches) long and also has massive scars on the illustrated face. They list 140 millimeters as the maximum length for Clovis points.

On the Gulf Coast a nearly identically shaped point, the largest found at McFaddin Beach (Long 1977:19, Figure 1, c) was documented as 121 mm long (4 3/4 inches), had the same flared basal ears as the Nockenut point, and was made of material described as brown Fredericksburg nodular flint.

Long (1977:8) noted the close similarity of this McFaddin Beach point to Ohio's Ross County points as described by Prufer and Baby (1963). Three of the 14 points identified by Long as Clovis has flaring ears. There were also classic Clovis points found on McFaddin Beach, and Long theorized that eastern and western forms of Clovis points were found together because McFaddin Beach represents the intersection of a major aboriginal highway in the east-west direction (the coast) with major north-south highways (Sabine-Neches and Trinity Rivers).

Several of these points are described as made of brown Fredericksburg flint, which is probably the same material as the Nockenut point. If this is so, it is not limited to Fredericksburg. Personal excavations and surveys in McMullen, Atascosa, Karnes, and Bexar counties have yielded the same kind of raw material, and some of the finest Paleo-Indian points from this area are made from it (Hester 1966; Kelly 1983a).

Mitchell and Winsch (1973) describe a fluted point with a flared base found in Webb County near the Rio Grande in south Texas. They also compare it with Ross County fluted points.

These findings are preliminary, but it appears that there are no Clovis points (reported in the Texas literature) larger than the Nockenut specimen. We will have to look farther afield for comparable specimens.

COMPARISON WITH OTHER LARGE CLOVIS POINTS

Blackwater Draw. This is the Clovis typesite and J. Hester has summarized all the work of the numerous people and institutions that worked there over a number of years. J. Hester (1972:97) identifies two Clovis varieties from the site.

Clovis Type 1 is referred to as classic Clovis with leaf-shaped blade, slightly contracting concave base, and short flutes on both faces. Lengths ranged from 2.0 to 6.0 inches (154 mm) and they were described as typically thick and heavy.

Clovis Type 2 points were much smaller with lengths ranging from 1.2 to 2.0 inches. Blades were triangular with the greatest width at the base. My impression is that these were broken and reworked points, which could account for the straightened bases.

By Krieger's (1964) typological rules, there were neither sufficient numbers nor sufficient character for these to be considered a separate type.

With a total of only 11 points, including a few short basal fragments, Hester mentions the difficulty in describing types. The 6.0-inch Clovis point was not illustrated so no comparison can be made with the Nockenut point.

Simon Site. Prior to 1988, two points from the Simon Site in southwestern Idaho (Butler 1963; Butler and Fitzwater 1965; Bonnichsen 1977; Woods and Titmus 1985) were the largest Clovis points found anywhere by the literature search for this paper.

Woods and Titmus (1985:7, Figures 6a and 6b) provided line drawings of the Simon Site specimens. Unfortunately, Woods and Titmus do not give the dimensions in their text, and it took some effort to discover that the given 5 cm scale was actually 2 cm long, representing a 5 to 2 or 2.5 to 1 reduction in scale. It is impossible for the casual reader, or the professional typologist as well, to get any impression of the true size of these points from merely looking at these reduced drawings. We can hope that all important points will eventually be published at actual size.

The two largest Simon points are both approximately 177.5 mm long (7 1/16 inches) and their tracings overlap almost perfectly. Richard McReynolds has drawn one (Figure 4 a) to approximate scale. They were part of what is believed to be a burial cache plowed up by an earth-moving machine. Except for their great size, they would fit into both J. Hester's and Meltzer's classic Clovis rubric with slightly contracting bases, slight basal concavities, and no ears. Woods and Titmus (1985:6) conclude that very large points (from both Simon and Anzick Sites) may represent the specialized production of grave goods and should not be used to define a northern variation of Clovis morphology.

Anzick Site. Frison (1978:171, Figure 5.14 a) illustrates a fluted point from the Anzick site near Wilsall, Montana. Richard McReynolds' excellent line drawing (Figure 4 b) is actual size. Frison's five centimeter scale (with millimeter divisions) measures exactly five cm (actual size) and required considerable careful attention by author, photographer, and publisher to reproduce it to scale.

Anzick is another site found by earth-moving equipment, and consequently greatly disturbed. It was a burial site containing two sub-adults covered with red ocher and with over 100 stone and bone artifacts.

The illustrated point (Figure 4 b) is 153 mm (six inches) long, straight based with only the slightest curve to the basal edges. The long flute would have required some kind of isolation of the striking platform. It does not fit into the classic Clovis category. Like the Nockenut point, this point is 10 mm thick. Study of a Christopher Ferguson cast of this point strongly suggests it was made on a macro-blade. Minimal flaking was applied to the flat ventral side of the blade, and much heavier flaking on the dorsal side reduced, but did not completely remove the arris.

Bonnichsen (1977) suggested that the materials at both the Simon and Anzick sites had been heat treated, and that the oversized points at both sites were made for grave goods.

Colby Site. Frison (1978:92, Figure 3.4) illustrates fluted points from the Colby site in Wyoming. Again, the site was discovered by a heavy equipment worker, Donald Colby, but fortunately archaeologists were able to excavate the mammoth bone beds there and find Colby points in direct association.

The points were not especially large (90 mm, or 3 9/16 inches) and are mentioned here only to illustrate the extreme variations found in Clovis points. Three of the four points had sharply rounded basal corners and deep basal concavities up to nine millimeters in depth. The step fractures that result from fluting were carefully removed by large flakes driven in from the sides. Richard McReynolds has provided us with a drawing (Figure 3 a) to the same scale of the Nockenut, Anzick, and Simon points for both metrical and typological comparisons.

Richey-Roberts Clovis Cache. The discovery of the Richey-Roberts cache of massive Clovis points at East Wenatchee, Washington (Wheat 1988 a,b,c) over-

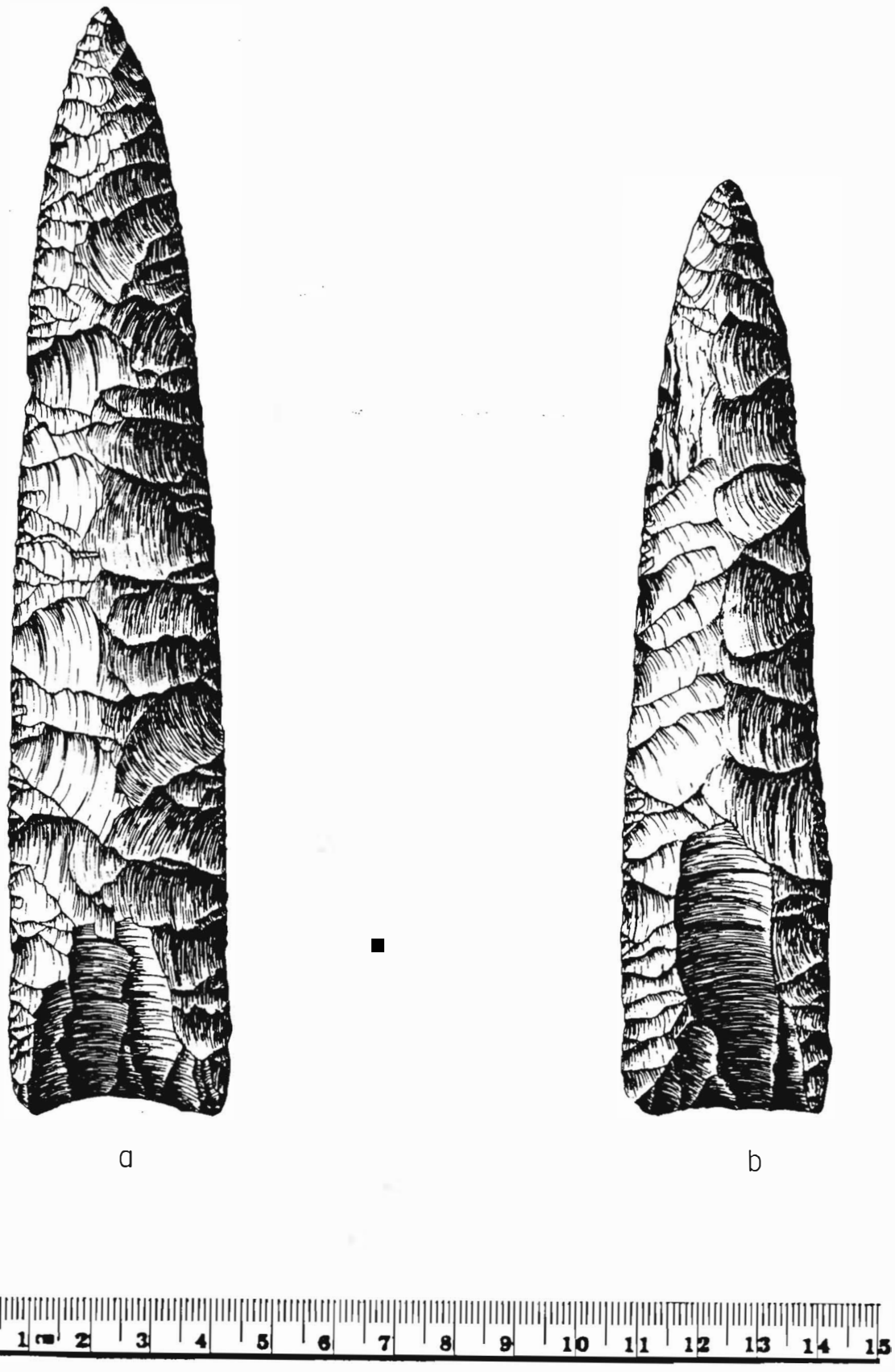


Figure 4. a, Simon Clovis Point; b, Anzick Fluted Point.

shadows all prior claims to large Clovis points. The first discovery was by workers installing underground irrigation in an apple orchard in 1987. Under the auspices of Washington State University's Dr. Richard Mehringer, a short authenticating excavation was conducted in April 1988 with authorities Vance Haynes, George Frison, Dennis Stanford, and Richard Gramley participating. Among other artifacts fourteen completed Clovis points were found with several measuring eight to nine and one-half inches in length. From the published photographs, the points (disregarding their massive size) fall into the classic Clovis rubric. One pictured has a narrow flute like the Nockenut point, and all have massive random flake scars. A statement was made (without attribution) that the points had been heat treated.

SUMMARY BY SITE AND LENGTH OF VERY LARGE CLOVIS POINTS

		Length	
		Millimeters	Inches
1.	Richey-Roberts	240	9.5
2.	Simon	177	7
3.	Nockenut	164	6.4
4.	Anzick	153	6

DISCUSSION

There have not been enough flaring based (swallow-tailed) points like the Nockenut and some of the McFaddin Beach points recorded yet in Texas to establish a separate type. Neither are there any known excavated specimens to provide absolute or serriated dating or faunal associations. Morphologically they are different enough from classic Clovis points to be distinguished as separate types by sophisticated computer programs. When Krieger's (1944, 1964) criteria of "sufficient numbers of sufficient character" is met and both temporal and areal data are available, we should establish a new type, the (**named**) **Fluted** point, with the name being provided by the first excavated and dated specimen.

In a typological study of Plainview and Golondrina points (Kelly 1982) swallow-tailed Golondrina bases were found to be a later technological development. They provide haft bindings with greater strength in resisting forces against the blade edges of projectile points, such as would occur in their secondary use as knives. It may also turn out that the swallow-tailed fluted points, like Nockenut, are also a more recent development than classic Clovis points. Some tenuous support for this theory is based on the similarity of Nockenut to eastern Ross County fluted points. Most of the dated eastern fluted points are later than western classic Clovis types. The average of 13 radiocarbon dates from the Nova Scotia Debert Site (MacDonald 1968:53) was 10,600 B.P. Haynes et al. (1984:187), using the tandem accelerator mass spectrometer (TAMS) in six samples, dated the Vail site in Maine (Gramley 1982) as between 10,000 B.P. and 10,040 B.P. Haynes et al. (1984:188) list three Clovis typesite dates' average as 11,170 B.P. We should note that there are also eastern classic Clovis points, but dates were not found.

Because of the far greater numbers and diversity of eastern fluted points, and a few radiocarbon dates greater than 11,000 B.P., Mason (1962), Brennan (1982), and others, have suggested an eastern rather than a western homeland of the Clovis complex. Brennan (1982), summarizing results of a survey of Eastern North America (Cis-Appalachian) fluted points, found over 5,800, a truly large number. Florida alone had the greatest number, by states, of 1,392. Texas with only 205 would seem to be a desert by this comparison.

The very close similarity between Texas non-fluted Barber points and the Maine Vail fluted points had been previously remarked (Kelly 1983 b; Gramley 1984). Adequate dating of Nockenut-MacFaddin Beach-Ross County, and Vail-Dalton-Barber points, should provide some interesting insights into the origin of early point types.

In summary, the Nockenut point may be part of a Texas coastal Paleo-Indian tradition of flaring-based fluted points that may have eastern origins. Far more careful studies and data will be required before this theory can be validated.

CONCLUSIONS

No earth-shaking conclusions can be drawn from a single isolated find of a Clovis point, but a few general observations are in order.

The Nockenut point, because of its great size and lack of wear or use damage, may be an item of grave goods as suggested for other very large Clovis points, such as Anzick and Simon points (Butler 1963; Butler and Fitzwater 1965; Bonnichsen 1977; Woods and Titmus 1985). Heat treatment is also common to all these sites.

The complete absence of debitage at the Nockenut site also is suggestive of a cache, hunting loss, or burial goods.

The Nockenut point falls into Meltzer's (1987) non-classic Clovis rubric and fits rather well into the Ross County eastern Clovis tradition (Prufer and Baby 1963), along with Long's McFaddin Beach and other Texas examples, none of which, unfortunately, have been dated. Present knowledge suggests that the distribution of these points may be limited and tied to the upper Texas Coast.

The extreme variability between classic Clovis, Ross County, Anzick, Colby, Debert, and Vail points, clearly indicate the folly of calling every heavy fluted point simply Clovis. As long as they can be separated by morphology, time periods and areal distribution, it is typologically advantageous to do so.

A last, and at this point only subjective, observation is that large Clovis points in South Texas are frequently made of a homogeneous brown or honey-colored material that is hardly distinguishable from English flint. It was probably used because of its excellent knapping characteristics. This is often referred to as Hill Country, or Fredericksburg flint or chert, but specific quarries have not been noted. Information regarding these sources is solicited.

ACKNOWLEDGMENTS

I am indebted to Dr. Thomas R. Hester and Jimmy Mitchell for editorial guidance and certain scarce references. Both should be held blameless, however, for the final results. Richard McReynolds has provided the line drawings that speak eloquently for themselves.

References

Bonnichsen, Robson
1977 Models for Deriving Cultural Information from Stone Tools. **National Museum of Man, Mercury Series** No. 60. Ottawa.

Brennan, Louis A.
1982 A Compilation of Fluted Points of Eastern North America by Count and Distribution: An AENA Project. **Archaeology of Eastern North America** Vol. 10:27-45.

Butler, B. Robert
1963 An Early Man Site at Camas Prairie, Southcentral Idaho. **Tebiwa** 6(1):22-23.

Butler, B. Robert and J. R. Fitzwater
1965 A Further Note on the Clovis Site at Big Camas Prairie, Southcentral Idaho. **Tebiwa** 8(1):38-40.

Frison, George C.
1978 **Prehistoric Hunters of the High Plains.** Academic Press, New York.

Gramley, Richard Michael
1982 The Vail Site: A Palaeo-Indian Encampment in Maine. **Society of Natural Sciences Bulletin** 30. Buffalo, New York.

1984 Kill Sites, Killing Ground and Fluted Points at the Vail Site. **Archaeology of Eastern North America** 12:110-121.

Haynes, C. Vance, D. J. Donahue, A. J. T. Jull and T. H. Zabel
1984 Application of Accelerator Dating to Fluted Point Paleoindian Sites. **Archaeology of Eastern North America** 12:184-191.

Hester, James J. (with sections by Ernest Lundelius, Jr. and Roald Fryxell)
1972 Blackwater Locality No. 1: A Stratified Early Man Site in Eastern New Mexico. **Fort Burgwin Research Center** Publication No. 8.

Hester, Thomas R.
1966 A Clovis Fluted Point from Southwest Texas. **Newsbulletin of the South Plains Archeological Society** 12:3-4.

Kelly, Thomas C.
1982 Criteria for Classification of Plainview and Golondrina Projectile Points. **La Tierra** 9(3):2-25.

1983a The Brom Cooper Paleo-Indian Collection from McMullen County, Texas. **La Tierra** 10(3):17-40.

1983b The Barber Paleo-Indian Point. **La Tierra** 10(4):10-25.

Krieger, Alex D.
1944 The Typological Method. **American Antiquity** 9:271-288.

1964 The New World Lithic Typology Project. **American Antiquity** 29:489-493.

Lauren, Larry A., and Robson Bonnichsen
1974 Bone Foreshafts from a Clovis Burial in Southwestern Montana. **Science** 186:147-150.

Long, Russell J.
1977 McFaddin Beach. **Spindletop Museum, The Pattilo Higgins Series of Natural History and Anthropology** No. 1, Lamar University.

MacDonald, G. F.
1968 Debert: A Palaeo-Indian Site in Central Nova Scotia. **National Museum of Canada, Anthropology Papers** 16.

Mason, Ronald J.
1962 The Paleo-Indian Tradition in Eastern North America. **Current Anthropology.** June.

Meltzer, David J.
1987 The Clovis Paleoindian Occupation of Texas: Results of the Texas Clovis Fluted Point Survey. **Bulletin of the Texas Archaeological Society** 57:27-68.

1988 Personal Communications. Author's files.

Mitchell, Major J. L. and Captain John Winsch
1973 A Paleo-Indian Point from South Texas. **Ohio Archaeologist** 23(2):9.

Prufer, Olaf H. and Raymond S. Baby
1963 **Palaeo-Indians of Ohio.** The Ohio Historical Society, Columbus, Ohio.

Suhm, Dee Ann and Edwar B. Jelks
1962 Handbook of Texas Archeology: Type Descriptions. **Texas Archeological Society Special Publication** 1, and **Texas Memorial Museum Bulletin** 4., Austin.

Turner, Ellen Sue and Thomas R. Hester
1985 **A Field Guide to Stone Artifacts of Texas Indians.** Texas Monthly Press, Austin.

Wheat, Dan
1988a Clovis cache is reburied; summer dig is considered. **The Wenatchee World.** Friday, April 15. Page 1.

1988b Museums want exhibits to explain Eastside dig. **The Wenatchee World.** Tuesday, April 19. Page 1.

1988c Clovis site to be reopened in 1989. **The Wenatchee World.** Friday, April 29. Page 1.

Woods, James C. and Gene L. Titmus
1985 A Review of the Simon Clovis Collection. **Idaho Archaeologist** 8(1):3-8.

MOCHA WARE CERAMIC ARTIFACTS FROM THE LA VILLITA EARTHWORKS SITE

Joseph H. Labadie

ABSTRACT

This paper presents the results of original archival and historical research conducted by the author during January to May 1987 on Mocha ware, a variety of ceramic ware. Illustrated examples of Mocha ware from the La Villita Earthworks site are presented. Analysis has provided additional evidence to support the current pre-1850s dating of the site.

BACKGROUND

The La Villita Earthworks Site (41 BX 677) is located in downtown San Antonio, Texas at the corner of South Alamo and East Nueva Streets (see Figure 1). The site is (was) located beneath the relocated Fairmount Hotel. The site was discovered during the course of routine archaeological monitoring for the Fairmount Hotel site and was excavated under the supervision of CAR-UTSA archaeologists. The site yielded over 20,000 artifacts including cannonballs, gunflints, children's toys, and a variety of domestic and household items (Labadie 1986). The assemblage includes over 10,000 individual ceramic sherds many of which are relatively large by comparison to other archaeological sites from the same historic period. In some cases nearly complete vessels have been reassembled. The entire artifact assemblage has been designated as a State Archeological Landmark by the Texas Antiquities Committee as the site can be directly linked to the Battle of the Alamo in 1836.

During preliminary analysis of the ceramics from La Villita Earthworks (Fox 1986:107-127), the sherds were initially divided into analystic groupings using paste (also known as "fabric" or "body") as the primary criterion; subgroups were defined by method of surface treatment. For example, hard paste earthenwares were subdivided into transfer-printed, hand-painted, edged, sponged, and undecorated varieties. The sherd totals compiled for all types and varieties (Fox 1986:Table 3) within a five unit sample (29 total units) indicates that the assemblage is dominated by imported British earthenwares that are generally referred to in the literature as "refined earthenwares" (Fox 1986; Lewis 1985) or as "peasant wares" (John Smith 1985; Van Rensselaer 1966).

REFINED EARTHENWARES

The term "refined" earthenware denotes, in general terms, all utilitarian wares (referred to by the British as "peasant wares") that were produced via improved, refined, or new techniques that developed out of the British Industrial Revolution. During the last half of the eighteenth century, the British ceramic industry underwent a transition, essentially from a cottage industry to a commercial, mass-production industry, that heavily relied on a world export market. Therefore, the term "refined earthenware," in the literature, can be applied to a number of different types (i.e., creamware, pearlware, white ware) and varieties (i.e., slip ware, edged ware, transfer-printed ware) depending on the context in which the term is being used.

Slip ware is a nineteenth century British term that, in the literature, has been used by numerous authors interchangeably with the term "dipped ware" (also spelled "dipt"). Both terms were in common use by the first half of the nineteenth century; however, they refer to a single process of surface decoration regardless of ceramic fabric. The process involved the application of "slip" to form various color and design elements.

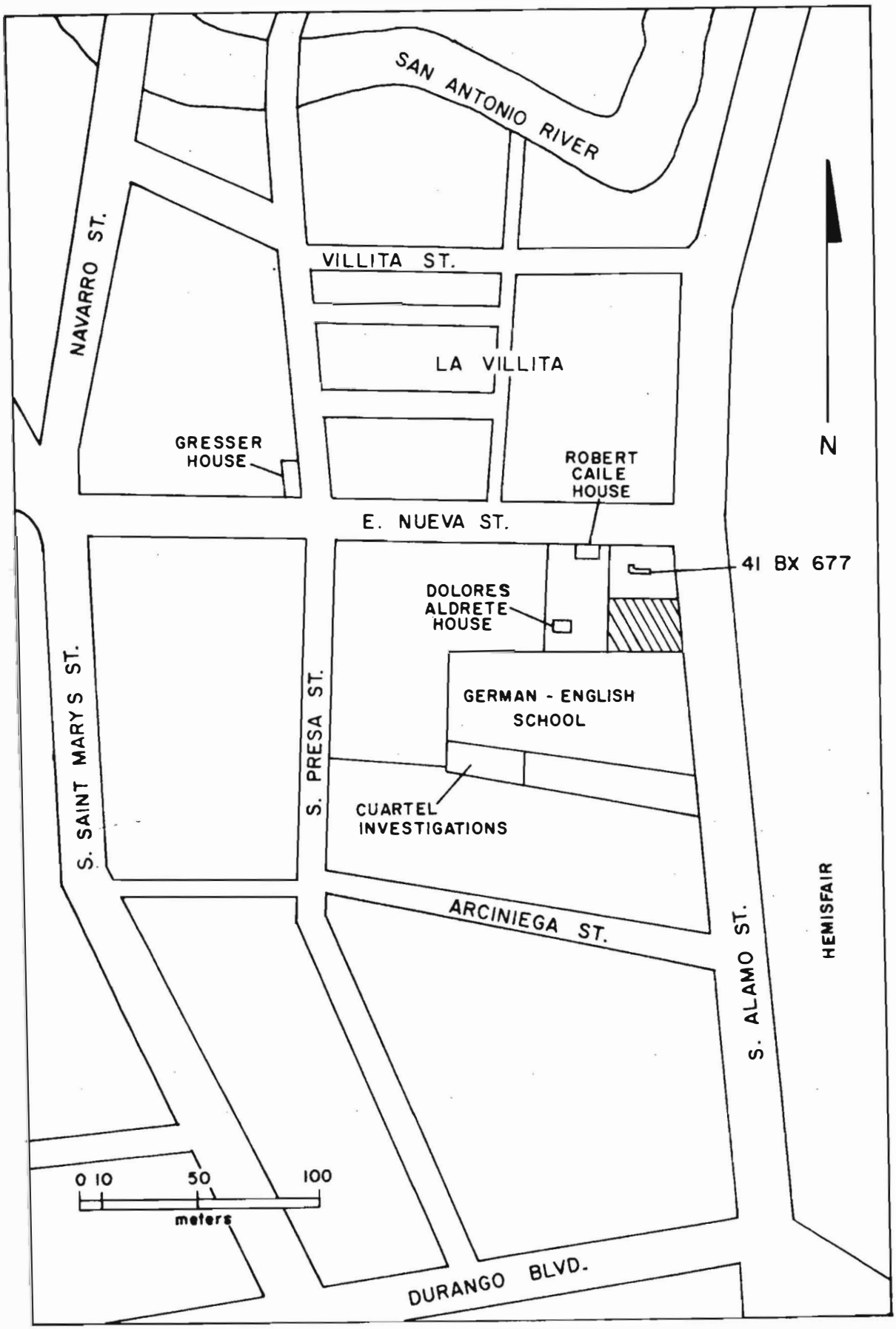


Figure 1. Location of La Villita Earthworks (41 BX 677) on the Northern Half of NCB 155, Lot 6. The southern half of Lot 6 (shaded) was tested during the Fairmount II Project (June 12-14, 1985; Labadie 1986). Adapted from Fox, Valdez, and Bobbitt (1978:Figure 1).

Slip is any clay that has been mixed to a consistency of cream (Savage and Newman 1985). Slip was made in a variety of colors and was either used as a wash for an entire vessel, or was applied with a brush as dots, narrow bands, wavy lines, or as colored panels. Colored and uncolored slips were applied to "green vessels" (unfired clay) after which the vessel was glazed and fired so as to protect the decoration.

Slip wares were produced in a number of different varieties and on several different ceramic fabrics. However, three major design elements dominated the industry from about 1790 through the mid-1950s. They are banded slip wares, mocha wares, and marbled slip wares (Van Rensselaer 1966:378).

Banded slip wares first appeared on creamware fabric at the very end of the eighteenth century, and on pearlware fabric by the first quarter of the nineteenth century. In general the first banded creamwares used bands (in various widths) of ochre, blue, black, and dark brown that were often combined with mocha designs (Van Rensselaer 1966):337). Later on tones of slate green, dark green, olive green, chestnut brown, orange, tans, greys, and blue-green colors were introduced (ibid.). By the first quarter of the nineteenth century additional decorations known as the "worm," the "twig," and "cats eye" were being combined with mocha and banded designs. Other slip ware decorative techniques produced effects known as tortoise shell, agate, marble, and a combed pattern (Lewis 1985; John Smith 1985).

MOCHA WARE

The distinctive mocha ware design, a tree-like or moss-like dendritic pattern, is said to have originated its name from similarities with Mocha Stone, a type of dendritic chalcedony from the Red Sea area of Arabia that was widely used in jewelry throughout eighteenth century Europe (Van Rensselaer 1966; Lewis 1985). The technique that produces mocha wares was first used on creamware and yellow ware fabrics in the 1790s, and later on pearlwares, white wares, granite wares, and chalkwares (Lewis 1985:231; John Smith 1985).

The mocha design utilizes a broad band of colored slip, often blue, coffee, or gray in color, on which the potter made the moss-like design by adding several drops of "tea" to the still-wet bands of colored slip producing a chemical reaction between the two substances. No two potters used the same recipe for the "tea" that produced the design. One recipe was said to consist of a "saturated infusion of tobacco in stale urine, and turpentine" (William Evans, 1846, In: Van Ransselear 1966:338). Others suggest that "iron oxide with orange or lemon juice or tobacco spittle and urine" was a common recipe (Lewis 1985:233). In 1911 the process was described in detail:

> The "thrower" or man at the potter's wheel, first forms the vessel by hand after which it is sent to the turner, who puts it on a lathe and shaves the surface smooth. The ground color or tint is then blown on the article from a bottle or atomizer by the "turner," and while the surface is still wet, the piece is handed to an assistant who places it top downwards and with a camel hair brush or pencil, which he dips into a prepared solution ("tea") touches the top of the moist zone (which would be the bottom when the vessel is inverted and placed in correct position), when the pigment flows down and spreads out in delicate moss-like tracery.
>
> (Anonymous 1911)

The earliest dated piece of mocha ware (1799) is reported to have been produced in the town of Burslem by the pottery of Edge and Malkin (Lewis 1985:233). Table 1 lists a number of British potteries that are reported to have been commercially manufacturing mocha wares by 1836.

TABLE 1. British Potteries Commercially Manufacturing Mocha Wares by 1836. (Sources: Van Rensselaer 1966; Lewis 1985; Savage and Newman 1985)

Company Name	Location of Pottery
Adams, Copeland and Garret	Stoke-on-Trent
Cork and Edge, Pinder and Bourne, and I. and R. Riley	Burslem
Edge and Malkin	Burslem
Pinder and Bourne	Burslem
Broadhurst	Fenton
Tames	Longton
McIntyre	Colbridge
T. G. Green and Co.	Church Gresley
Anthony Amatt	Bristol
Ynysmeudwy	Swansea
Maling and Son	Newcastle-on-Tyne
William Chambers, Jr.	Llanelly in Wales

* * * * * * *

Mocha ware enjoyed great popularity in Europe during the 1850s and was commercially produced for export to the United States until 1934 (Lewis 1985:231). The first, and only, reported American pottery to manufacture mocha wares was the Edwin Bennett Company of Baltimore which began operating about 1850 (Robacker and Robacker 1978).

VESSEL FORMS

Mocha wares were originally produced as inexpensive utilitarian wares intended for everyday use in the average British household. After 1800, the Staffordshire region of Great Britain manufactured vast quantities of mocha wares for export to the United States (Williams 1972). Mocha wares enjoyed such popularity, both at home and abroad, that their production became a staple of the British ceramic industry for 30-40 years.

Mocha design elements are most commonly associated with domestic vessel forms such as tankards, pitchers, and bowls. Table 2 lists additional forms that utilized mocha designs. One of the more common vessel forms was the mug or tankard. In 1875 a pint ale mug could be purchased in Britain for 6d and quart mugs for 10d (Lewis 1985:233). Mocha ware mugs (pint and quart) were very popular during the middle to late 1800s for use in "public houses" as a standard for measuring such things as shrimp, nuts, and seeds (John Smith 1985). Tankards made after 1824 are often marked with impressed clay pads attached below the rim, a verification of the true liquid capacity (Van Rensselaer 1966:340).

* * * * * * * *

TABLE 2. Range of Ceramic Forms That Have Mocha Design Elements. (Sources: Teulon-Porter 1971; Van Rensselaer 1966; Lewis 1985; Lockett 1972; Williams 1978)

Butter Pots	Plates (very rare)	Spill Vases
Porringers	Decorative Tiles	Chamber Pots
Lidded Jars	Bowls	Dolls
Jugs	Teapots	Miniature Pieces
Tankards	Salt/Pepper Shakers	Mustard Pots

MOCHA WARES FROM LA VILLITA EARTHWORKS

All mocha ware vessels recovered at the La Villita Earthworks Site are fragmentary. However, a minimum of 10 different vessels are represented by the 61 mocha ware sherds within the ceramic assemblage.

Vessel 1 (Figure 2, A, B)
Vessel 1 is a cylindrical pearlware tankard, represented by 15 body sherds (5 rim, 10 body). The mocha design is made in black on a tan-colored central panel bordered by a single black band. The rim has four impressed bands covered by a translucent green wash. Vessel height is estimated at 125-127 mm.

Vessel 2 (Figure 2, C)
Vessel 2 is a pearlware bowl, represented by 14 sherds. It appears to be about 35 percent complete. The mocha design is made in black on a chestnut-colored central panel which is bordered, top and bottom by two narrow black bands. Vessel height is 76 mm.

Vessel 3 (Figure 3, A)
Vessel 3 is a pearlware bowl, represented by one rim sherd. The mocha design is made in black on a blue-colored central panel. The panel is bordered by a single black band at the top. The rim has an impressed diaper pattern with a translucent green wash. Vessel height cannot be estimated.

Vessel 4 (Figure 3, B, C)
Vessel 4 is represented by two pearlware body sherds; vessel form cannot be determined. The mocha design is in black on a coffee-colored panel. The panel is the darkest brown seen on any of the mocha sherds.

Vessel 5 (Figure 3, D, E)
Vessel 5 is represented by three pearlware body sherds; vessel form cannot be determined. The mocha design is in black on a dark-grey colored panel bordered by a single blue band.

Vessel 6 (Figure 3, F, G)
Vessel 6 is represented by two pearlware body sherds; vessel form cannot be determined. The mocha design is in black on a light-brown colored panel. The panel is bordered by a single dark-brown band.

Vessel 7 (Figure 3, H-J)
Vessel 7 is a pearlware pitcher, represented by nine sherds (1 rim, 7 body). The mocha design is made in black and blue on a tan-colored central panel. The panel is bordered by at least three blue bands at the top. The fragmentary nature of the vessel prevents any estimates of height or diameter.

Vessel 8 (Figure 4, A)
Vessel 8 is a pearlware bowl, represented by one rim sherd. The mocha design is made in black on a light tan-colored central panel. The panel is bordered by a single black band at the top. The rim has been finished in an impressed diaper pattern with translucent green wash.

Vessel 9 (Figure 4, B)
Vessel 9 is a pearlware bowl, represented by one rim sherd. The mocha design is in black on a coffee-colored central panel. The panel is bordered by a single black band at the top. The rim has been finished in an impressed diaper pattern with a translucent green wash.

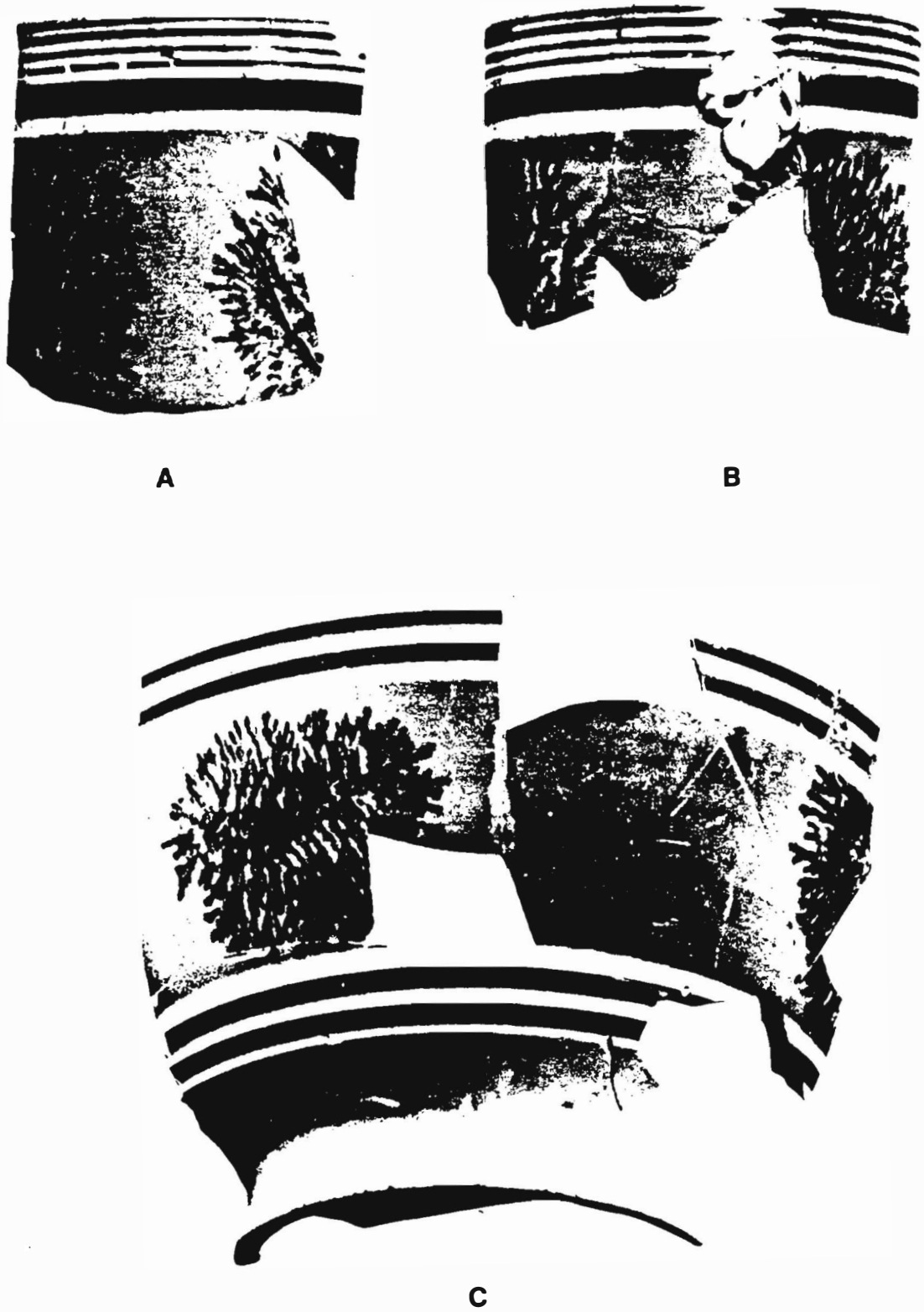


Figure 2. Mocha Ware Sherds from the La Villita Earthworks Site. A-B, Vessel 1; C, Vessel 2.

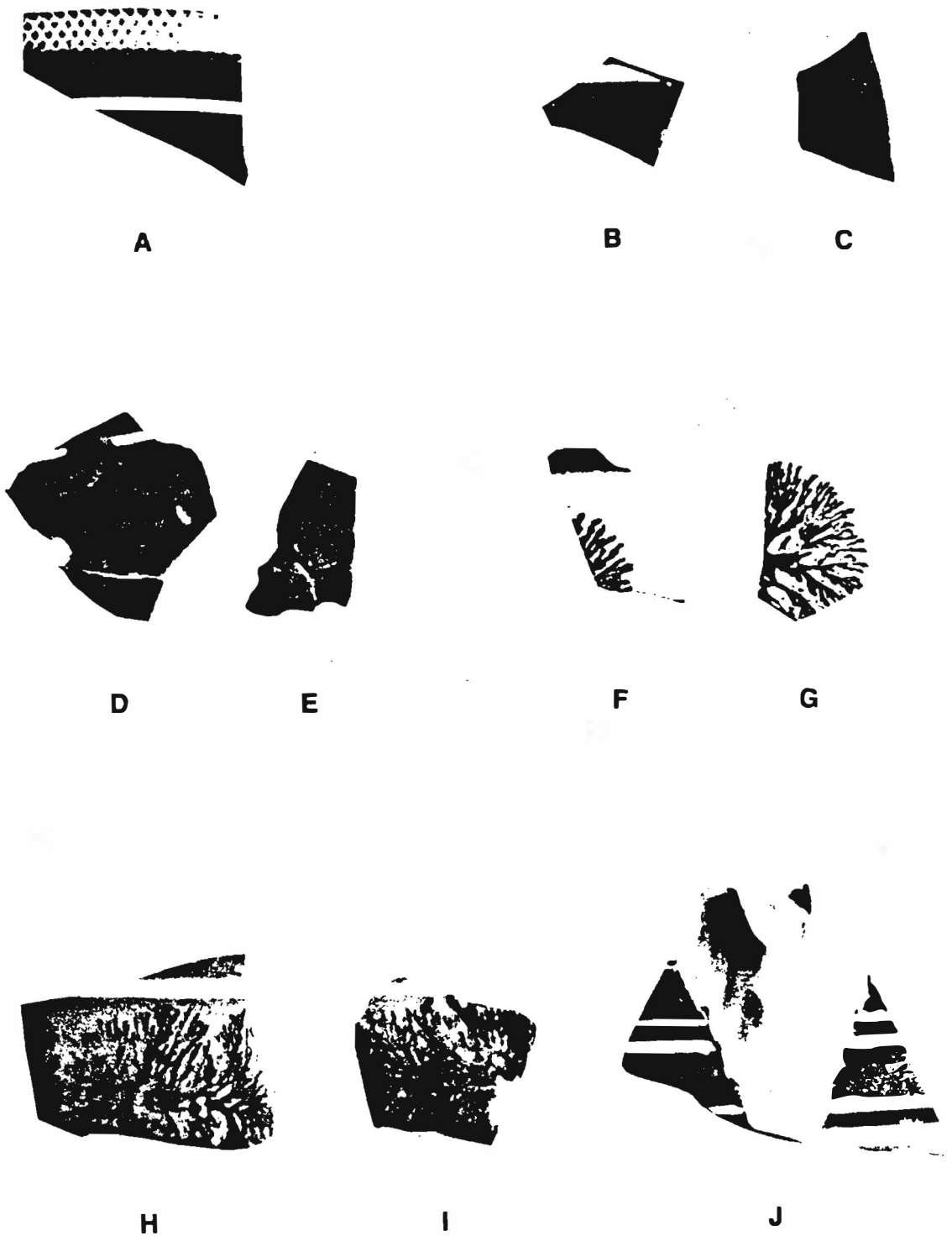


Figure 3. Mocha Ware Sherds from the La Villita Earthworks Site. A, Vessel 3; B-C, Vessel 4; D-E, Vessel 5, F-G, Vessel 6; H-J, Vessel 7.

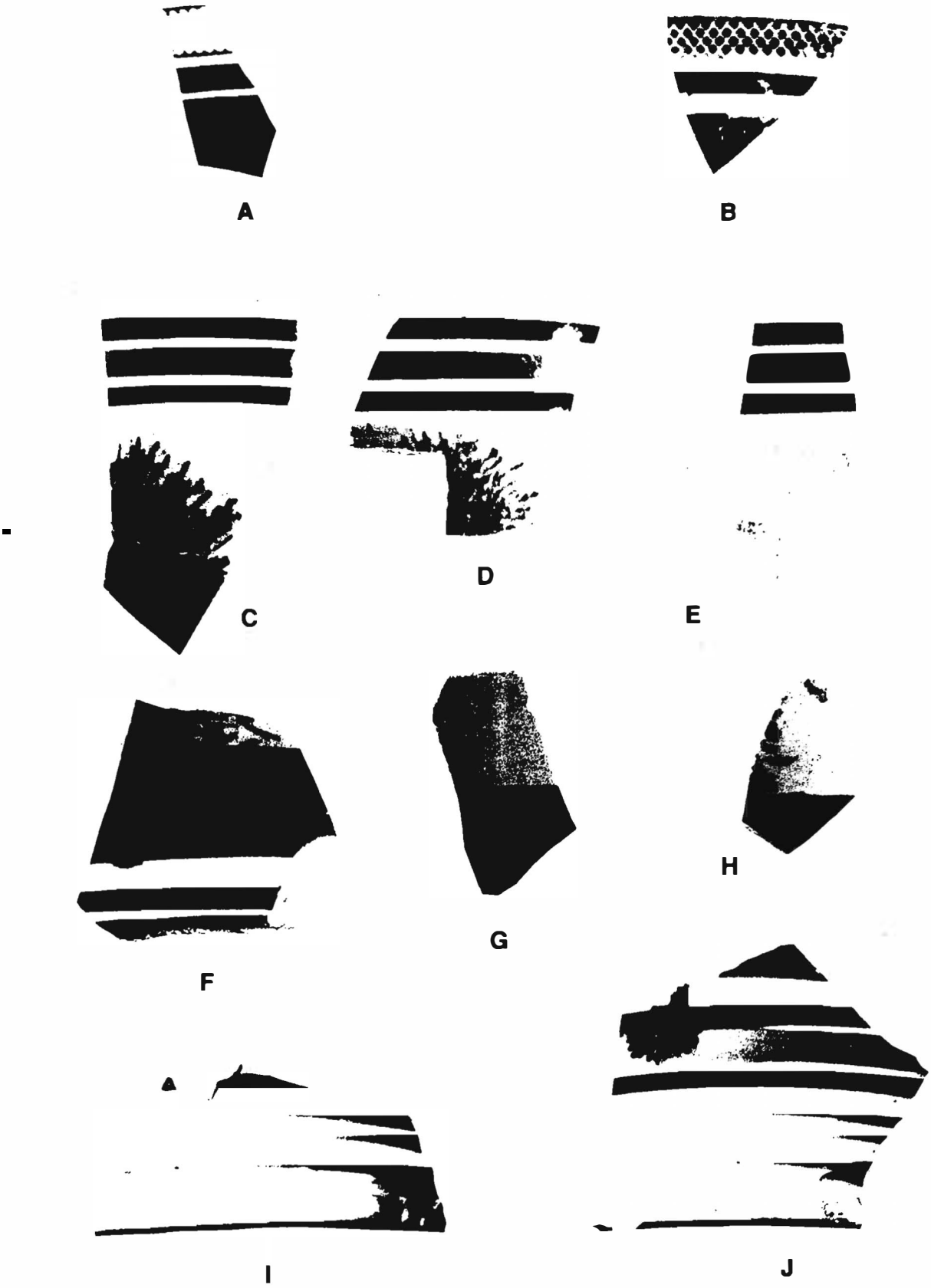


Figure 4. Mocha Ware Sherds from the La Villita Earthworks Site. A, Vessel 8; B, Vessel 9; C-I, Vessel 10.

Vessel 10 (Figure 4, C-J)

Vessel 10 is a cylindrical pearlware tankard, represented by 11 sherds (4 rim, 5 body, 2 basal). The mocha design is made in black on a two-colored (light gray and ochre) central panel. The panel is bordered, top and bottom, by three thin black bands (one ochre flanked by two black). Vessel height is estimated at 125-127 mm.

SUMMARY

Historical and archival research has been very helpful to the laboratory analysis of mocha ware sherds from the La Villita Earthworks Site. From among the 10,000 plus sherds in the assemblage, a total of 61 mocha ware sherds were identified. A total of 10 different vessels are represented.

The assemblage contains two different forms of bowls. Vessels 3, 8, and 9 are all thought to be the same height and diameter. Vessel 2 is similar in general planform, but would stand taller in height and would be broader in diameter. The assemblage contains two tankards; it cannot be determined if both vessels are of the same form (height and diameter). Rim treatments and color combinations are different, suggesting that the tankards represent two different decades during the nineteenth century.

This analysis has provided additional data to support a pre-1850 date for the ceramic assemblage. Future research will undoubtedly provide new insights to other ceramic types. The sheer volumn of ceramics to be analyzed suggests that such research may take several years to complete.

ACKNOWLEDGEMENTS

My thanks to John Smith, archaeologist from Stourbridge, West Midland England, who graciously spent several hours examining the collection and sharing his knowledge on dating and manufacturing techniques. Research was supervised by Anne A. Fox (CAR-UTSA Lab Director) and was conducted under the direction of Thomas R. Hester (CAR-UTSA Director).

References

Anonymous
1911 Old China: Agate and Mocha. **The House Beautiful**, September 1911:xix-xxi.

Fox, A.
1986 Ceramics. In: La Villita Earthworks: A Preldiminary Report on Mexican Siege Works at the Battle of the Alamo. Compiled by J. Labadie. **Center for Archaeological Research, The University of Texas at San Antonio, Archaeological Survey Report** 159.

Fox, D. E., F. Valdez, Jr., and L. O. Bobbitt
1978 An Archaeological Assessment of the Dolores Aldrete House Property, San Antonio, Texas. **Center for Archaeological Research, The University of Texas at San Antonio, Archaeological Survey Report** 58.

Labadie, J.
1986 La Villita Earthworks: A Preliminary Report on Mexican Siege Works at the Battle of the Alamo. **Center for Archaeological Research, The University of Texas at San Antonio, Archaeological Survey Report** 159.

Lewis, G.
1985 **A Collector's History of English Pottery.** Antique Collector's Club, Suffolk, United Kingdom.

Robacker, E. F. and A. F. Robacker
1978 **Spatterware and Sponge, Hardy Perennials of Ceramics.** A. S. Barnes and Company, New Jersey.

Savage, G. and H. Newman
1985 **An Illustrated Dictionary of Ceramics.** Thames and Hudson, publishers. London.

Smith, John
1985 Interviewed by the author and Anne a. Fox at the Center for Archaeological Research Laboratory, The University of Texas at San Antonio, April, 1985.

Teulon-Porter, N.
1971 **The N. Teulon-Porter Collection of Mocha Pottery.** Museum and Art Gallery, Stoke-on-Trent. United Kingdom.

Van Rensselaer, S.
1966 Banded Creamware. **Antiques**, September, 1966.

Williams, P.
1978 **Staffordshire Romantic Transfer Patterns.** Fountain House East, publishers. Jefferson, Kentucky.

* * * * * * * * * * * * * * * *

A REMINDER

This is the last issue for 1988 membership. Please renew as early as possible for 1989 so that we may mail the January issue as early as we can. Dues are: Individual, $7.50; Family, $15.00; Contributing, $15.00; Supporting, $30.00. Mail to Liz Smith, 1607 West Huisache, San Antonio, Texas 78201.

CHRONOLOGY OF ARROW POINT TYPES IN SOUTH TEXAS

Leland W. Patterson

ABSTRACT

The chronology and possible sources of the introduction of Perdiz and Scallorn arrow point types into south Texas are discussed. It is proposed that the earliest examples of Perdiz points in south Texas may have come from southeast Texas, while the earliest examples of Scallorn points in south Texas could have a central Texas origin.

INTRODUCTION

The bow and arrow seems to have been introduced into Texas from other geographic areas. The details and chronology of this introduction remain vague, however. The bow and arrow may not have been introduced into all regions of Texas at the same time (Patterson 1982:18). Judging by data from the Great Basin (Cressman 1977:106), the introduction of the bow and arrow into various areas of southern North America was not a sudden process.

Black (1986) has discussed the chronology of Perdiz and Scallorn arrow points in south Texas, with possible introduction of these arrow point types from central Texas. This article discusses an alternate possibility: that the earliest use of these arrow point types in south Texas may have been influenced by contacts with the adjacent regions of both central and southeast Texas. The earliest Perdiz and Scallorn arrow points found in south Texas may have diffused from southeast and central Texas, respectively.

EARLIEST USE OF THE BOW AND ARROW IN TEXAS

It has previously been noted (Patterson 1982:18) that introduction of the bow and arrow is commonly stated to begin at approximately A.D. 500 throughout southern North America. This concept does not allow any time for diffusion into various areas of the United States. There are a number of indications that the bow and arrow was actually introduced earlier into southern North America (Patterson 1982:20). In the Texas Panhandle, Hughes and Willey (1978-185) give a date of A.D. 120 for arrow points, but Hughes (personal communication) feels that this technology is fully evolved and probably started earlier.

In southeast Texas, excavations at Site 41 HR 315 (Patterson 1980:Table 6) indicate that the bow and arrow was employed in the Archaic period with the use of crude unifacial and bifacial points, well before the start of pottery at A.D. 100 (Aten 1983:297). It has been proposed (Patterson 1982:18) that the commonly accepted time of approximately A.D. 500 to 700 for the introduction of the bow and arrow throughout southern North America instead represents the start of evolved, standardized technology for arrow point types.

ARROW POINT CHRONOLOGIES IN REGIONS ADJACENT TO SOUTH TEXAS

Black (1986:247) notes that "Prewitt (1985) argues that the Austin and Toyah phases were both introduced to central and southern Texas from the southern Plains (through north Texas) in successive waves. He supports this contention by radiocarbon assays that he believes show the Austin phase beginning in north-central Texas about A.D. 600, in central Texas by A.D. 700 and in south-central Texas by A.D. 850. Similarly, the Toyah phase was first introduced in north-central Texas around A.D. 1250, in central Texas at A.D. 1350, and south Texas by A.D. 1450."

Black (1986:254) states that "Prewitt's contention that Late Prehistoric dates (with arrow points) generally begin later in south Texas does seem to be borne out by the south Texas data". Both Prewitt (1985) and Black (1986) seem to agree that the Scallorn expanding stem arrow point and the Perdiz contracting stem arrow point in south Texas are both derived from central Texas in successive stages.

Prewitt (1985) seems to have overlooked some important data in his study of diffusion of arrow point types from north Texas to south Texas. Standardized arrow point types start at about A.D. 600 in southeast Texas (Aten 1983:306). Excavations at inland sites in this region consistently show that Perdiz is the earliest arrow point type in this region (Wheat 1953:Table 5, Patterson 1980:Table 5, Patterson and Hudgins 1985:Table 1, Shafer 1968:Table 5). The earliest Perdiz points at deeper excavation levels are found with good stratigraphic separation from Scallorn points at shallower excavation levels. It should also be noted that the Scallorn point is a common but minor arrow point type in southeast Texas compared to the Perdiz point (Patterson 1988). From a chronological and geographical basis, the possibility exists that the Perdiz point diffused from southeast Texas to both adjacent regions of central and south Texas. The Perdiz point is the earliest arrow point type at the western side of southeast Texas in Wharton County (Patterson and Hudgins 1985:Table 1), and there were probably contacts from this general location with both of the adjacent regions of south and central Texas. The diffusion route of the Perdiz point to move from southeast to south Texas is no farther than the diffusion route for the Perdiz point to move from central to south Texas.

ARROW POINT CHRONOLOGY IN SOUTH TEXAS

Figure 1 is a copy of Black's (1986:Figure 36) summary of radiocarbon dates for south Texas, with the Austin horizon associated with Scallorn points and the Toyah horizon associated with Perdiz points. While the average Austin horizon date is earlier than the average Toyah horizon date, there is a wide overlap of date ranges for both horizons in south Texas. It is suggested here that this overlap of dates for the two horizons in south Texas is meaningful. The Perdiz point could have been introduced to south Texas from southeast Texas at about the same time or slightly later than the Scallorn point was introduced to south Texas from central Texas. The Scallorn point may have been the first arrow point type in south Texas, but the Perdiz point could have been introduced to this region from southeast Texas well before the almost historic date of A.D. 1450 proposed by Prewitt (1985) for the earliest Perdiz points in south Texas.

The published literature on the prehistory of southeast Texas seems to be generally ignored in studies on the prehistory of south and central Texas. This seems to be at least somewhat due to the rather "archeocentric" (Ekholm 1964:492) attitude of the "Austin influence" that pervades the training of archaeologists in south and central Texas. The rapidly expanding literature for the archaeology of southeast Texas (Patterson 1986) is seldom considered in studies of adjacent regions to the west. To state this in a more facetious manner, San Antonio is closer to Austin than to Houston.

In considering possible diffusion patterns for arrow point types, the possibility of contacts between southeast and south Texas along the coastal plain is probably as likely as the possibility of contacts between south and central Texas. This discussion cannot be definitive with presently available data, but alternate possible diffusion patterns should be considered in future studies when more data on this subject are available.

SUMMARY

This paper has suggested southeast Texas as an alternate possible source

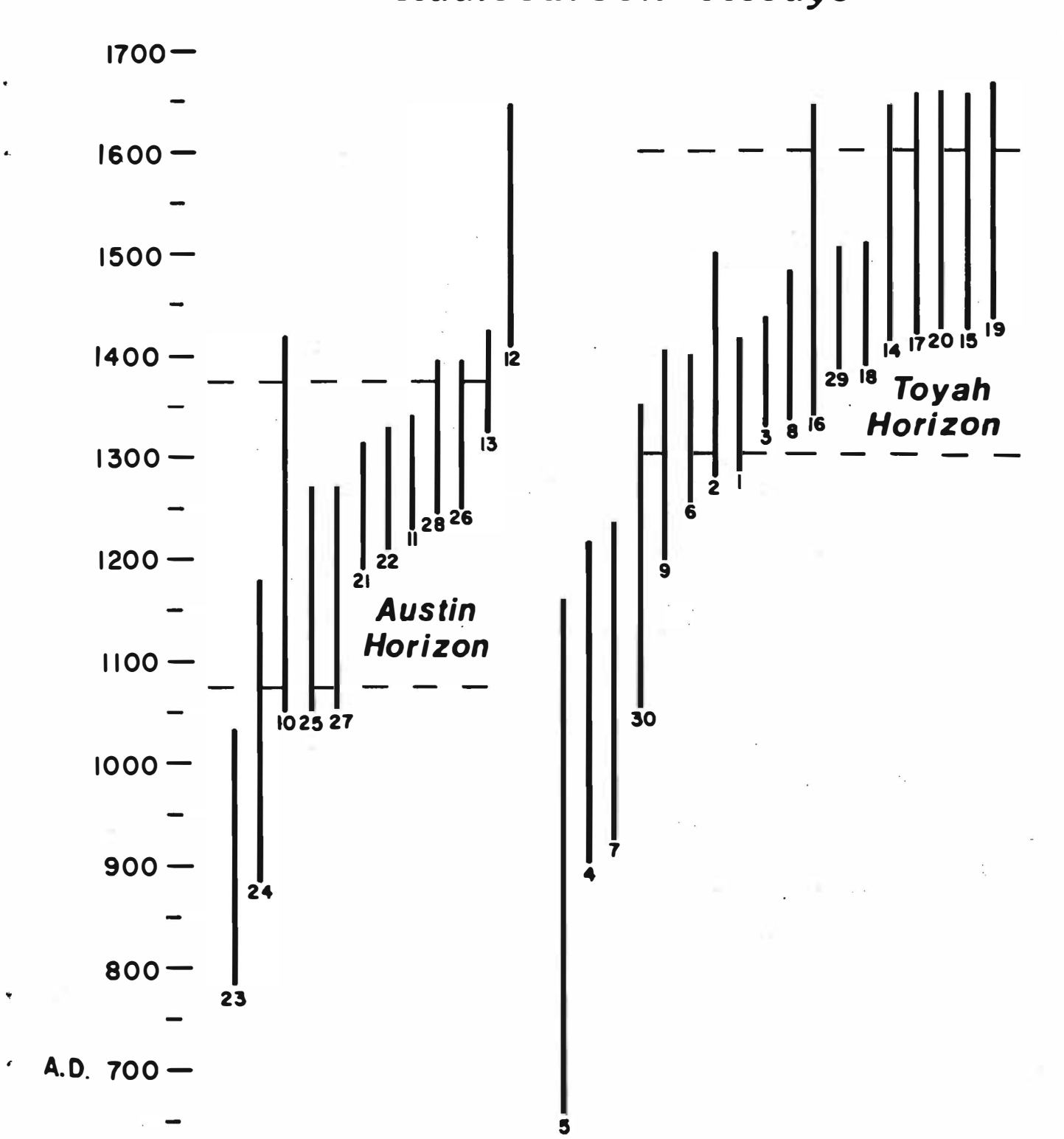


Figure 1. Radiocarbon Assays of Late Prehistoric Horizons in South Texas (from Black 1986:Figure 36).

of the earliest examples of the Perdiz point in south Texas. Southeast Texas is the earliest location for the Perdiz point in this state, about 600 years earlier than when this point type is found in central Texas. Diffusion patterns may not be uniform in time for introduction of the bow and arrow. Black (1986:250) has noted that introduction of the bow and arrow was not uniform in all subregions of south Texas. Alternate sources of introduction of the Perdiz point should be considered for south Texas to provide for balanced studies of this subject. If the Perdiz point was introduced into south Texas from southeast Texas, then the term Toyah horizon would not be appropriate for use at sites in south Texas that have Perdiz points, as the term Toyah phase would then be useful only in central Texas. Judging from Black's (1986:262-263) general discussion, the term Toyah horizon cannot definitely be applied to south Texas without more available data. It is just as likely that native south Texas Indians selectively adopted certain technologies from the adjacent regions of central and southeast Texas.

ACKNOWLEDGEMENT

Appreciation is expressed to Stephen L. Black and the Center for Archaeological Research of the University of Texas at San Antonio for permission to reproduce the data shown as Figure 1 in this article.

References

Aten, L. E.
1983 **Indians of the Upper Texas Coast.** Academic Press.

Black, S. L.
1986 The Clemente and Hermina Hinojosa Site 41 JW 8: A Toyah Horizon Campsite in Southern Texas. **The University of Texas at San Antonio, Center for Archaeological Research, Special Report** 18.

Cressman, L. S.
1977 **Prehistory of the Far West.** University of Utah Press, Salt Lake City.

Ekholm, G. F.
1964 Transpacific Contacts. In: J. D. Jennings and E. Norbeck (editors), **Prehistoric Man in the New World**, pp. 489-510. University of Chicago Press.

Hughes, J. T. and P. S. Willey
1978 Archeology at MacKenzie Reservoir. **Texas Historical Commission, Archeological Survey Report** 24.

Patterson, L. W.
1980 The Owen Site, 41 HR 315: A Long Occupation Sequence in Harris County, Texas. **Houston Archeological Society, Report** 3.

1982 Initial Employment of the Bow and Arrow in Southern North America. **La Tierra** 9(2):18-26.

1986 Bibliography of the Prehistory of the Upper Texas Coast, No. 6. **Houston Archeological Society, Special Publication.**

1988 Technological Interactions in Central and Southeast Texas. In press, in Houston Archeological Society Journal.

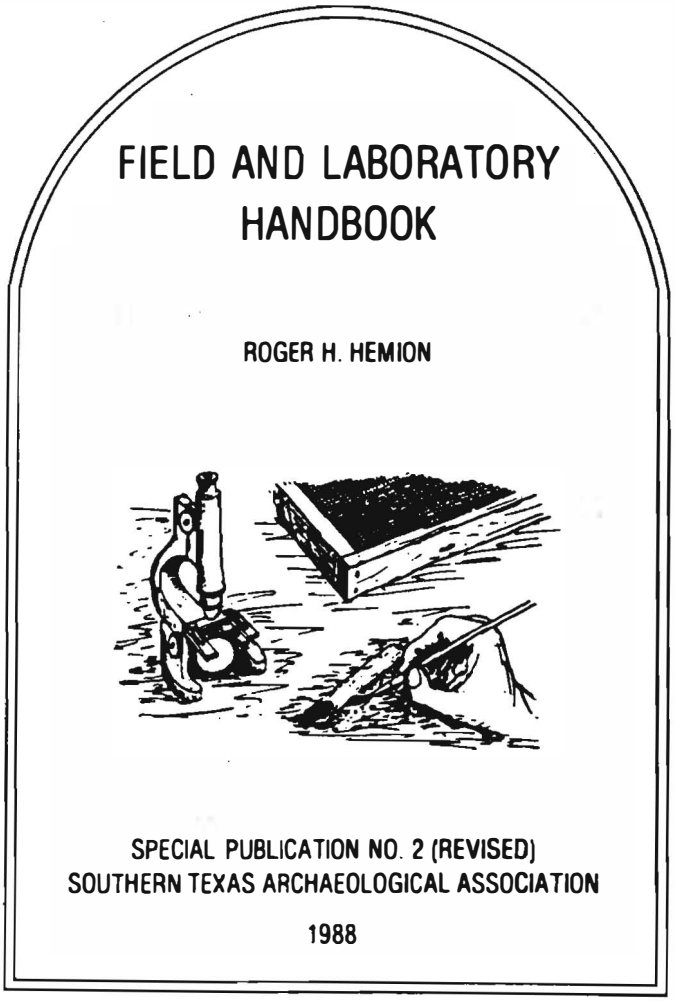
Patterson, L. W. and J. D. Hudgins
1985 Paleo-Indian Occupations in Wharton County, Texas. **Bulletin of the Texas Archeological Society** 56:155-170.

Prewitt, E. R.
1985 From Circleville to Toyah: Comments on Central Texas Chronology. **Bulletin of the Texas Archeological Society** 54:201-238.

Shafer, H. J.
1968 Archeological Investigations in the San Jacinto River Basin, Montgomery County, Texas. **Papers of the Texas Archeological Salvage Project** 13.

Wheat, J. B.
1953 The Addicks Dam Site. **Bureau of American Ethnology Bulletin** 154:143-252.

* * * * * * * * * * * * * * * *



TO ORDER: Send check made out to "STAA" and name, address (include apt. No. & zip) and number of copies desired, to: Bette Street, 1900 Kings Crown E., San Antonio, Texas 78233. Price is $3.50 to STAA members, $4.50 non-members. Please add $1.00 postage first copy, $.15 each additional copy.

A BRASS ARROW POINT FROM NUECES COUNTY, TEXAS

Jerry L. Bauman

ABSTRACT

This report documents a brass projectile that was recovered from the surface of a large Indian occupation site in Nueces County, located in the Coastal Bend area of South Texas. The metal projectile was collected by Ben Bluntzer from the surface of an Indian mound located on his property. The mound is registered as the Bluntzer Site, 41 NU 209.

THE SITE

The Bluntzer Site is located in the northern part of Nueces County within two miles of the town of San Patricio. It is a wide low mound or rise near the edge of a cultivated field. Near the site is a long shallow lake, once part of the Nueces River before changing its course. The field and site are located in the bottom of the wide Nueces River valley (Figure 1).

From surface finds, and testing of the site by the Coastal Bend Archeological Society, it seems that the site has been used for several thousand years. The earliest occupation of the site may be from the Early Archaic or possibly Late Paleo-Indian period, and was frequently used until Mexican, and later Anglo, settlers began moving into the area in the late 1700s or early 1800s. Nearby, the town of San Patricio was established, and later in 1831 Fort Lipantitlán was built farther up the creek (Kennedy and Mitchell 1988). The Bluntzer Site is located between the fort and the town, on one of the roads leading to the fort. Some of the settlers took advantage of this factor and built a blacksmith shop, plus several other buildings or houses, on top of the site. Some of these buildings survived until the early 1900s when the land was cleared, possibly for farming.

The site appears to have been used as a quarrying area. The surface is littered with large flakes, cores, tested cobbles, and broken bifaces. Apparently large cobbles were taken from the old riverbed to be processed into preforms as well as finished tool forms. The Indians possibly stayed at the site only long enough to renew their supply of chert tool forms for that season. At the present time this is the nearest stone source for this area of the Coastal Bend.

THE ARTIFACT

The brass projectile point (Figure 2) is artifact #563 of the documented surface finds from the Bluntzer Site. The projectile was cut from one millimeter sheet brass with either shears or by the hammer and chisel method. Alteration of the edges by filing and grinding has obliterated the signs of production, but the base of the projectile has been clearly cut by a chisel. So, it is most likely that this was the method used in shaping the arrow point.

Dimensions of the projectile are: length, 29 mm, maximum width, 17 mm, stem length, 17 mm, and width of the base, 3 mm. The projectile is lozenge in shape with the long end as the stem. The base has been cut on a slant. The wide blade is formed by two edges 14.5 mm long with one of the edges being filed from one face. The other edge is rounded off as though it was sharpened with a stone. Both edges of the blade are dull from either wear or a poor attempt to sharpen it with a stone.

The stem is slightly irregular; one edge is 20 mm long and the other is 18 mm long. The angle formed at one shoulder is 120° while the other shoulder has

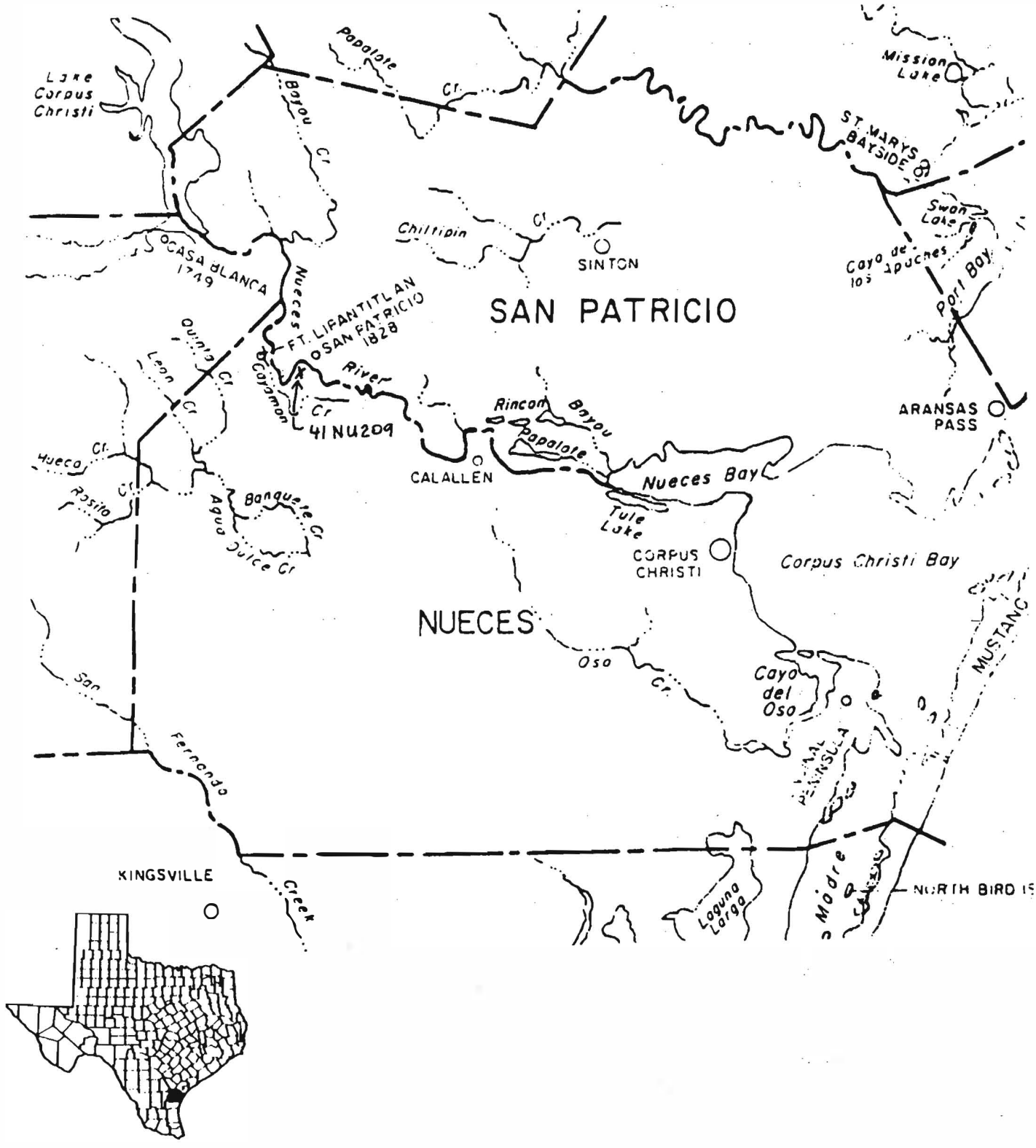


Figure 1. Map of Nueces and San Patricio Counties showing the relationship of Fort Lipantitlán and the town of San Patricio to the Bluntzer Site (41 NU 209). Map adapted from one created by Malcom Johnson, cartographer, Fredericksburg, Texas. Inset map of Texas reflects location of San Patricio and Nueces Counties in the state.

a 128° angle. Several very small notches have been hacked into the sides or edges of the stem. Three notches are present on one edge and two on the other.

The point is slightly bent, perhaps damaged through usage or from farming machinery. However, the projectile is in excellent condition. When it was found it was very corroded but was cleaned by the landowner. The projectile weighs two grams after cleaning.

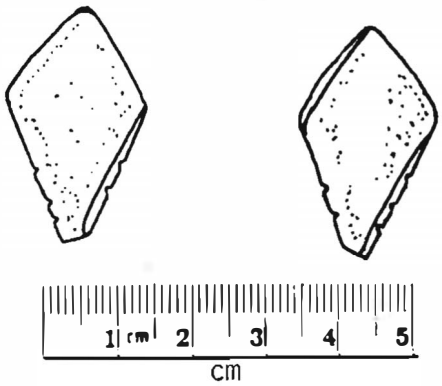


Figure 2. Brass projectile from the Bluntzer Site, 41 NU 209.

ASSOCIATED ARTIFACTS

Due to the occupation of Mexican and Anglo settlers, there are almost as many historic artifacts on the surface as there are prehistoric and historic Indian artifacts. Historic artifacts include Spanish Colonial, Mexican, and United States minted coins; Spanish, Mexican, European, and American made pottery; ceramic pipes; ceramic and glass marbles; glass, bone, shell, and metal military buttons; hand-made tools; gun parts; pocket knives; horse trappings; and various other items.

Late Prehistoric to Historic Indian artifacts consist of: Perdiz, Padre, Starr, Alba, McGloin, Fresno, Cliffton, Scallorn, and Cuney type arrow points; Tortugas, Matamoros, Abasolo, and Catán type dart points; bone beads, awls, and fishhooks; shell adzes, beads, and tinklers; end and side scrapers; Leon Plain, Rockport Plain, and Rockport Black-on-Gray pottery; prismatic blades; and a large selection of beveled and non-beveled knife forms.

Also found at the site are dart points from the Archaic to possibly Late Paleo-Indian periods. They are: Early Triangular, Desmuke, Lerma, Refugio, Pandale, Castroville, Ensor, Williams, Fairland, Travis, Bulverde, Darl, Uvalde, and Palmillas. Olmos and Clear Fork gouges are also present.

INDIAN GROUPS

By the time the Mexican and Anglo settlers began moving into this area, only two groups of Indians, Karankawas and Lipans, had either direct control of the land or had access to this area (Johnson 1987, Martin 1936). The Karankawas previously had been living in a narrow confined area between the Nueces Bay and Matagorda Bay. These Indians lived along the shores of the bays and their associated rivers and creeks. Their diet consisted of large quantities of fish and shellfish with occasional deer and various other small animals. The bow and arrow and spear were their hunting tools, and a distinctive type of pottery, Rockport Plain and Rockport Black-on-Gray, was used for cooking. The Karankawas preferred their life-style and were very slow to change it. By the middle 1700s the Karankawas began to expand their territory by moving south of

the Nueces River. By the 1800s they were thought to be as far south as Baffin Bay (Martin 1936).

The Lipan Apache were nomadic plains Indians who were accustomed to roaming over large areas, hunting the buffalo and deer. The Lipans were being pushed from the central plains into the coastal plains by more agressive Indian groups. Unlike the Karankawas they were quick to adapt to new ideas or ways to change their lives. When the settlers came into their area they easily adopted the usage of metal knives, arrow points, and other items that were offered in trade. Their old tool kit consisted of Perdiz arrow points, large beveled knives, bone awls and beads, large scrapers and gouges, and shell beads (Newcomb 1986).

DISCUSSION

Nine other metal arrow points have been found in Nueces County. Eight of these points were recently recovered from excavations at Fort Lipantitlán (Kennedy and Mitchell 1988). These projectiles were all stemmed arrow points made of iron. It seems that they were made from scrap barrel hoop material for trade with the Lipan Indians. These projectiles were being made at the Fort's blacksmith shop.

The projectile described in this report is both different in material and style, as compared to the projectiles from Fort Lipantitlán. It is most likely that this projectile is not from the fort since they already had a style that was working just fine. More than likely it was made at the blacksmith shop that was located on the site. Whether or not it was used by any Indians is uncertain. The only feature this projectile has in common with those from the fort is the series of small notches on the edges of the stem. This seems to be a common feature of any metal arrow point, or at least most of them (Chandler 1986).

The last metal arrow point found in Nueces County is from Padre Island. At the time the author looked at the point, it was still thickly encrusted with corrosion, but it was noted to be made of brass and seemed to have the same shape as the projectile in this report. Since it was not cleaned, comparison of the stem was not possible. It is very likely to be shaped the same. Whether or not these two brass projectiles came from the same blacksmith shop is questionable. There may be another forge turning out similar projectiles and the one at this site may not have made either of these two projectiles.

ACKNOWLEDGEMENTS

A special thanks to Ben and Bernice Bluntzer who loaned me this metal projectile, as well as the entire surface collection for documentation. Also, I wish to thank them for permitting the Coastal Bend Archeological Society to work on the site.

References

Chandler, C. K.
1986 Notes on A Metal Projectile Point from Bexar County, Southcentral Texas. **La Tierra** 13(3):28-31.

Johnson, Malcom L.
1987 Two Metal Points from Osage, Colorado County, Texas. **La Tierra** 14(1):36-39.

Kennedy, Skip and Jim Mitchell
1988 Metal Arrow Points from the Vicinity of Fort Lipantitlán (41 NU 54), Nueces County, Texas. **La Tierra** 15(1):26-33.

Martin, George C.
1936 **Indian Tribes of the Mission Nuestra Señora del Refugio.** Bootstraps Press. Corpus Christi.

Newcomb, Jr., W. W.
1986 **The Indians of Texas.** University of Texas Press. Austin.

* * * * * * * * * * * * * * * *

CALL FOR PAPERS

The Witte Museum plans to host an International Rock Art Conference in San Antonio, Texas on May 26-31, 1989 in conjunction with the annual meeting of the American Rock Art Research Association (ARARA). The co-sponsors of this conference - the National Park Service, the Texas Department of Parks and Wildlife, the Texas Historical Foundation, The University of Texas at Austin, the Texas Antiquities Committee and ARARA cordially invite all interested persons to attend. The call is out for those wishing to present papers covering broad-based theoretical or synthetic studies on rock art conservation, especially limestone-based pictographs, and interpretation.

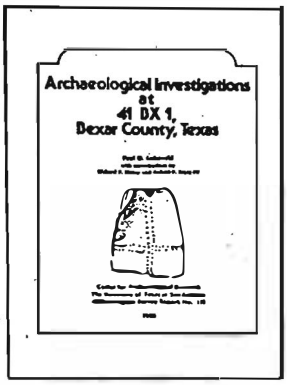
Please send completed abstracts, not exceeding 200 words, to:

Review Board
Texas Archeological Research Lab
The University of Texas at Austin
10,100 Burnet Road
Austin, Texas 78758

Attn: Dr. Solveig A. Turpin

PUBLICATIONS FROM THE
CENTER FOR ARCHAEOLOGICAL RESEARCH
THE UNIVERSITY OF TEXAS AT SAN ANTONIO

Jack D. Eaton, Acting Director



ARCHAEOLOGICAL INVESTIGATIONS AT 41 BX 1, BEXAR COUNTY, TEXAS.

By Paul D. Lukowski
with contributions by
Richard F. Shoup and Robert F. Scott IV

Archaeological Survey Report No. 135. $10.00 (+ 75¢ sales tax) + postage & handling $1.50.

****

ARCHAEOLOGICAL STUDIES FOR THE SAN ANTONIO CHANNEL IMPROVEMENT PROJECT, INCLUDING INVESTIGATIONS AT GUENTHER'S UPPER MILL (41 BX 342)

By Anne A. Fox, Lois M. Flynn, and I. Waynne Cox
with a contribution by Robert Harrison

Archaeological Survey Report No. 136. $8.00 (+ 60¢ sales tax) + postage and handling $1.50.

****

AN ARCHAEOLOGICAL AND HISTORICAL ASSESSMENT OF THE VISTA VERDE SOUTH PROJECT, SAN ANTONIO, TEXAS.

By Joseph H. Labadie

Archaeological Survey Report No. 156. $10.00 (+ 75¢ sales tax) + $1.50 postage and handling.

****

Please enclose payment with order. Make checks payable to the Center for Archaeological Research. Mail to: Center for Archaeological Research, The University of Texas at San Antonio, San Antonio, Texas 78285-0658.

AUTHORS

JERRY L. BAUMAN is a petrochemical operator for the Coastal States Refinery in Corpus Christi. He became interested in Archaeology about 1970 when he discovered an Indian burial eroding out of the side of a bluff. The find was reported to the Coastal Bend Archeological Society, and he learned how to make out site report forms and register the burial with T.A.R.L. For the past three years Jerry has been excavating and writing, as well as documenting surface collections of private collectors. As a member of C.B.A.S. he served as Vice President in 1987 and this year has been elected President of the society.

THOMAS C. KELLY, a retired Air Force Colonel, is an enthusiastic researcher in whatever project he undertakes. He was recently awarded his Master's Degree after several years as graduate student and research associate at the University of Texas at San Antonio's Center for Archaeological Research. Tom has completed field work in Texas, New Mexico, England and Belize, and has authored several papers in **La Tierra**, the **Bulletin of the Texas Archeological Society**, and the UTSA-CAR research series. His thesis research is based on Paleo-Indian lithic typology and technology, and he has been recognized for his work with the 1986 Robert F. Heizer Award. Tom and his wife live at 132 Sharon Drive, San Antonio, 78216.

JOSEPH H. LABADIE, before coming to UTSA, served five years with the U. S. Air Force. After medical retirement, he used his GI Bill and earned a BA in Anthropology. Between his BA and MA degrees, Joe made major contributions in the archaeological fields. His best known efforts center around his discovery of the La Villita Earthworks site in downtown San Antonio and excavation of an Alamo battle artillery emplacement. Other surveys include the Vista Verde South archaeological area of 31 city blocks in midtown San Antonio, and a study of a Highway Department burial site in Wilson County. Joe took a summer job assignment in 1987 with the National Park Service, surveying known, but plundered, caves and shelters. This job became permanent and he is now Park Archeologist with the NPS headquarters in Del Rio.

LELAND W. PATTERSON is Manager of Environmental Affairs/Engineering for Tenneco, Inc. He is an active avocational archaeologist, with research interests in lithic technology and the prehistory of southeastern and southcentral Texas. He has published more than 190 papers and reports and recorded over 150 prehistoric sites in Texas, Louisiana, and Ohio. He is an active member of the Houston Archeological Society as well as the Texas Archeological Society. His publications are found in the **Bulletin of the Texas Archeological Society, Plains Anthropologist, American Antiquity,** and the leading Canadian journal, as well as **La Tierra.** Lee lives in Houston.

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.

S T A A OFFICERS AND STAFF - 1988

CHAIRMAN - Paul Ward (S.A.)

VICE CHAIRMAN - Ray Smith (Uvalde)

SECRETARY - Roger Hemion (S.A.)

TREASURER - Mary Ossi (San Antonio)

LA TIERRA
Editor - Evelyn Lewis (San Antonio)
Staff Artist - Richard McReynolds (S.A.)
Columnist - Thomas R. Hester (Austin)
Production - Shirley Van der Veer (S.A.)

NEWSLETTER
Editors: Kay & Herb Allison (San Antonio)

SPECIAL PUBLICATIONS
Editor: Jimmy Mitchell (Converse)

Area Consultants

Tom Beasley (Beeville)

Bill Birmingham (Victoria)

James Garber (San Marcos)

Rita Gunter (Corpus Christi)

T. C. Hill, Jr. (Crystal City)

Malcom Johnson (Fredericksburg)

Tom Kelly (San Antonio)

Ed Mokry (Corpus Christi)

Lee Patterson (Houston)

Ray Smith (Uvalde)

Immediate Past Chairman
Tom Guderjan (San Antonio)

COMMITTEE CHAIRPERSONS

Discovery Committee
C. K. Chandler (San Antonio)
Documentation Committee
Kay Hindes (Charlotte)
Educational Programs Committee
Frances Meskill (San Antonio)
Hospitality Committee

Mailing Committee
Roger Hemion (San Antonio)
Membership Committee
Liz Smith (San Antonio)
Program Committee
Don Lewis (San Antonio)
Publicity Committee
Wilson McKinney (San Antonio)
Registration Committee
Frances Ward (San Antonio)
Social Committee
Greg Helm (San Antonio)
Mark Kuykendall (San Antonio)
Telephone Committee
Rita Neureuther (San Antonio)

Field Directors
Anne Fox (San Antonio)
Tom Kelly (San Antonio)
Joe Labadie (Comstock)
Smitty Schmiedlin (Victoria)
Ray Smith (Uvalde)
Shirley Van der Veer (S.A.)

STAA Library

Housed in Archaeology Laboratory, UTSA campus
(See Table of Contents)