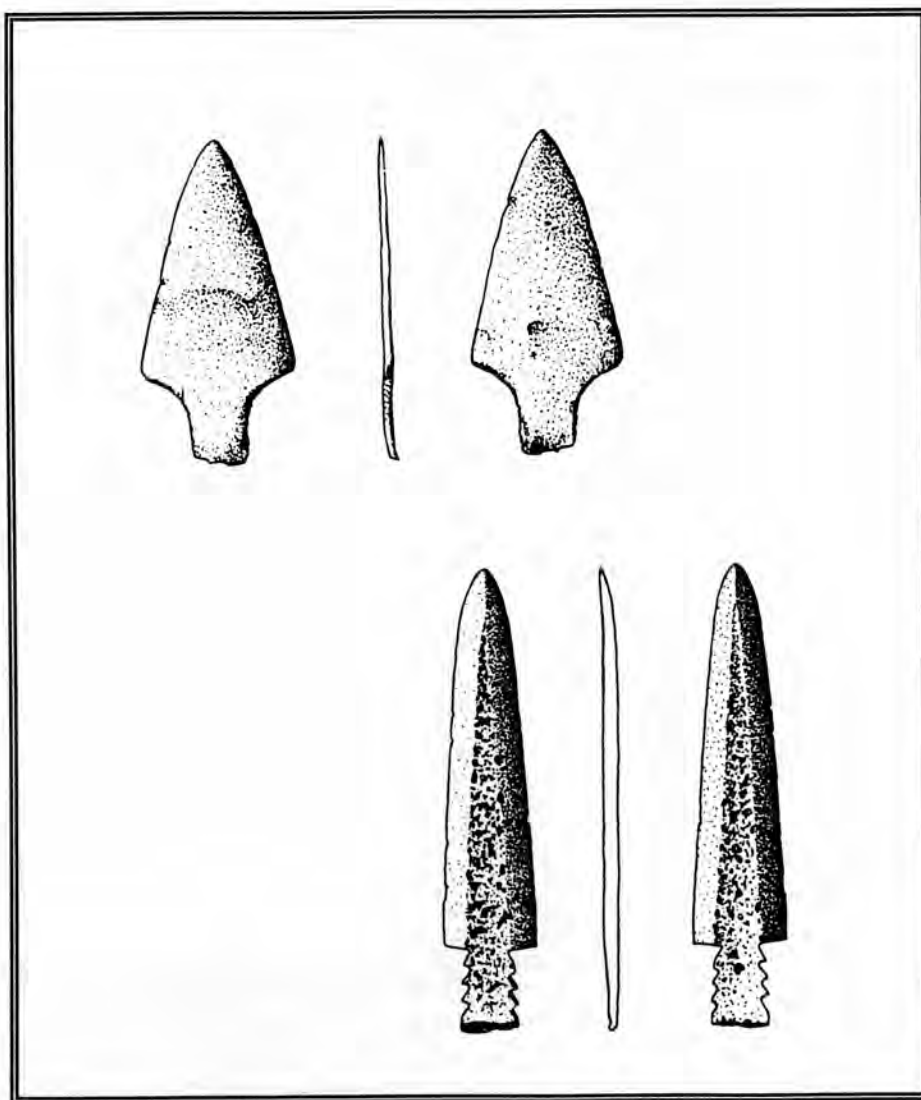


LA TIERRA



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QUARTERLY JOURNAL OF THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

Volume 24, No.4
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Evelyn Lewis
Editor

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About the Cover: Metal arrow points from Texas; see page 38 for report by C. K. Chandler and Don Kumpe. Drawings by Richard McReynolds are found on pages 12, 13, 15, 16, 17, 19, 20, 21, 39, and 43 as well as the cover.

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

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NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1997-4

Archaeological Legacies: The Significance of Notes and Photographs

Thomas R. Hester and Gail Bailey

Professional and avocational archaeologists accumulate substantial, and often vast, amounts of documents, notes, photographs, and records resulting from their fieldwork and other research. Several years ago, the Texas Archeological Society (TAS) received the archives and library of the late Alex D. Krieger, a major figure in the history of Texas archaeology. Many of Krieger's books went to libraries to be used by future researchers, while the remainder were auctioned by the TAS in its annual meetings in 1996 and 1997. These auctions brought in monies used to enhance the Society's Endowment Fund. However, Krieger's archives were assigned by the TAS to the Texas Archeological Research Laboratory (TARL). Subsequently, Gail Bailey received a grant from the TAS Donors Fund to fully catalog Dr. Krieger's extensive collection of slides. Many of these are teaching slides, but a great number are unique records of Texas archaeological sites and collections, as well as lithics and sites related to Krieger's studies of pre-Clovis cultures throughout the Americas. These archived and indexed images are now available for research. Still to be done is a full archiving of many file boxes of Krieger's notes. However, a summary of his archives during his years at the University of Texas appear in a current publication by Bailey (1997), a volume that also documents the many other kinds of records and archives held at TARL.

Bailey's research for her present publication, as well as several recent donations of archival materials to TARL, have prompted this paper. Among the recent donations are included hundreds of slides and documents from the family of the late Col. Thomas C. Kelly. While much of this deals with his work in Belize, the records are also related to collections he donated to TARL, from Texas, Belize, and England. Without such documentation, the future use of these collections for both research and teaching, would have been seriously compromised. In another example, Dr. Chris Lintz of Austin, loaned TARL his personal papers on the archaeology of the Texas Panhandle. This included much written material that TARL did not have on file. The files were photocop-

ied and returned to Dr. Lintz. Ellen Sue Turner has donated extensive sets of slides on sites 41BX228, 41BX229, the Guerrero missions, and other sites. C. K. Chandler has placed his well-documented Ellis County collections at TARL, along with supporting records. Records, photographs and notes on Falcon Reservoir sites, many of them published in *La Tierra*, have been donated by James B. Boyd. Other examples of records, collections, and other related materials are detailed in Bailey's volume, and will be updated in future publications.

We are sure that other institutions around the State have received donations of collections and records, and we are not advocating here that all such materials should come to TARL! You should, however, be sure that your archaeological legacy be placed in a facility that has a long-term commitment to such archiving. What we are advocating is that each of us carefully consider the long-term value of the records and photographs from our archaeological activities. You must take care of these records while you are using them and it is your obligation as an avocational or professional archaeologist to ensure that they are preserved after you are through with them.

In an earlier paper in this series, Hester (1991) wrote about the importance of placing archaeological collections in proper curation facilities. Thus, our focus here is on notes and records—and especially on photographs. All field notes, analysis notes, drawings, sketches, etc., should be labeled (identified) and dated. Even newspaper articles on local/regional archaeology are important (no articles on Pompeii or the Pyramids, please!). You should indicate what materials have been published and what constitutes original unpublished documentation. For relatively little expense, you can acquire archival-quality materials (acid-free paper and file folders) to better care for these records while in your possession. Write, call, or email Gail Bailey for information on these materials (512-471-5135 or 5960; glbailey@mail.utexas.edu). Five regional suppliers are: Conservator's Emporium (702-852-0404), Light Impressions (800-828-6216), University Products (800-628-

1912), Gaylord (800-448-6160), and Conservation Resources (800-634-6932).

Photographs are especially important, but are even more difficult to archive. An active researcher takes lots of prints, slides or black/white images—and it is time-consuming to label them all for future reference. But, it is critical that we do this. Try to keep color and black/white negatives also in good order. However, if you've misplaced these, the original images are just as useful, given the level of computer-scanning technology available today. Copy negatives can also be used, as these are still the long-term archival standard.

While these photographs or slides are in your possession, try to follow these rules, provided by the Institute of Texan Cultures, San Antonio and by R. David Taylor, photopreservationist in Austin (see also Wilhelm 1993):

1. Don't write in ink on the originals. You can identify your prints with pencil notations (soft pencil) made using light pressure on the back of the photo. Don't put tape or glue on them to affix labels; the same holds true for paper clips or rubber bands.
2. Don't put original photos in frames or displays (as either natural or artificial [fluorescent] light will badly damage them). Use copies of the photos for such purposes.
3. Avoid repeated handling of the photos and try to keep them in high quality photo albums (especially those of archival quality) or keep them together in labeled envelopes (acid-free examples are available).
4. Don't store your archaeological photos in the garage or attic. Try to keep them in cool, dry locales. Archives like the Institute store photographs at 65-68 degrees and 30-50 percent humidity; while that is the ideal, it is difficult to achieve at home!
5. If you've maintained notebooks or photo logs, keep these with the photographs.

Perhaps you have already violated some of these guidelines above over the years. But, this does not mean that the photographs or slides are of no value.

Try to upgrade your treatment of them if you can, but do not ever forget that they are of great importance for archaeological archives. In addition, film formats have changed a great deal over the years, and some of the negative sizes can today only be printed by custom printers (individually) at some expense. Figure 1 is a print recently made from a 1964-vintage black and white negative, 1 and 1/8" square. Figure 2 dates from 1940, is of an odd size, and was made from a nitrate negative which we have to keep frozen (we have a freezer-full from that era) to keep them from exploding! However, even these photos—whether archived as prints or with the original negatives—constitute the only record of many sites or provide details as to how a site was dug (e.g., Figure 2).

Many avocational and professionals go to the TAS or STAA field schools—and take a lot of casual pictures of crews at work or take photographs of exposed features. Perhaps it will come as no surprise that even on a carefully-organized excavation, with designated photographers, we often do not have enough photographs, or the right photographs! Film gets lost, lighting is poor when some photos are taken, or in the rush of fieldwork, some omissions occur. We would strongly urge you to donate these kinds of photographs to appropriate institutions. Right now, Hester could use extra photographs or slides from the 1997 TAS Field School, especially from 41VT129, the site excavated by Norman Flaigg. We did not take enough photographs at that site and some of them did not turn out well. If you have some, send them to TARL and we will copy them and return the originals and/or negatives to you. Of greater importance are photographs from earlier TAS field schools, the collections from most of which are housed at TARL, but are often unaccompanied by adequate photographic records.

Do not let these legacies of your archaeological endeavors slip away. What you may consider as a series of photos of people and general site views at an STAA excavation or a TAS field school will likely be an important archival addition to our long-term knowledge of that event. Photographic prints or black/white photos are valued as much (or more) than slides. We now have the technology to scan these images and to store them on CD-ROM disks for easy access. However, for long-term curation and research, the prints and the negatives are still the standard. Give a lot of thought to these matters and take action to improve your personal curation of archaeological



**Figure 1. View of Site 41VV116, Val Verde County, Texas.
[Photo by Tommy Hester, Carrizo Springs High School
Archeological Society, May 28, 1964.]**



**Figure 2. View of Site 41TV28, Steve Heffington Place, Colorado River 1940.
Photograph probably by J. Charles Kelley showing the initiation of level-stripping
excavations.**

records. Make plans, and put them in writing, as to the placement of these records in the future. If you need assistance, there are curators at most institutions

and museums. Bailey, who is the TARL Archivist, will certainly be glad to assist you with any concerns or questions.

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A CLIFFTON / PERDIZ ATELIER ON THE RIO SALADO, TAMAULIPAS, MEXICO

James Bryan Boyd

ABSTRACT

A small atelier, or workshop area, located on a terrace in a rich occupation site on the Rio Salado in northeastern Tamaulipas, Mexico is described and illustrated. The atelier is significant in that over a period of time it has yielded numerous examples of arrow points, i.e. Clifton and Perdiz. Nearly the entire range of workmanship is demonstrated in the sampling, from very crude to finely worked. The resulting stylistic sequence, and the very restricted area in which the specimens were recorded, clearly demonstrates the definitive association of the two types; i.e. that the more crude Clifton style is simply an unfinished form of the more refined Perdiz type.

THE SITE

The site where the specimens being discussed were located is in the northeastern portion of the state of Tamaulipas, Mexico on the north bank of the Rio Salado (see Figure 1), approximately 24 kilometers southwest of Zapata, Texas.

The site was informally named the Cardinal Site by the author shortly after its discovery (Boyd n.d.). It is located along both banks of a large tributary arroyo which drains into the Rio Salado. Severe erosion has occurred in almost all areas of the site, which has led to deflation of archaeological deposits.

The size of the site overall is approximately 600 meters (north to south) by 400 meters (east to west).

The site is located approximately 300 meters upstream from a low water crossing on the Rio Salado. This crossing is demarked by a sandstone ledge outcropping which would have afforded the former inhabitants of the area a convenient crossing of the river. A single mortar located in the sandstone formation was previously reported (Boyd 1996:87-90) as were two ornamental artifacts from the site (Boyd 1997:47-50).

The Cardinal Site most likely represents an occupation zone, rather than a single definitive site. It

was probably returned to on a regular basis for a number of reasons, including the low water crossing just referenced, readily available lithic resources in the immediate area (Boyd n.d.), and other environmental factors. Cultural debris in the site zone is apparent in great quantity, including very large amounts of burned [sandstone] rock, chert flakes, snail shells, mussel shells, tested cores, and some charcoal. Intact hearths are present in some portions of the site.



Figure 1. General area map. Falcon Reservoir is located near the center of the map.

THE ATELIER

The Cardinal Site has been visited about 13 times by the author since it was discovered. The majority of diagnostically recognizable artifacts recorded there, i.e. specific dart point types such as Catan, Ensor, Refugio, Matamoros, and Tortugas, indicate that the site was utilized from the Archaic period to the Late Prehistoric. Dart points were found in some numbers, distributed over the entire site area, although the density of spatial distribution was notably higher in the southeast quadrant (Boyd n.d.). Very few arrow points were recorded in the general area of the site, with a few Caracara, Perdiz, Starr, and Toyah noted. However, after a series of visits to the site, the author noted that a small terrace located in the southeast quadrant consistently yielded small numbers of the Clifton and Perdiz types. Subsequent visits yielded even more specimens as the terrace continued to erode following infrequent rainfall in the area. It soon became apparent that this very restricted area of the Cardinal Site, located approximately 300 meters north of the Rio Salado, was significantly different from the surrounding site area as far as artifactual yield was concerned. Eventually, it became evident that the terrace area referred to was an *atelier*, or workshop area, based upon the types of artifacts recorded there. These artifacts consisted almost entirely of Clifton and Perdiz arrow points. A continuous sequence of stylistic traits was noted in the specimens, which eventually led to the presumption that the atelier feature was indeed an area specifically utilized in the manufacture of Perdiz arrow points.

The atelier is located adjacent to, and immediately west of, a not often used ranch road which meanders along the periphery of a bowl-shaped area of washes centered around the tributary arroyo earlier referenced. The identified area of the feature measures approximately 10 meters in diameter, and it is located on a flat terrace which is nearly bare of vegetation (see Figure 2). A small mesquite tree is located on a small rise in the feature's southeast quadrant. On this small rise and immediately adjacent to it is where a majority of the recovered specimens were recorded. Small and colorful chert flakes are present in quantity on the terrace.

THE RECORDED ARROW POINT SPECIMENS

Altogether, 17 arrow point specimens were recorded on the atelier. Only one specimen does not conform to either the Clifton or Perdiz type. As mentioned, a majority of the specimens were recorded in proximity to a small rise in the feature's southeast quadrant. Some of the specimens, however, were observed on the surface of the terrace between this rise and a few meters to the west. There is a very slight slope toward the west, in a direction oriented toward the tributary arroyo which is approximately 150 meters to the west. All of the recorded specimens were surface finds. Some of the specimens were found lying out in the open, while others were found eroding from the terrace in various degrees of exposure.

One specimen is a proximal fragment of an unstemmed, convex-shaped base arrow point (see Figure 3A). Additionally, what appears to be the proximal end of the stem of a Perdiz arrow point was recorded on the terrace (see Figure 3B). The remaining 15 specimens are represented by Clifton and Perdiz types in various stages of manufacture (see Figure 4). Five of the specimens are definitively of the Clifton variety, while 10 appear to be Perdiz points at various stages of completion. Some of the specimens are fragmentary, but all are in complete enough condition for identification purposes. When the 15 specimens are arranged from the crudest example(s) to the finest worked, a nearly continuous sequence of Clifton to Perdiz is demonstrated. Various colors of chert are evidenced in the specimens, including tan, brown, pink, reddish, gray, white, and translucent. Table 1 provides specifications for the 15 specimens being highlighted.

The Perdiz arrow point style has been temporally placed in the Late Prehistoric period, specifically the period between 1200 A.D. and 1500 A.D. (Turner and Hester 1993:227). The Clifton type has also been dated to the Late Prehistoric period (ibid.: 208), but not as specifically dated as the Perdiz type. The occurrence of the two styles in the significantly restricted area of the atelier feature strongly, if not definitively, places the two styles contemporaneously within the temporal span of the Late Prehistoric.

Table 1. The Recovered Cliffton/Perdiz Points: Rio Salado atelier.

Specimen No.	Type	Length	Width	Thickness	Color	Notes
1	Cliffton	*	3.67 cm	0.55 cm	brown	distal break
2	Cliffton	2.75 cm	2.50 cm	0.50 cm	pink/brown	very crude
3	Cliffton	2.43 cm	2.53 cm	0.45 cm	tan	width > length
4	Cliffton	3.57 cm	3.01 cm	0.49 cm	reddish	translucent; agate?
5	Cliffton	2.83 cm	2.42 cm	0.50 cm	brown/tan	intermediate form
6	Perdiz	*	2.40 cm	0.49 cm	light brown	distal break
7	Perdiz	*	2.15 cm	0.37 cm	tan	proximal break
8	Perdiz	4.20 cm	*	0.55 cm	white	longest specimen
9	Perdiz	2.77 cm	1.24 cm	0.28 cm	pink	made on flake
10	Perdiz	*	1.71 cm	0.42 cm	light brown	distal break
11	Perdiz	3.21 cm	2.24 cm	0.45 cm	tan	unusual form
12	Perdiz	*	2.07 cm	0.33 cm	gray	serrated wings
13	Perdiz	*	2.14 cm	0.39 cm	yellow/clear	similar to #12
14	Perdiz	*	*	0.32 cm	white	translucent
15	Perdiz	3.34 cm	1.88 cm	0.40 cm	white	similar to #14

NOTE: All measurements made with *Mitutoyo* CD-6" BS digimatic caliper. Measurements converted from mm to cm. Asterisk (*) indicates specimen broken along this axis. All listed specimens were recorded on the *atelier* as described in the text.



Figure 2. Photo of the *atelier* (view east). Note the mesquite tree on the slight rise in the center background where many of the arrow points were found.



Figure 3. Macro-photograph (2X) of arrow point specimens. A, unstemmed, convex-based; B, Proximal Perdiz stem fragment).

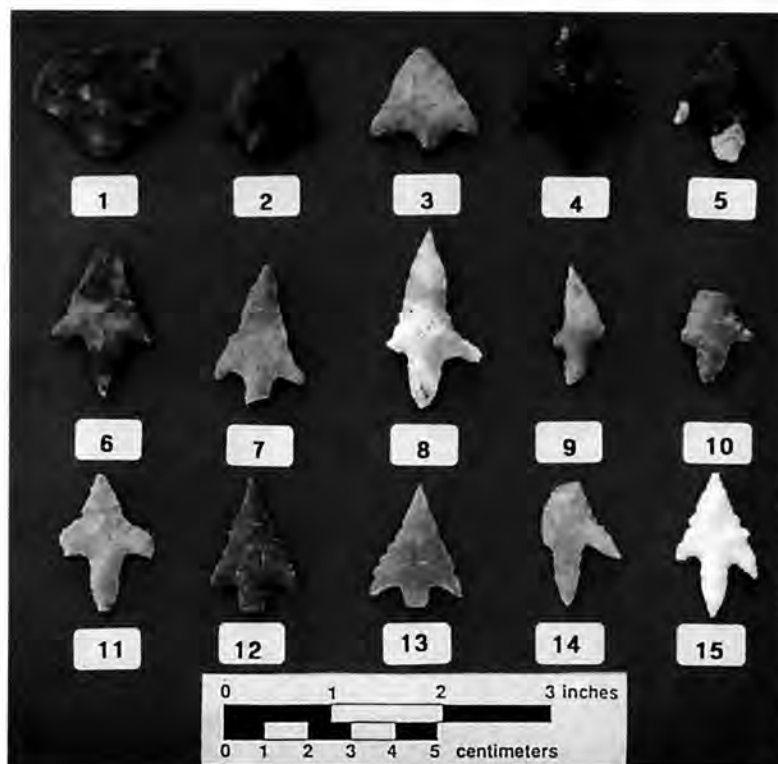


Figure 4. Photograph of 15 Cliffton and Perdiz arrow points from the atelier. Numbered specimens correspond with Table 1.

CONCLUSION

The presence of a clearly identifiable arrow point manufacturing area, i.e. the atelier feature at the Cardinal Site on the Rio Salado in Tamaulipas, Mexico, is significant for a number of reasons. Except in buried, stratified sites, the opportunity to record a significant number of arrow points in a very restricted spatial area is rare. Since the Cardinal Site is relatively remote and isolated, it has been looted somewhat less than other sites in the region. In the instance of this particular atelier, the occurrence of two identifiable types of arrow points, i.e. Cliffton and Perdiz, and the resulting stylistic transition which is clearly exhibited, demonstrates the unquestionable association between the two types. Furthermore, the presence of the atelier in a site which has predominately exhibited dart points indicates a limited occupation or usage of the site during the referenced period. Another atelier reported by the author (Boyd, 1997), located in a primarily Archaic

period site or occupation zone a few kilometers up the Rio Salado also produced examples of the Cliffton and Perdiz types. These specific concentrations of the two arrow point types in sites which are primarily older than the styles themselves is quite interesting. Further studies of such sites and the recording of other such atelier features would be of importance in the comprehensive understanding and analysis of the migratory patterns and lithic technology practices of the former aboriginal population of this very significant yet not very well understood region.

ACKNOWLEDGMENT

The author thanks Allen Hatley, formerly of McAllen, Texas for making the plane flight over the Cardinal Site (and many other sites) possible. His skill as a pilot proved to be invaluable in locating new (and assessing already known) archaeological sites. He accompanied the author on many memorable expeditions.

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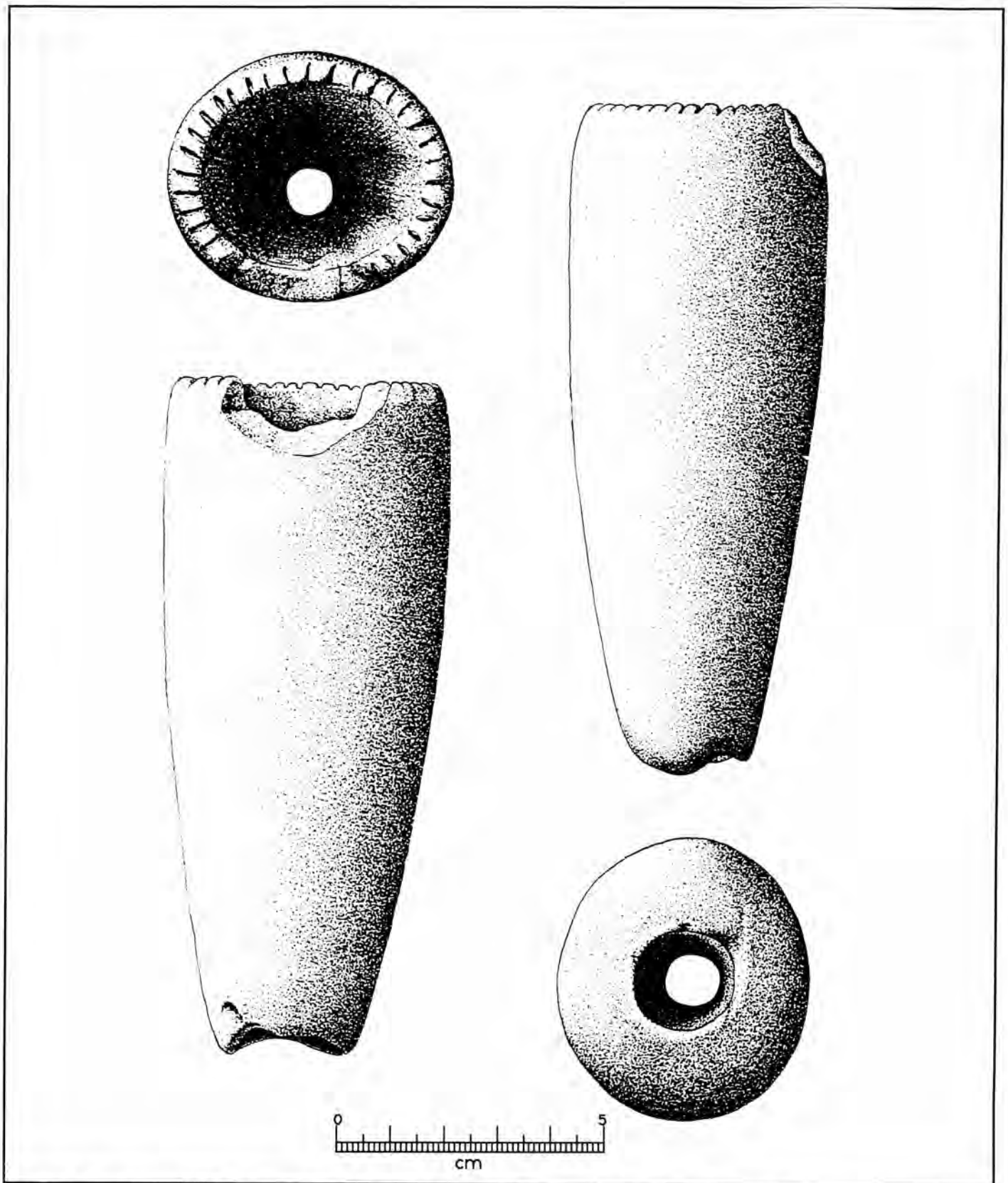


Figure 1. Specimen CM-1. Four views of a tubular stone pipe from the Lower Rio Grande.

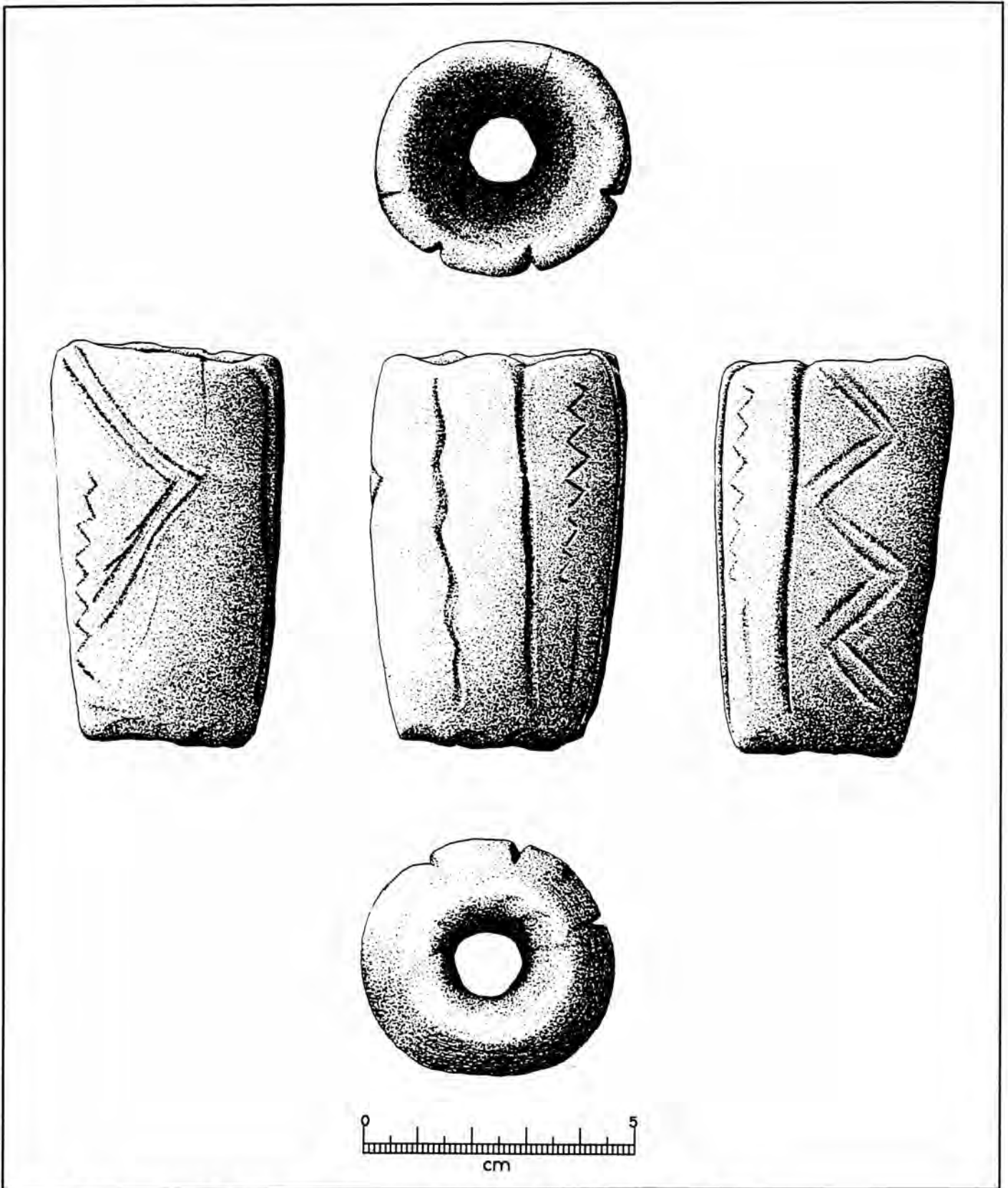


Figure 2. Specimen TB-1. Five views of a tubular stone pipe from the Lower Rio Grande.

The bowl has been gouged and reamed. Gouging left long, straight grooves full length of the bowl. Reaming has reduced the ridges between the grooves but has not totally removed them. Circumferential striations are present. The stem aperture is drilled but there is no evidence of it having been gouged.

This pipe was found August 1995 on the shore of Falcon Lake. Several sandstone abraders and one biface fragment were observed nearby.

Figure 3, A illustrates Specimen 87 with three views. It is an unfinished blank in the early stages of production for a tubular stone pipe. It is pecked and ground to an elongated cylindrical shape with a flattish oval cross section. This specimen appears to be from a long, narrow, flattish sandstone cobble. It is 120 mm in length with parallel sides 40 to 43 mm in width and 35 mm in thickness and weighs 256 grams. One end has been drilled in a cone shape 27 mm deep with a maximum diameter of 20 mm. This end appears to be the pipe stem aperture. The opposite end has been hammered and pecked to a shallow concavity and then drilled 9 mm deep. It is of light grayish-tan, medium grained sandstone with numerous tiny black specks throughout and a cluster on one side.

Figure 3, B illustrates Specimen 570 with two views. It is a nearly complete tubular stone pipe made of light gray, fine-grained sandstone that is almost totally covered inside and out with a thin coating of nearly white calciferous materials. One side is rather flat. This pipe appears to be of a naturally formed pebble that has been shaped by longitudinal abrasion.

It is 67 mm long, 44 mm in diameter and weighs 139 grams. The exterior walls are parallel.

The bowl has been gouged and reamed and is 60 mm deep and 25 mm in diameter at the rim. About one-half of the bowl is broken off 25 mm below the rim. This broken area extends an additional 16 mm down the outer surface. There are heavy circumferential striations in the bowl and the reaming has almost obliterated the vertical gouge marks. The bowl and stem are not well aligned vertically. The stem aperture is 18 mm in diameter and is 30 mm deep. It intersects and overlaps the bowl to one side. It weighs 139 grams and was found at Arroyo León in Zapata County, Texas.

Figure 4, A illustrates Specimen No. BB89 with three views. It is a nearly complete tubular stone pipe that is completely coated with a light gray calcite which obscures the color and identification of the parent material. However, there is a small chip broken out of the bowl rim that, under microscopic examination, reveals this pipe to be made of sandstone composed of very angular coarse sand grains that are reddish brown to amber in color.

It is 70 mm long with a maximum diameter of 51 mm and a minimum diameter of 46 mm. It is oval in shape and the bowl diameter is 29 mm with a depth of 43 mm. Stem aperture is 22 mm in diameter and 27 mm deep. There are prominent circumferential striations full depth of the bowl. Evidence of gouging is minimal. The stem aperture has numerous circumferential striations from drilling and no evidence of gouging. It weighs 186 grams. The bowl and stem aperture are not well aligned and overlap where they join. This specimen was found on the shore of Falcon Lake.

Figure 4, B illustrates Specimen JJS1 with three views. It is a complete tubular stone pipe made of fine-grained sandstone of tan to tannish-gray color and is ground to shape. It is slightly oval in cross section and is 92 mm in length with a diameter at the bowl rim of 42 mm and 39 mm. The bowl diameter is 31 mm and 29 mm at the rim. Bowl depth is 75 mm. It weighs 103 grams. Stem diameter is 20 mm with a depth of 16 mm. The bowl is almost totally coated with a dark brown to nearly black stain that appears to be from the pipe being smoked. The bowl walls are quite thin and have two short vertical cracks at the rim. The bowl has been gouged and reamed or scraped. The dark bowl deposit obscures any evidence of circumferential striations but vertical gouge marks are evident, though mostly smoothed. It smells of cedar smoke when strongly inhaled. This pipe was found in association with four thin triangular bifaces, 23 Tortugas and Matamoros points and 3 *Oliva sayana* shell beads.

Figure 5, A illustrates Specimen No. 288 with three views. This is a large complete tubular stone pipe made of brownish gray (Munsell 10 YR 6/2) medium grain sandstone having a thin scatter of tiny mica inclusions and a pale reddish streak of sand grains beginning just below the bowl rim and extending 34 mm down one side. This reddish streak

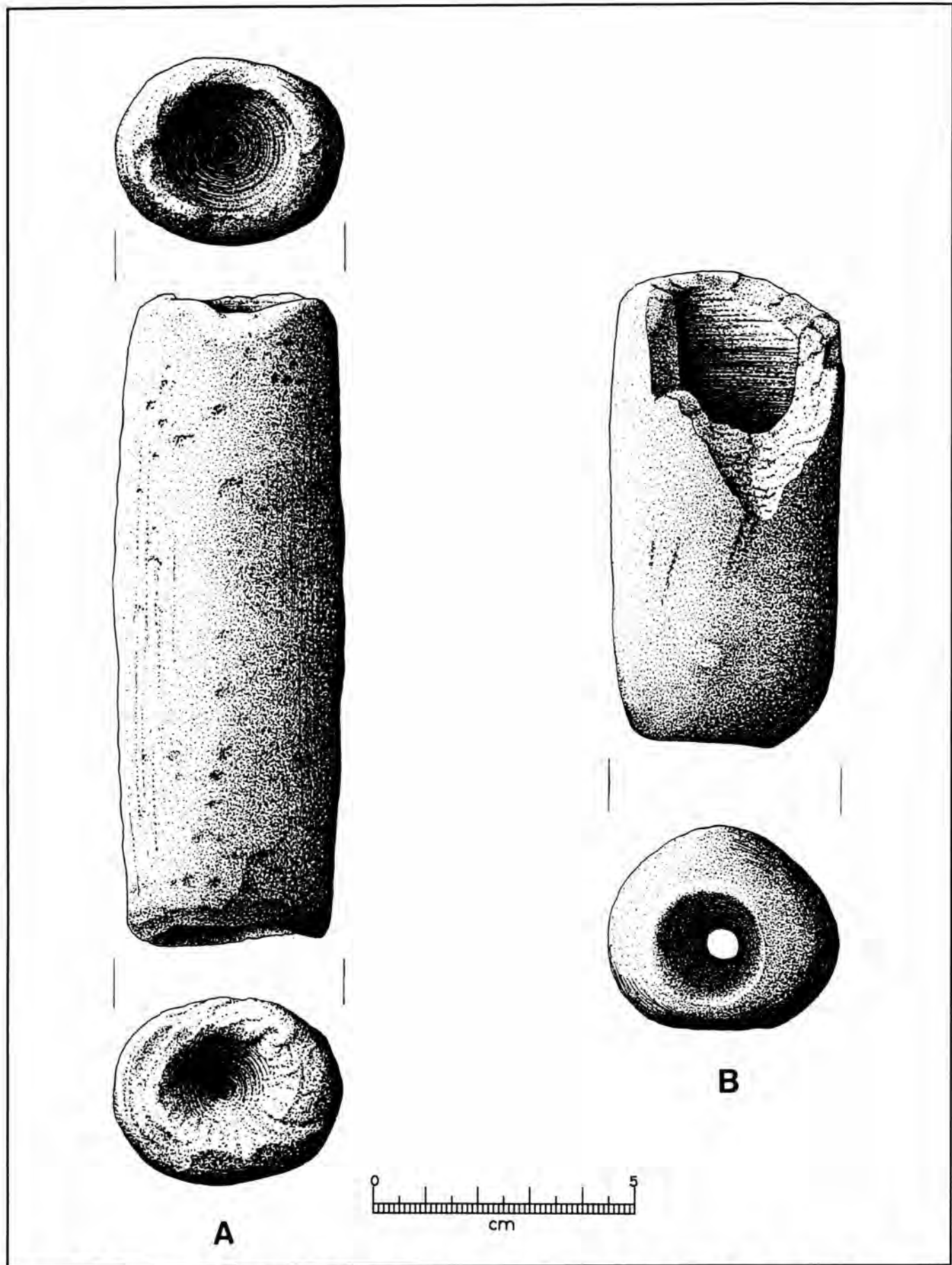


Figure 3. A, Specimen 87. Stone pipe blank from Lower Rio Grande; B, Specimen 570. Stone pipe from Lower Rio Grande.

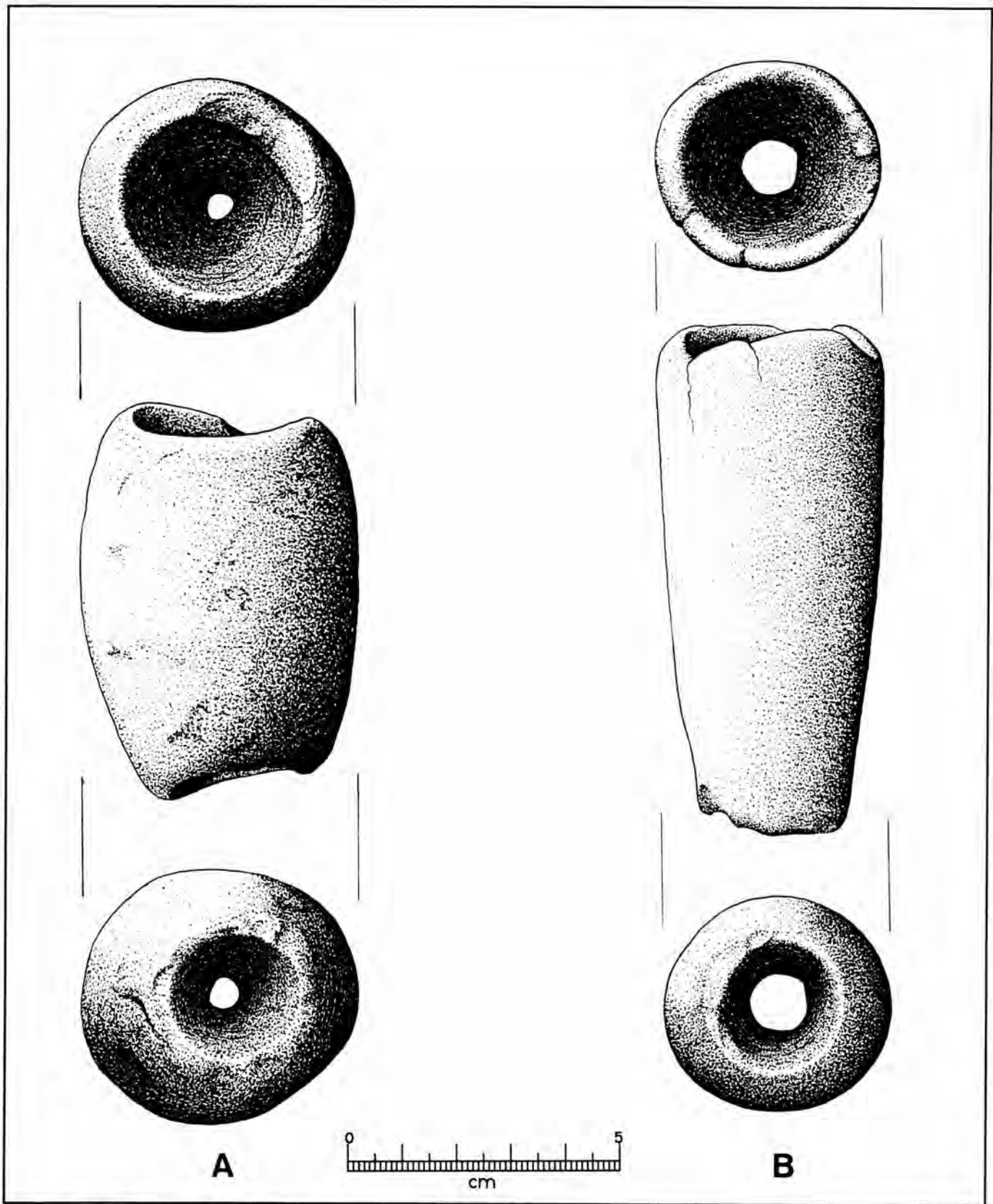


Figure 4. A, Specimen No. BB89; B, Specimen JJS-1.

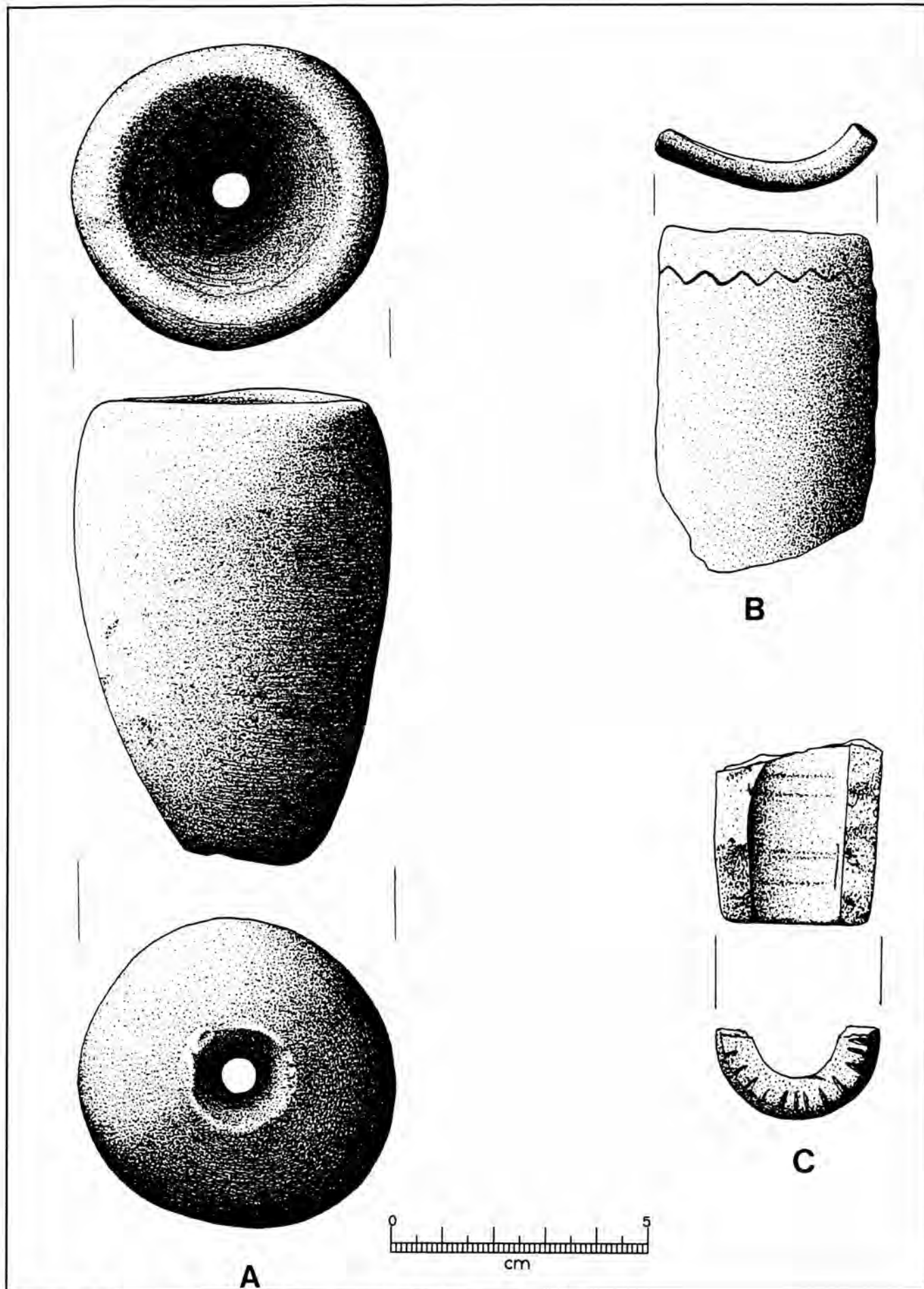


Figure 5. A, Specimen No. 288; B, Specimen CG-1; C, Specimen DC1.

is not a paint remnant. There is a thin cluster of black specks on one side just below the bowl rim and a similar scatter on the interior. At first glance these black specks appeared to possibly be inclusions of black hematite in the sandstone; however, microscopic examinations reveal they are surface deposits of tiny flat seeds of some unidentified plant.

This pipe has been pecked and abraded to a cone shape. The bowl was gouged and reamed. There are few circumferential striations in the bowl, but considerable evidence of deep gougings that have been nearly leveled and smoothed yet remain as a lightly undulating surface. There is no evidence this pipe has been smoked.

It is 96 mm in length with a maximum diameter of 61 mm at 20 mm below the rim and a diameter of 54 mm at the rim. Wall thickness at the rim is 8.0 mm. Bowl diameter at the rim is 40 mm tapering to 7 mm at 16 mm deep. The stem is drilled and has circumferential striations. It weighs 294 grams. This specimen was found on the shore of Falcon Lake.

Figure 5, B illustrates Specimen CG-1 with two views. This is a large fragment of a tubular stone pipe decorated with a single zigzag, horizontal incised line 10 mm below, and parallel to, the bowl rim. It is 68 mm long, 42.5 mm wide with a uniform thickness of 7 mm and weighs 27 grams. The bowl wall is straight and thin. The interior displays continuous vertical striations that show evidence of having been scraped to smooth and thin the bowl wall. There are no circumferential striations to indicate reaming. The complete pipe was flattish oval in cross section and is made of relatively soft, fine-grained, silty sandstone. It is uniformly whitish tan on all surfaces. This shard was found at Los Lobos Point in Zapata County, Texas.

Figure 5, C illustrates Specimen DC-1 with two views. This is a fragment of a well-made and finished tubular stone pipe with continuous edge notching around the rim that is presumed to continue full circle. This fragment appears to be one-half of the pipe bowl. It is quite smooth and shows no evidence of pecking, scraping or abrasion to shape or smooth it. There are a few circumferential striations on the interior. It is uniformly light gray in appearance with many whitish inclusions. With microscopic examination of the broken edges there are many

inclusions of whitish lumps that appear to be mica. Other tannish lumpy materials appear to be volcanic ash. There are many tiny glassy black fragments that appear as obsidian. The rest appears as a churned mixture of everything that makes up the total mix.

This material has been identified as volcanic ash from near the mouth of a volcano (J. Fallon, geologist, personal communication). This specimen was found on the shore of Falcon Lake.

Figure 6 illustrates Specimen 122 with four views. It is a nearly complete tubular stone pipe made of brown (Munsell 10 YR 5/3) medium to coarse sandstone. It is bulbous in shape and is 55 mm in length, 52 mm in diameter and weighs 120 grams. The bowl is 33 mm in diameter and 44 mm deep. Stem aperture is 14 mm in diameter and 11 mm deep. The bowl is gouged and reamed with gouge marks and circumferential striations present. Over one-half of the bowl rim is chipped, mostly to the interior. The stem aperture is drilled and is without gouge marks.

Figure 7 illustrates Specimen LP89 with four views. It is a nearly complete tubular stone pipe made of coarse grain sandstone that is rather short and bulbous in shape. Much of the rim of this specimen is broken toward the interior. The exterior is yellowish tan to yellow ocher. The bowl is reddish yellow ocher that has been drilled and scraped. It has been abraded and scraped to shape. Dimensions are 51 mm in length, 47 mm in diameter and it weighs 84 grams. The bowl is 35.6 mm in diameter and is 41 mm deep. The stem aperture is 18 mm in diameter and 10 mm deep. It was found in Zapata County, Texas.

Figure 8, A illustrates Specimen 486 with three views. This is an unusually small, complete tubular stone pipe made of fine to very fine whitish gray and green siltstone, heavily impregnated with tiny sand grains that are visible only with magnification. It is 54 mm in length, 27 mm in diameter near the bowl end and 23.2 mm at the stem end. The bowl is 21 mm at the rim and is 40 mm deep. Wall thickness is 4.6 mm. Stem aperture is 10.2 mm in diameter and 10.4 mm deep. It weighs 30 grams. There is a small crack from the bowl rim 30 mm down one side that has a row of shallow pits on each side as if there was thought of repairing it. Similar cracks in pottery

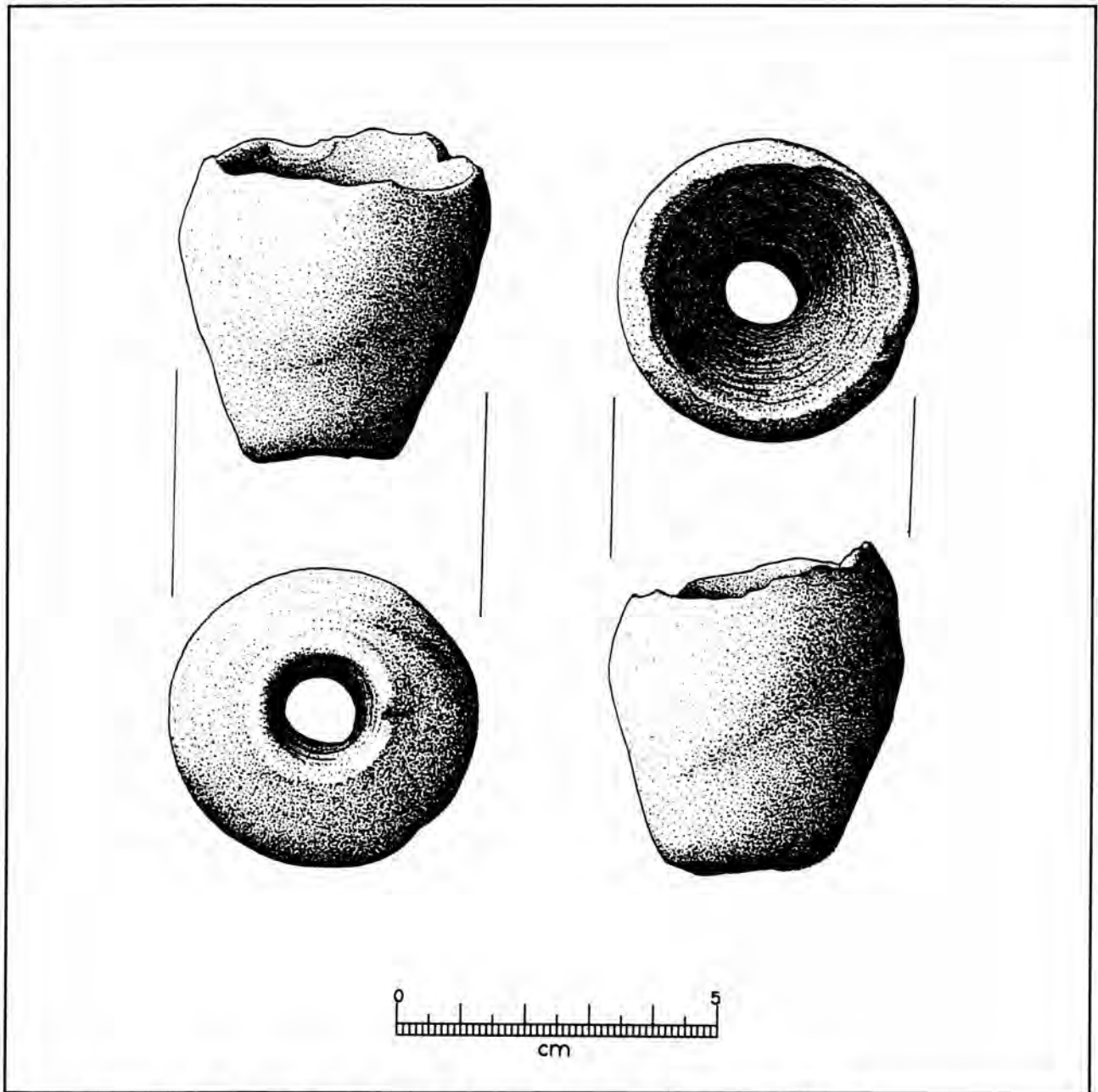


Figure 6. Specimen No. 122. Four views of a stone pipe from the Lower Rio Grande.

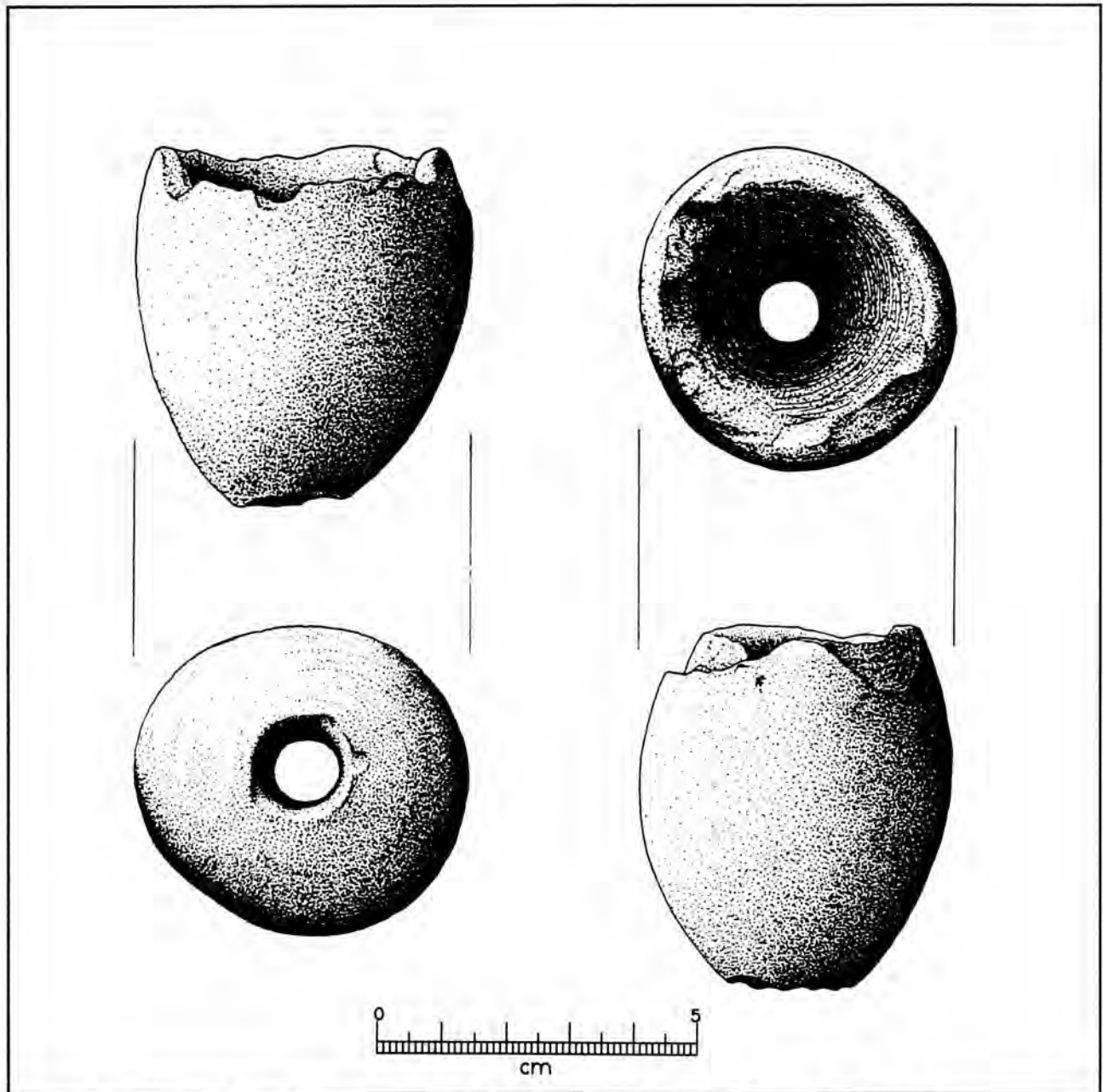


Figure 7. Specimen LP89. Four views of a tubular stone pipe from the Lower Rio Grande.

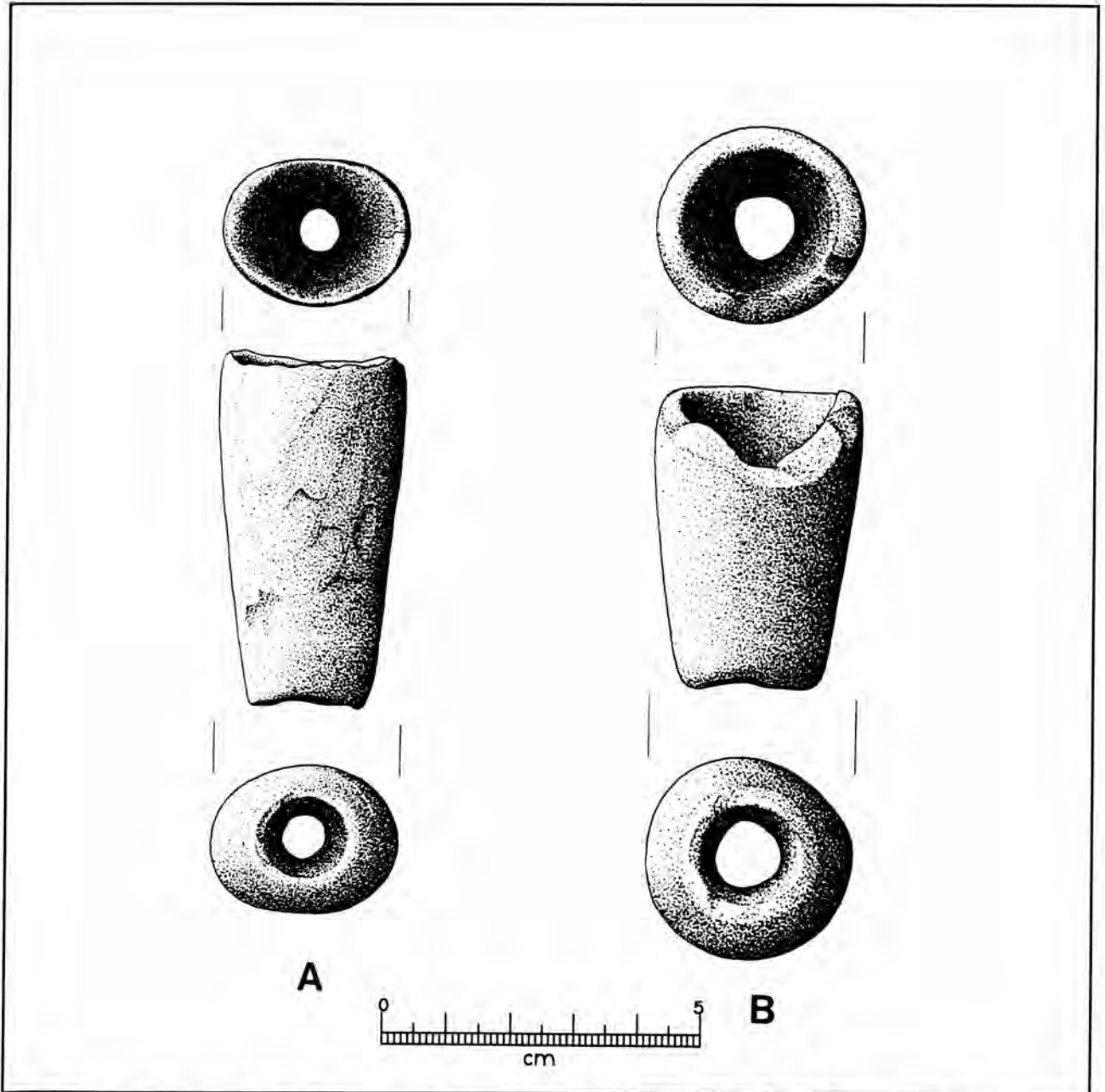


Figure 8. A, Specimen 486. Three views of a small tubular stone pipe from the Lower Rio Grande; B, Specimen 291. Three views of a small tubular stone pipe from the Lower Rio Grande.

vessels are known to have been repaired by drilling holes each side and lacing up the crack (personal observation); however, these pits may be there just for decoration.

The bowl has been drilled or reamed and has a splotchy coating of dark brown to black material that appears to be juice from smoking or burning something. The exterior is quite smooth and exhibits fine longitudinal striations from being shaped by light abrasion.

This pipe was found along the Lower Rio Grande.

Figure 8, B illustrates Specimen 291 with three views. This specimen is also an unusually small, nearly complete tubular stone pipe made of uniformly fine-grained grayish tan (Munsell 5Y 7/2) sandstone that feels lightly abrasive. This material is locally called greenstone.

Dimensions are: 46.5 mm in length, 32.7 mm in diameter and it weighs 30.8 grams. The bowl is 22 mm in diameter and has been gouged and reamed to a depth of 43.5 mm. The stem aperture is without gouge marks and shows evidence of drilling only. It is 13 mm deep and 14 mm in diameter. The exterior has been smoothed and shaped by abrasion. It was found along the shore of Falcon Lake.

Figure 9, A illustrates Specimen DC1-A with a single photograph. This specimen is a broken tubular stone pipe made of slick white pure chalk that is unlike Austin chalk, which is really limestone (J. Fallon, personal communication 1996). Most of the outer layer has flaked off but enough remains at the bowl end to identify a narrow, single groove around this end just below the rim. This fragment is 79 mm long and weighs 96.5 grams. The bowl is uniformly 16 mm in diameter and was apparently drilled to maintain this uniformity of diameter; however, there are fine longitudinal striations in the bowl.

Figure 9, B illustrates Specimen JJS-2 with a single photograph. It is a stem end fragment of a tubular stone pipe that contains a black deposit in the bottom of the bowl. It is made of sandstone composed of very angular clear quartz sand grains with many tiny black particles. It has absorbed a great deal of calcite and is whitish gray in color. There is a vertical row of five small shallow pits on one side. Present dimensions are: 60 mm in length, 40 mm in diameter and it weighs 79 grams. The

stem end is 25 mm in diameter and the stem aperture is 14 mm in diameter. It is drilled and is without evidence of gouging.

Figure 9, C illustrates Specimen DC-3 with a single photograph. It is a stem end portion of a tubular stone pipe made of reddish to dark brown to gray, medium to fine grain sandstone. The exterior has been scraped to shape as evidenced by continuous longitudinal flat overlapping striations. The bowl has been drilled or reamed. There are no gouge marks evident. Much of the bowl portion is broken away. The part remaining has prominent circumferential striations. The stem aperture is 18 mm in diameter and 14 mm deep. This is the only pipe in this group of 22 that shows evidence of external scraping to shape it, though some others have exhibited internal scraping of the bowl to thin the outer wall.

Figure 9, D illustrates Specimen DC-2 with a single photograph. This specimen is approximately one-half of a tubular stone pipe broken lengthwise. It is made of sandstone composed of coarse-grained angular sand grains of several colors, mostly clear quartz heavily sprinkled with flattish black, gray, brown and tan grains that blend together to a light grayish tan. It is 103 mm in length and weighs 134 grams. All surfaces and broken edges are eroded and little evidence remains of the manufacturing techniques. However, both the stem and bowl appear to have been drilled or reamed.

Figure 9, E illustrates Specimen No. 290 with a single photograph. This specimen is a complete large tubular stone pipe made of medium grain sandstone containing occasional tiny grains of mica and rusty red inclusions. Predominant color is light pinkish gray (Munsell 5YR 6/2). It has been pecked and abraded to shape. The bowl was gouged and reamed to the extent of removing the vertical gouge marks; however, they are evident by feel. There are no circumferential striations. Both the bowl and stem have uneven edges.

Dimensions are: 112 mm in length, 51 mm in diameter at 21 mm below the bowl rim and 43 mm in diameter at the rim. Bowl diameter is 28 mm and bowl depth is 90 mm. The stem aperture is 15 mm in diameter with a depth of 22 mm. It weighs 284 grams.



A



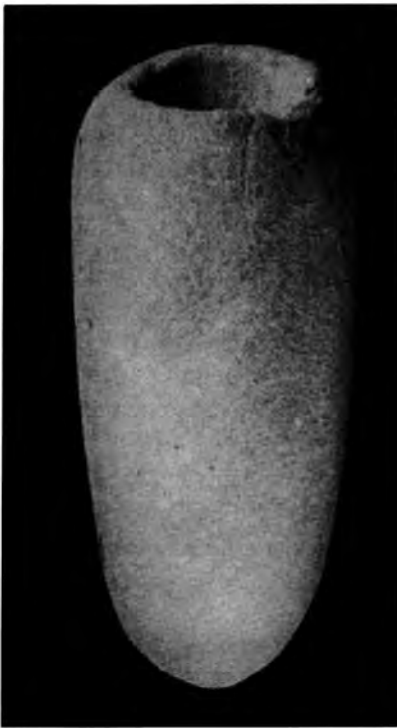
B



C



D



E



F



G

Figure 9. Seven stone pipes from the Lower Rio Grande. A, Specimen DC1-A; B, Specimen JJS-2; C, Specimen DC-3; D, Specimen DC-2; E, Specimen #290; F, Specimen TB-2; G, Specimen #289.

Figure 9. F illustrates Specimen TB-2 with a single photograph. This is a complete tubular stone pipe made of coarse-grained sandstone of several colors that blend together to present a light gray appearance. The sand grains are mostly of very angular and glassy clear quartz heavily sprinkled with flattish black, dark gray, brown and tan grains with occasional rusty inclusions. The surface of the stone is very abrasive and sharp in the order of coarse sandpaper. It sheds fine grains when handled.

This pipe is 71 mm in length with a maximum diameter of 51 mm at 16 mm below the bowl rim and it weighs 191 grams. The bowl at the rim is 27.3 mm in diameter and is 53 mm deep. The stem aperture is 21 mm in diameter and 18 mm deep. It was found on the shore of Falcon Lake.

Figure 9. G illustrates Specimen No. 289 with a single photograph. This specimen is a complete tubular stone pipe made of medium grain sandstone of several colors—light gray, mottled reddish tan and grayish pink. The exterior was pecked and ground to shape. The bowl was gouged and scraped. It does not appear to have been drilled. It is 73.3 mm in length, oval in cross section with a maximum diameter of 46 mm at 24 mm below the rim and 37 mm in diameter at 30 mm below the rim. Maximum bowl diameter at the rim is 24.6 mm with a minimum diameter of 21 mm at the rim. The stem aperture is 16 mm with a depth of 21 mm. The bowl is 52 mm deep.

This specimen was found in Arroyo Veleno in Zapata County, Texas.

Specimen No. 610 is not illustrated. It is an early stage blank for a tubular stone pipe. It has been pecked to a light cone shape and the exterior has not been smoothed by abrasion. Both ends are pecked to shallow concavities but there are no gouge marks. It is made of medium to coarse light greenish gray sandstone and has a wide streak of yellow ochre up one side. Dimensions are: 66 mm in length, 43 mm in diameter at the top and 34 mm at the bottom. It weighs 173 grams. It was found at Haynes Point (41ZP6) in Zapata County, Texas.

Specimen No. PC89 is not illustrated. This is an unfinished blank for a tubular stone pipe. Both ends have been drilled. The bowl end had some gouging prior to drilling. There is a natural hole in one side

that was exposed in the drilling of what was to be the bowl. This specimen was apparently abandoned as a result of this perforation. It was pecked to shape with some grinding. It is of very angular coarse sandstone. Color is glossy reddish brown to amber. It is 83 mm long, maximum width is 43.6 mm and it is 33 mm thick. Weight is 148 grams.

SUMMARY

This group of tubular stone pipes exhibits considerable variation in size and shape. Size varies from 46.5 to 126 mm in length and 27 to 61 mm in diameter. Cone shape is most common, followed by cylindrical, bulbous and oval. Five specimens have some form of decoration which often is notching of the bowl rim. Most are made of sandstone as is true for most stone pipes in Texas and northeastern Mexico. Other materials have been used in the manufacture of stone pipes in these areas. Pumice, limestone, soapstone and iron stone are reported as material for some South Texas pipes (Leneave 1990). An elbow pipe made of soft limestone is from Bexar County (Chandler 1995). A tubular stone pipe from Nuevo León, Mexico is of black hematite (Chandler and Kumpe 1994). Travertine is rarely used for making pipes but has been reported for one pipe in the Lower Pecos area (Chandler 1990) and one from Central Texas in Travis County (Hester 1994). Chalk and volcanic ash has also been used in the manufacture of some pipes.

Eleven tubular stone pipes and one pipe fragment were recovered at the Loma Sandia cemetery site (41LK28) in Live Oak County (Taylor and Highley 1995). All of these were of sandstone and none were decorated. These pipes were dated to the Middle Archaic period.

Tubular pipes made of clay do occur on the Lower Rio Grande (Prewitt 1974) but none made of clay have been identified to the authors of this paper.

ACKNOWLEDGMENTS

These pipes and pipe fragments were found by several individuals. Sincere appreciation is extended to them all for the loan of their specimens for study and documentation. The drawings are by Richard McReynolds and my thanks to him also.

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MIDDLE ARCHAIC ARTIFACTS FROM UPLAND SITES IN GUADALUPE COUNTY

Jack B. Howard

ABSTRACT

Some initial lithic finds along an upland terrace in Eastern Guadalupe County suggest a strong affiliation with the Middle Archaic culture of southern Texas.

INTRODUCTION

Near the eastern corner of Guadalupe County, a line of hills separates the Guadalupe Valley from the San Marcos River. The gravels and clayey-loam soils which cap these hills support extensive woods that are mainly oak, as well as smaller yaupon and occasional wild fruit trees. Small creek beds cut between the hills and gather seasonal rains, feeding streams that meander across the valley plain. The slopes here overlook a tributary of Mill Creek which joins the Guadalupe River several miles downstream. Sites along the terrace have yielded lithic artifacts indicating a long time span of intermittent occupations. A few components are presented here.

ARTIFACTS AND SITES

During the spring several dart points were found prompting further searches of the locale. An initial find was a Tortugas type dart point (Figure 1, A). The location was high on the hill in a small pasture, and searching in that area produced a distally beveled tool [DBT] (Figure 1, B), two core bifaces, and a trimmed cortex flake. The beveled tool form appears to correspond to the Group 7 specimens at Choke Canyon (Hall et al. 1982, 1986). Although this category has a variety of indistinct forms, they share a characteristic low angle bevel and "shovel" bit similar to the specimen here. The cross-section is biconvex with a slight peak along the ventral face, and the convex bit has usage marks which suggest this may be an adze. The material is a gray-beige chert which doesn't appear in this locale. Additional core material was found some distance along the ridge and may be related to this site, but no other

diagnostic items have been recovered in the site area.

Further to the south about 100 meters, and slightly downslope, an eroded path had exposed items which were indicative of quarry activities. A small area nearby in the woods yielded lithic artifacts suggestive of a flint-knapping site. Several hundred reduction flakes, small chunks of whitish fire-fractured rock, plus varied pieces of "ironized" sandstone appeared in the silty-clay soil and gravels, mainly in a 4- x 2-meter area. Three dart points were recovered at this site. The Refugio (Figure 2, A) and Abasolo (Figure 2, B) points appear similar to specimens at Loma Sandia (Taylor and Highley 1995) and in the Bromley Cooper collection (Woerner and Highley 1983; Turner and Hester 1993). Both of these points are made from a dull gray translucent, chert; they are crudely flaked and likely represent unfinished points. A lanceolate point (Figure 2, C) has a straight or slightly contracting stem and alternately retouched lateral edges. It is produced from reddish-brown chert and is worked much finer than the other points here. No identification was given to this artifact, but similar lanceolate stemmed points at Loma Sandia (Taylor & Highley 1995 Figure 235) were recovered in the Middle Archaic cemetery zone.



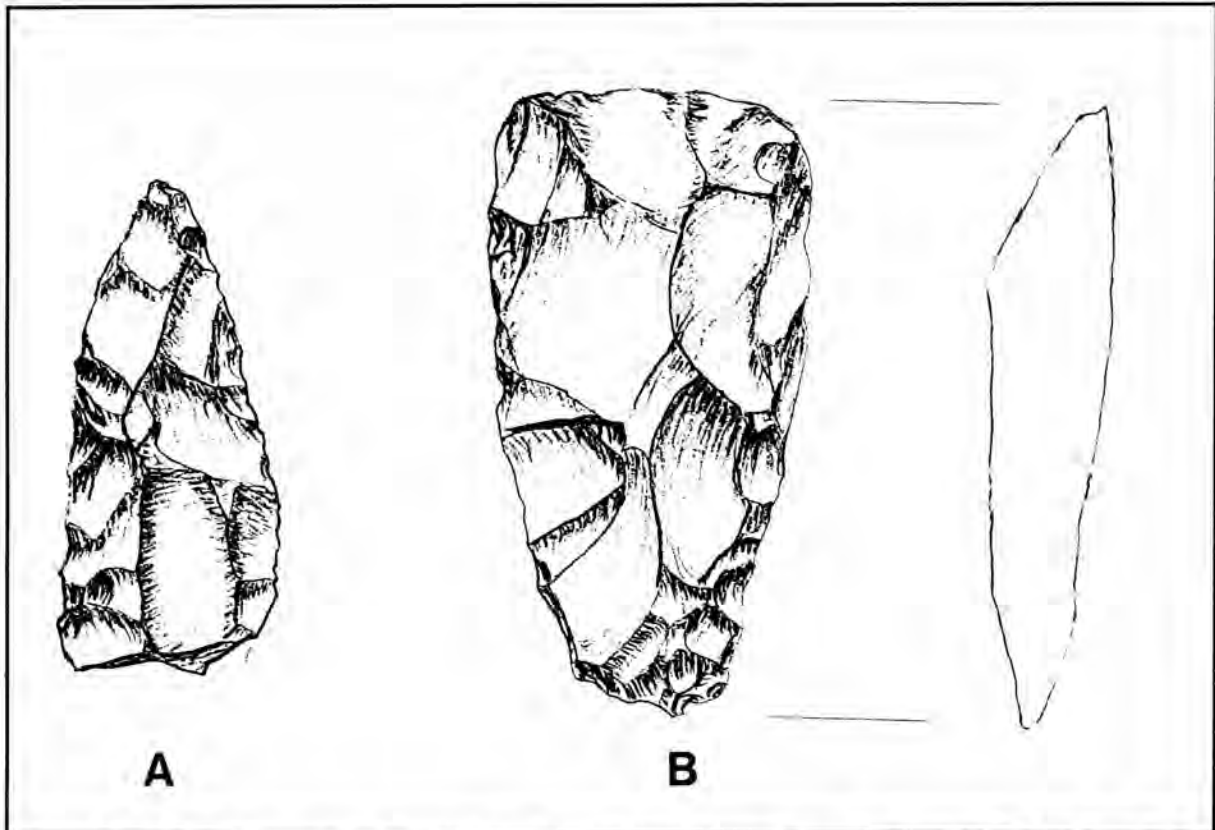


Figure 1. Artifacts from eastern Guadalupe County. A, Tortugas type dart point; B, distally beveled tool. Drawings by the author.

Other materials from this site include core bifaces, a thinned preform, trimmed flakes, and a biface fragment. In addition, two large tool forms were recovered (Figure 2, D, E). A sequent flake has been bifacially modified to create a rounded working edge, possibly for use as a scraper. Cortex remains along the proximal end. This tool was found in close proximity to the Abasolo point and a trimmed cortex flake. The other item is a modified core with beveled ends that show scars which suggest usage as a gouge. These artifacts may be early transitional tool forms that were abandoned or replaced by formalized styles. Hopefully more examples of such artifacts will be recognized and studied.

The last site is atop a southerly point that slopes down to the juncture of two creek beds that eventually drain into Mill Creek. A Lange type dart point was the only diagnostic artifact found, along with bifacially modified cortex flakes, a thick biface fragment, retouched flakes and small amounts of debitage in the general area. While the Lange type point is attributed to the late Middle Archaic and later, its ties to south-

ern Texas may be ephemeral; the evidence at Loma Sandia strongly indicates such an association at the end of the Middle Archaic period (Taylor & Highley 1995). In contrast, Lange points were only three percent of the expanding stem types of the San Marcos phase recovered at Panther Springs (Black & McGraw 1985).

COMMENTS

The last large study along the middle Guadalupe River drainage was done for the Cuero Reservoir project (which seems to be in abeyance) in Gonzales and DeWitt counties (Fox et al. 1974). The association with the Middle Archaic of southern Texas can be inferred from the numbers of Abasolo and Tortugas points recovered there, and associated DBTs were also present. It is often a given conclusion that the upland areas will yield such Archaic artifacts; however, the number of sites sampled is relatively small, and Fox mentions the bias against upland sites, especially where the study focus is on riverine

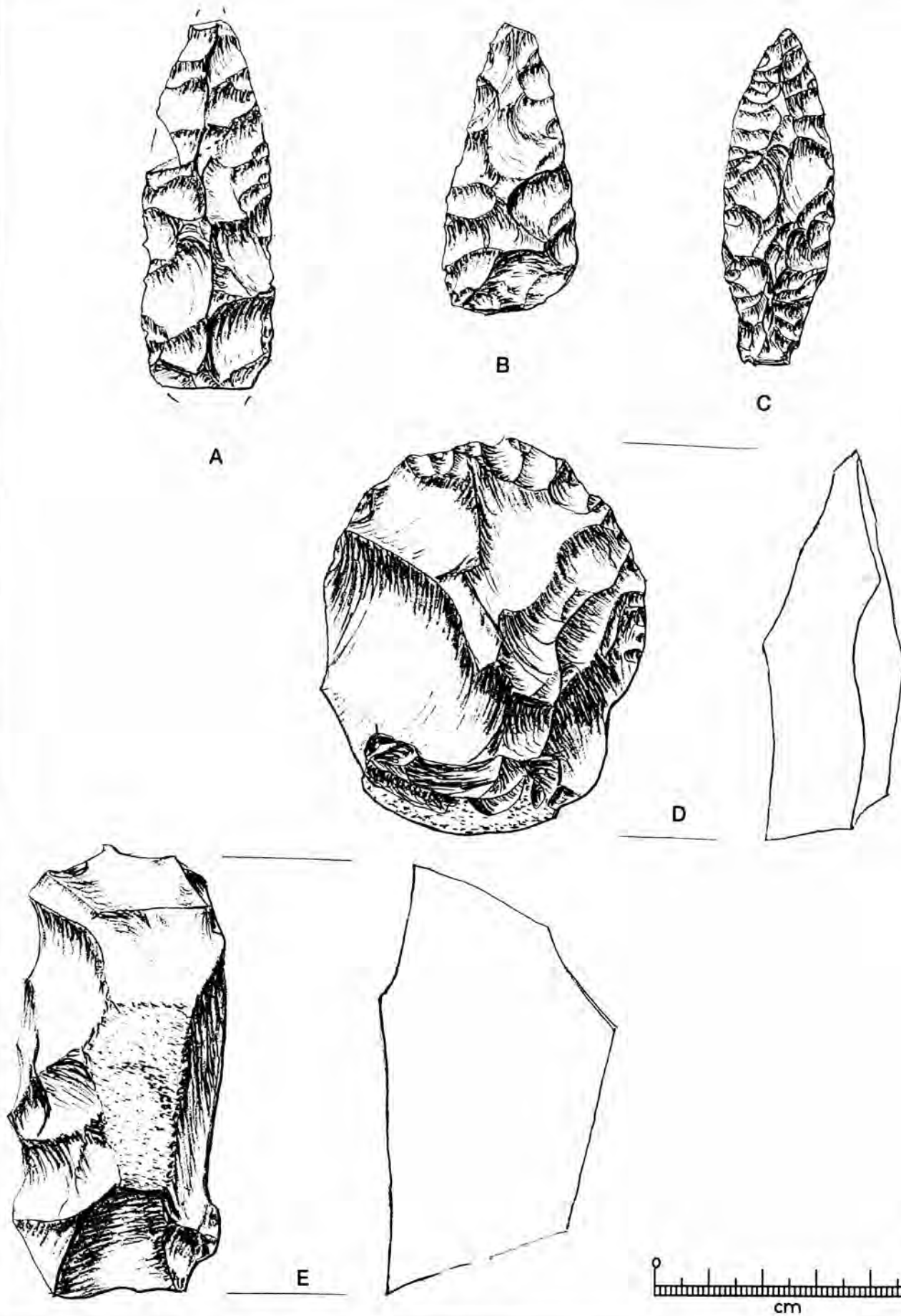


Figure 2. Artifacts from eastern Guadalupe County. A, Refugio dart point; B, Abasolo dart point; C, lanceolate dart point; D, tool form, possibly a scraper; E, modified core tool, possibly used as a gouge. Drawings by the author.

locales (this is also remarked on by Hall et al. [1986] regarding Choke Canyon). Only occasionally are these sites stratified, such as Elm Waterhole Creek (Katz 1987), with occupation features that archaeologists can study—and the low yield of artifacts doesn't help matters.

Excursions to these upland areas may have involved a limited number of natives involved in procurement and lithic production; inferences about other aboriginal activities here is problematical. Sites such as these may be comparable in some ways to the ancient Roman outposts, where small groups of people had duties far from the cultural centers. The accu-

mulation of material gives us only a hint of the larger concerns of the era. Nevertheless, it seems that the often discrete components of many upland sites could offer a further glimpse of varying cultural patterns in southern Texas.

ACKNOWLEDGMENTS

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TWO SANDSTONE ABRADING STONES FROM THE LOWER RIO GRANDE, TAMAULIPAS, MEXICO

James Bryan Boyd

ABSTRACT

Two large sandstone abrading stones collected from a previously recorded bedrock mortar and metate site, located on the lower Rio Grande in Tamaulipas, Mexico, are described and illustrated. The site is briefly described, and abrading marks located in the sandstone bedrock are also referenced. Other abrading stones salvaged in the general area of Falcon Reservoir are also described.

THE SITE

The site where the abrading stones being discussed were recovered is located in the northeastern part of the state of Tamaulipas, Mexico. It is on the lower Rio Grande, in the conservation pool area of Falcon Reservoir. The site is located in the northern portion of the reservoir, approximately 7 kilometers west-southwest of the town of Zapata, Texas (see Figure 1). This is approximately 2.4 kilometers northwest of the confluence of the Rio Salado and the Rio Grande.

The site is normally submerged in the reservoir and is visible only during low water episodes at the lake. The normal pool elevation of the reservoir is 301.2 feet above mean sea level (I.B.W.C. 1975), while the site being discussed lies between the elevations of 267 feet and 272 feet above mean sea level. Therefore the lake must be approximately 30 feet low for the site to become exposed.

The bedrock mortar and metate site lies within the vega zone as described by Nunley (1989:194-195), and within the Tertiary bedrock base of the Zapata Terrace as described by Evans (1962:39-40).

The dimensions of the site are approximately 60 meters in length and 15 meters in width. It is oriented from the north-northwest to the south-southeast, and there is an elevation differential of approximately 1.5 meters, creating a gentle slope of approximately 4 degrees toward the original river channel of the Rio Grande. The river channel itself is submerged in the reservoir.

The site was visited twice in November 1995. A survey was conducted and the location of each bedrock mortar and metate feature was recorded. Altogether, 23 mortars and 20 metate depressions were located and recorded (Boyd 1996:17-23). During the survey, numerous abrading marks were observed in the bedrock formation (see Figure 2). The specific number or position of each of these features was not recorded, but it was noted that most of these features were located in the northern portion of the site. It is in this area that the two large abrading stones being reported were salvaged.

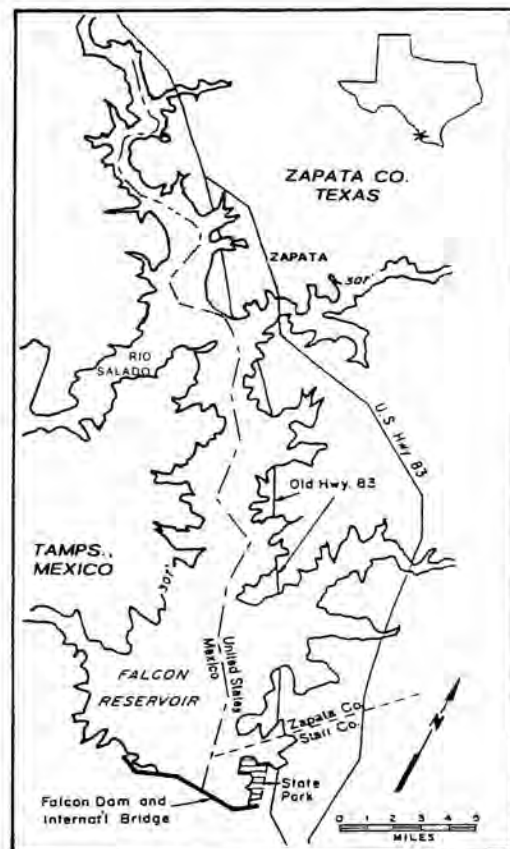


Figure 1. Falcon Lake, Lower Rio Grande, showing area where stones recovered. Note location of the Rio Salado.



Figure 2. Bedrock abrading marks.

THE ABRADING STONES

Two large abrading stones, not attached to the bedrock feature of the site, were recovered in the northeastern quadrant of the site. They were found in proximity to the ruins of the old international bridge, which originally linked the old town of Zapata, Texas with [Viejo] Guerrero, Tamaulipas. The stones were salvaged due to several factors. These include recovery for further research and eventual curation, as well as procuring the artifacts before looters removed them from the site. Artifacts such as these are popular among relic collectors, and are often used as "garden ornaments," etc.

The abrading stones are made from a light brown-colored sandstone which is similar to the sandstone bedrock which comprises a large portion of the site. At least one other "portable" abrading stone was observed in proximity to the two salvaged specimens, but was not salvaged due to weight constraints.

The larger [recovered] specimen measures approximately 13 inches (33 cm) in length, 10.50 inches (26.7 cm) in width, and 4.75 inches (12 cm) in thickness. This specimen is illustrated in Figure 3. It weighs 20 pounds 14 ounces (9.47 kilograms). This artifact exhibits several deep, parallel abrading marks across one face. Altogether there are 7 distinctive abrading marks visible. The longest such mark measures 8.50 inches (21.6 cm) in length, and measures 1.47 inches (3.7 cm) in depth. The walls of this mark, which measure about 0.41 inches (1 cm) in width near the bottom, exhibit fine, parallel scratch marks along its length. The opposite face of the artifact is unaltered.

The smaller specimen measures approximately 11 inches (27.9 cm) in length, 10.50 inches (26.7 cm) in width, and 3.50 inches (8.9 cm) in thickness. The specimen is illustrated in Figure 4. It weighs 12 pounds 15 ounces (5.87 kilograms). This artifact also exhibits several parallel abrading marks on one face. There are a total of four such marks. The longest mark measures 8 inches (20.3 cm) in length, 0.50 inches (1.3 cm) in width at the widest point, and is 0.47 inches (1.2 cm) in depth.

The profile of the deeper abrading marks is rounded in appearance, suggestive of their formation by rubbing or smoothing wood "shafts" on the stone. This is especially apparent in the deepest abrading mark on the larger of the two salvaged specimens (see Figure 3). It is undetermined whether the marks were made during the process of smoothing arrow or dart shafts. As earlier mentioned, the surrounding Tertiary bedrock exhibits numerous mortars and metates, as well as numerous abrading marks in the bedrock itself. Diagnostic artifacts are absent in the site. However, there are numerous occupation sites in immediate proximity to the site under discussion, but projectile point types collected in those sites indicate a nearly continuous occupation from the Paleoindian period to the Late Prehistoric period. Thus attempting to ascribe the abrading marks to a specific temporal period would be futile.

The abrading stones being reported are much larger than the average-sized sandstone abrading stones normally found in the region (Boyd n.d.). Most abrading stones, or "shaft-straighteners," can usually be held comfortably in one hand. These smaller stones may have been rubbed back and forth over wooden shafts, while it is certain that the two large abrading stones being discussed had



Figure 3. Abrading marks, larger recovered specimen.



Figure 4. Abrading marks, smaller recovered specimen.

wooden shafts rubbed against them while they were in situ.

Abrading marks similar to those present in the sandstone bedrock of the site were also recorded in site 41ZP8, located on the U.S. side of Falcon Reservoir, approximately 2.4 kilometers to the southeast. The abrading marks at 41ZP8 were recorded by the author in April 1996. They are located in the sandstone bedrock in the upper elevations of the site, as well as in large sandstone boulders. They appear to represent a specific "workshop" area, and are located in proximity to a small rockshelter.

CONCLUSION

The presence of the sandstone abrading stones, in addition to numerous abrading marks located in the sandstone bedrock of the site, indicate that some type of smoothing or abrading of implements, presumably wooden shafts of some sort, was performed in this site at some undetermined time in the past. Other features in the site, e.g., mortars and metates, indicate that processing of plants was an important

activity in the site. If the abrading marks are indicative of the specified activity, i.e., smoothing arrow or dart shafts, it appears that the plant processing at the site was supplemented by hunting and gathering activities, provided that the features are contemporaneous with one another.

Although specific dating of the artifacts is not possible, other sites in the Falcon Reservoir area which have yielded significant numbers of abrading stones have also yielded numerous arrow points dating from the Late Prehistoric period (Boyd n.d.). It can therefore be inferred from circumstantial evidence that the abrading stones being reported may date from that time period as well.

ACKNOWLEDGMENTS

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ERRATA, *La Tierra*, Vol. 24, No. 3, p. 40: Please change "Figure 2B" to "Figure 2C" and Figure 2C" to "Figure 2B" as the text does not correspond to the illustration. Apologies to Mr. Boyd.

PIGMENT CAKES FROM THE LOWER PECOS RIVER REGION, TEXAS

Solveig A. Turpin

ABSTRACT

Two large cakes of processed pigment were exhumed from a dry rockshelter, 41VV68, in the Lower Pecos region, probably in the 1950s, and kept by their collector for almost 40 years. One is a flattened round of reddish-orange hue, weighing around two pounds. The slightly larger football-shaped specimen is plum red in color and rougher in surface texture. The labor expended in procuring, processing, and curating these large pigment cakes underscores the importance of paint and painting in a region known for its elaborate rock art, painted pebbles, and general proclivity for ornamentation.

INTRODUCTION

Many years ago, probably in the 1950s, a Comstock collector recovered two large lumps of processed pigment from 41VV68, a dry rockshelter near the Pecos River, a few miles north of its confluence with the Rio Grande (Figure 1). Before his death a few years ago, he gave the lumps to a friend who, in 1997, donated them to the Rock Art Foundation, Inc. which in turn loaned them to this author. When this site was recorded by Graham and Davis (1958), on the advice of W. E. (Ed) McCarson, they commented on the deep rich dry deposits and recommended excavation. When I visited the site in 1990, the deposits appeared thoroughly tumbled although the possibility that some intact strata remain at depth could not be ruled out. Unlike many of the rockshelters in the vicinity, 41VV68 bore no traces of the elaborate polychrome pictographs that would have required the production of different color pigments. However, several painted pebbles were noted and the site is noteworthy for an exceptional number of bedrock mortar holes, the latter perhaps used to prepare the pigments stored in the form of these large cakes.

DESCRIPTION OF THE PIGMENT CAKES

Now dehydrated and aged, both cakes are rock-hard but granules of pure pigment detach with great

ease. The smaller of the two cakes is round with an average diameter of 13 cm and a maximum thickness of 5 cm (Figure 2A). It weighs approximately 2 lbs. The color is now a reddish orange, valued at 10R6/6 (Rock-Color Chart 1984), but some oxidation of the outer surface may have taken place over time. A dozen or so small holes on one of the flattened surfaces were either punched by a small sharp implement, the size of a toothpick, or were formed by air bubbles escaping when the cake was in a more plastic form.

The larger lump is shaped like a flattened football, with maximum dimensions of 15.5 cm long, 11 cm wide, and 7.8 cm thick (Figure 2B). Its surface is more irregular and it is slightly heavier, weighing 2.3 lbs. Its deep rich plum coloring is midway between the categories Moderate Red (5R4/6) and Dusky Red (5R3/4) on the Geological Society of America Rock-Color Chart (1984).

Although their provenience is vague, both lumps are marked with the site number VV68 and catalog numbers 469 and 465. In 1958, Epstein copied a catalog of artifacts removed from the site and retained by the members of the Val Verde County Archeological Association that lists artifacts 465 and 469 as manos (?) of uncertain horizontal provenience but between 1 and 2 feet deep (TARL site files). These artifacts are most assuredly the two pigment cakes.

IMPLICATIONS OF PROCESSED PIGMENT

Hyman et al. (1996) recently analyzed the chemical composition of two similar pigment cakes, a red one from 41VV216, Zopilote Cave (Nunley et al. 1965:89), and a yellow one from 41VV74, Fate Bell Shelter (Pearce and Jackson 1933: Plate XI; Jackson 1938:456-457; Kirkland and Newcomb 1967:42), both in Seminole Canyon only a few miles south of 41VV68. In both, the colors are derived from the strong presence of iron with admixtures of calcite and quartz. Similar testing of locally available limonite (yellow) pebbles demonstrated that substantial physical enrichment would have been needed to produce

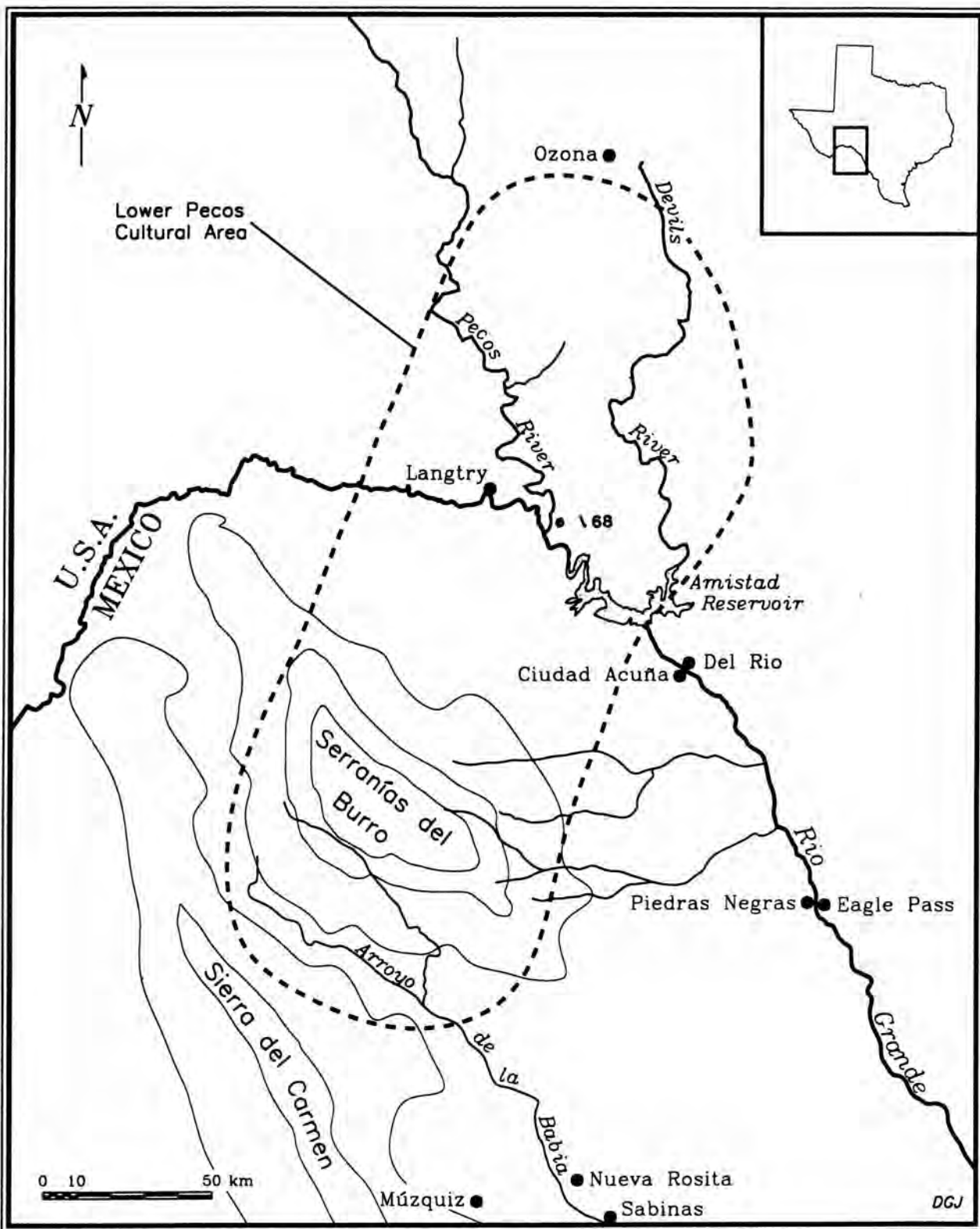


Figure 1. Map of the Lower Pecos cultural area and the general location of 41VV68.

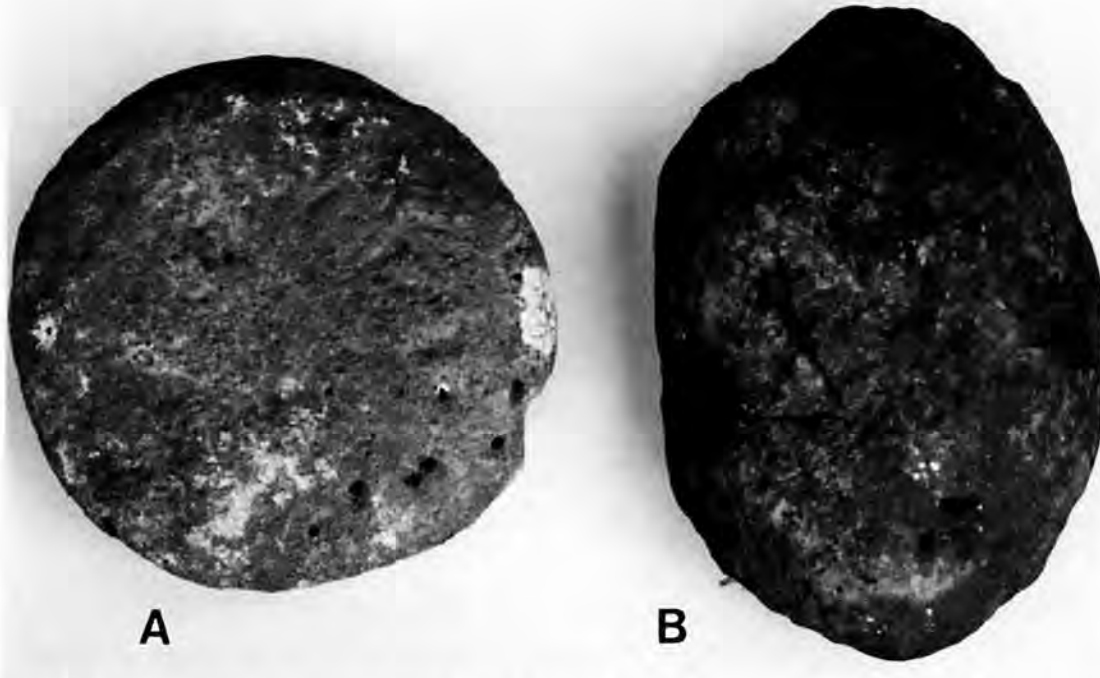


Figure 2. Two pigment cakes from 41VV68, Lower Pecos. A, orange red, 13 cm in diameter; B, plum red, 15.5 cm long.

the level of iron-bearing minerals found in the pigment lumps. French researchers have demonstrated that the technology needed to enhance pigment production from clay sediments was available to Paleolithic artists so it can be assumed that similar methods could have been employed by the Lower Pecos people (Hyman et al. 1996). Historic Native Americans, for example, heated iron-rich pebbles to extract red pigment, the favorite color in the Pecos River region as well (Smith 1949).

Considerable effort must have been devoted to gathering, processing, and storing pigment for future use, illustrating the concept of delayed rather than immediate return. Such an expenditure is consistent with the singular importance of paint and painting in the Lower Pecos region, demonstrated by the archaeological evidence for body painting or tattooing, elaborate pictograph panels, and painted pebbles, as well

as a number of other decorative media (Turpin 1996). Such activities defy the economic, adaptional, or functionalist models that measure energy expenditure by materialist standards, such as caloric rewards or reproductive success. Rather, they reify the importance of the aesthetic, religious, or ritual spheres of Lower Pecos lifeways by demonstrating the planning and anticipation that went into the production of pigment that was used for non-utilitarian purposes, including both ritual activities and ornamentation.

ACKNOWLEDGMENTS

The anonymous donor and Jim Zintgraff of the Rock Art Foundation, Inc. deserve credit for drawing my attention to these artifacts and obtaining them for study. Carole Medlar drew the original base map used here.

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METAL ARROW POINTS FROM SOUTH TEXAS AND TAMAULIPAS, MEXICO

C. K. Chandler and Don Kumpe

ABSTRACT

Four metal arrow points from South Texas and Tamaulipas, Mexico are documented and illustrated. One is from Atascosa County, one from Uvalde County and two are from the Tamaulipas side of the lower Rio Grande.

The two from Tamaulipas may have been associated with the indigenous Carrizo Indians who occupied this area when the first Spanish settlements were established in this region of the Rio Grande (Berlandier 1969).

INTRODUCTION

Many of the metal arrow points previously reported from southern Texas and adjacent areas are from historic mission sites (Mounger 1959; Schuetz 1969; Mitchell 1980) and a number have been reported from prehistoric Indian sites with early historic components (Chandler 1986; Mitchell 1974; McReynolds 1982; Smith 1984; Mitchell and Highley 1982).

THE ARTIFACTS

Specimen 1, Figure 1, A, A' is an iron arrow point made of thin flat iron heavily coated with rust over all surfaces. The blade is triangular with basically straight edges to the convex distal tip. The blade edges are ground to a shallow bevel from one face only. The stem is rectangular and is wider than usual for a metal arrow point. Both stem edges have notchings but they can not be accurately counted due to the heavy rust buildup.

The specimen is 44 mm in length, 19 mm wide at the shoulders and is uniformly 2 mm thick. It weighs 3.7 grams. The stem is 11.5 mm wide and 12.3 mm long. This point is a surface find from the west side of the Rio Alamo in Tamaulipas, Mexico.

Specimen 2, Figure 1, B, B' is an iron arrow point from near the town of Mier in Tamaulipas, Mexico. It is rusted over all surfaces with some heavy rust

pitting. The stem is bent at 17 degrees to the blade and there are minute cracks in the bend where rust has flaked off. This bend appears to have occurred in recent times since the artifact became rust coated. Blade edges are straight and rounded without noticeable bevels. Stem edges are straight and near parallel and are without notches which are common in a high percentage of metal points. Shoulders are prominent and are curved where the stem and blade join. It appears to have been cut with a chisel out of thin sheet metal like a barrel hoop, but may have been cut out with metal shears. It is 44 mm long with a maximum width across the shoulders of 20 mm. Stem length is 19 mm and stem width is 7 mm. Thickness is 1 mm.

The specimen was found on the surface of a badly eroded prehistoric Indian site on the east bank of Rio Alamo about two miles south of Mier, Tamaulipas, Mexico.



South Texas county map showing counties referred to in text. Mier and Reynosa are in Tamaulipas, Mexico.

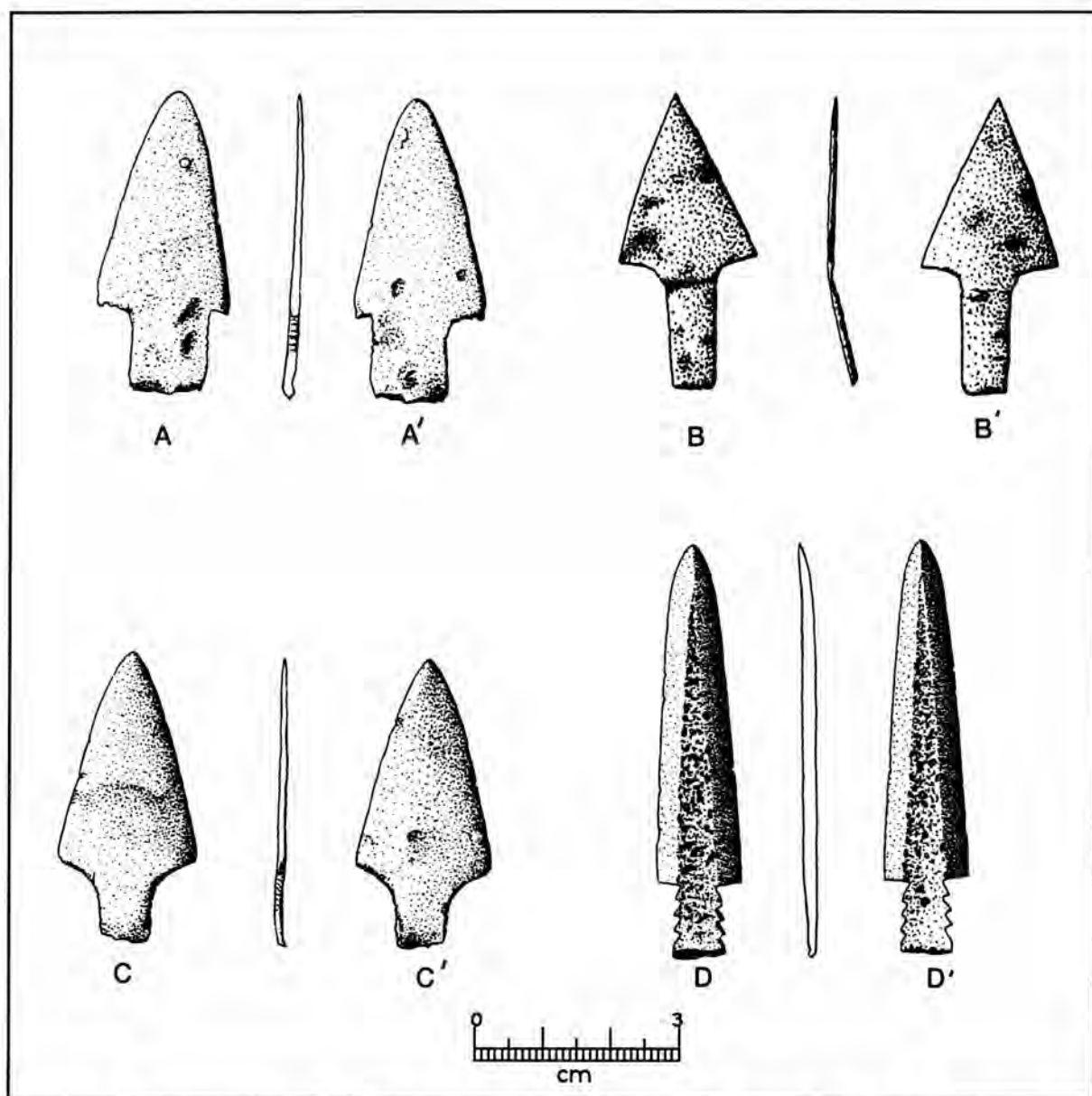


Figure 1. Metal arrow points from Tamaulipas, Mexico and South Texas. A, A' - B, B', Tamaulipas, Mexico; C, C', Atascosa County; D, D', Uvalde County.

Specimen 3, Figure 1, C, C' is an iron arrow point that appears to have been cut from a barrel hoop, probably with a chisel. The stem end is irregularly cut and is unfinished. The stem edges are serrated with ten notches on one edge and five on the other. Both blade edges are bifacially ground or filed. Overall it is in good condition but covered with rust. It is a surface find from the west side of San Miguel Creek near Cross Cemetery in Atascosa County.

This blade is 43 mm in length, 19.6 mm wide at the shoulder and varies in thickness from 1.5 mm near the tip to 1.7 mm at the shoulders. It weighs 5.2 grams.

Specimen 4, Figure 1, D, D' is an iron arrow point in remarkably good condition. It does not exhibit the deep rust coating common to most iron arrow points. Both sides of the stem and the center portion of the blade surfaces are lightly pitted with rust. The stem end has been cut off with a chisel and both sides of the stem have four deep notches that appear to have been made with a three-cornered file.

The shoulders are at right angles to the blade with the fourth notch on each side forming the straight shoulders. The blade edges are basically straight to near the slightly rounded distal tip. Both blade edges

are filed quite smooth and sharp on both faces and under microscopic examination exhibit parallel striations indicative of having been filed. These filed edges were prepared after the development of the rust in the central areas of the blades and the stem. While they have thin rust coatings there is no heavy rust buildup.

This specimen was found on the surface of a prehistoric Indian site while deer hunting twelve miles northwest of Uvalde. It is 60.6 mm long, 12.3 mm wide and 1.6 mm thick. It weighs 4.6 grams. Blade length is 49.6 mm. Stem length is 11 mm. Stem width is 7.5 mm.

DISCUSSION

The town of Mier was established on the 6th day of March, 1753 by José de Escandón on the bank of a small stream called del Alamo (Holland n.d.). This was the site of an Indian village about a day's march from the El Cantara Crossing on the Rio Grande. This crossing was on a direct route from Monterrey to the Presidio at La Bahía. Mier grew to a population well in excess of 4,000 and is most remembered in the annals of Texas history for the unwisely conducted Mier expedition, under the command of Col. Wm. S. Fisher during the days of the Republic of Texas, when a rebellious group from this expedition under John R. Baker entered the town of Mier on December 26, 1842, and subsequently fought and were defeated by the Mexicans and surrendered. A number of these Texans were later killed in the Black Bean Episode.

During the political crisis of 1808-1810 in Spain and the New World several decrees were issued aimed at stemming the insurrection, and residents of the Rio Grande towns were encouraged to travel to Bexar to assist in defending that outpost. "Priests were told to preach loyalty to the Indians, and officials were instructed to have the Indians make bows and arrows in the event they would have to assist in the protection of

the borderlands" (Hinojosa 1983). By this time metal for making arrow points had been available to the natives for over a century. By the late 1600s metal objects such as arrow and lance points (and the material to make them) were widely traded to the natives. The Mexican traders not only supplied iron points but files to fashion and sharpen the arrow heads. It appears probable that any arrows made to support military activities in 1800-1810 were metal tipped. The metal points recorded here may be among those.

As early as 1750 the Lipan Apache were raiding the ranches and scattered settlements south of the Rio Grande (Wilkinson 1975).

The first recorded Comanche depredations in the Laredo area was in November 1773 when Comanches stole several saddle horses in Coahuila and killed four of five travelers they encountered enroute to San Antonio. By 1776 Comanche raids were frequent.

While we find no record of an Indian raid on Mier, in September 1776 the Captain at Mier requested assistance from Laredo, presumably to impede an Indian raid.

In 1818 one of the largest Indian invasions ever faced by the Rio Grande jurisdictions took place when a thousand Comanche warriors rode down from the plains—raiding, killing, scalping, raping and kidnapping, and driving off or slaughtering stock. These depredations continued for a number of years (Wilkinson 1975). The Comanche had guns but they also used the bow and arrow and the lance.

ACKNOWLEDGMENTS

These metal arrow points are all surface finds found by four different individuals. We extend our sincere appreciation to them all for the loan of their artifacts for study and documentation, and our special thanks to Richard McReynolds who prepared the illustrations.

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AN ARROW SHAFT STRAIGHTENER FROM TERRELL COUNTY, TEXAS

C. K. Chandler

ABSTRACT

This brief paper documents and illustrates a basalt shaft straightener from southwest Terrell County in the Texas Trans-Pecos. This type of artifact is most often made of limestone in Texas and often is fractured from heating.

THE ARTIFACT

This artifact, illustrated in Figure 1, was found on the surface of a large hearth field site (41TE293) in southwest Terrell County December 4, 1996. It is of uniformly dark gray vesicular basalt and is flattish oval in shape with a flat face on the reverse. Maximum dimensions are: 92.5 mm in length, 80.0 mm in width and 39.0 mm thick. Weight is 434.5 grams. The shaft straightening groove is a little off center and is positioned across the narrow width. This groove is well smoothed and polished and exhibits fine parallel striations. The edges are rounded and have two flattish areas.

The dorsal face has a flat tapered surface from the groove to the edge. Overall the surfaces appear to have been shaped by grinding, but these areas do not exhibit the polish and striations that are evident in the groove. Site 41TE293 is a large, flattish, creosote bush hearth field containing 21 fire hearths. It is located in a fork between Putman Canyon and an unnamed canyon where both canyons join Isinglass Canyon in southwest Terrell County. There is a thin scatter of chert chips and flakes around each hearth but complete artifacts are scarce. One near rectangular mano made of dark red porphyry was found several years ago about 65 meters north of where this shaft straightener was recovered. It was shaped by pecking and had been extensively used on one face in a back-and-forth motion.

This relatively flat hearth field is 460 meters long north/south and 310 meters wide east/west and is situated at 2300 feet elevation. There are several similar hearth fields recorded in the immediate area; one of these is about one-half mile in length and has over ninety hearths. The fire hearths in nearly all these sites vary in size from 90 cm to 280 cm in diameter.

DISCUSSION

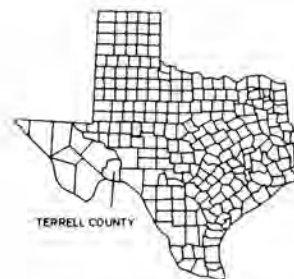
The basalt shaft straightener found at 41TE293 is only the third specimen of this material to be reported for south and southwest Texas. The two previous examples were reported by Chandler in *La Tierra* (1990, 1996). The first of these was from a site near the northernmost point of the Rio Grande, east of Big Bend National Park in Terrell County, about five miles from site 41TE293 that yielded the specimen reported here. The other basalt specimen was found at Rattlesnake Canyon in Val Verde County about fifty miles to the southeast of the first basalt specimen (Chandler 1996).

Stone arrow shaft straighteners do not appear to be common in any area. Stones, similar to those found in Texas, are found in southern California and the American Southwest where they are often reported as made of serpentine or soapstone and are much more stable when heated than is limestone (Hester et al. 1988).

Basalt is also very stable when heated. That is probably why basalt was selected for the manufacturing of these three specimens from the Texas Trans-Pecos. It is probable that these three basalt specimens are from basalt fragments washed down river from the Big Bend area, but is also possible that they may have been made in the Big Bend area and moved overland to the areas where they were found.

ACKNOWLEDGMENT

Sincere appreciation is extended to Richard McReynolds who drew the illustrations.



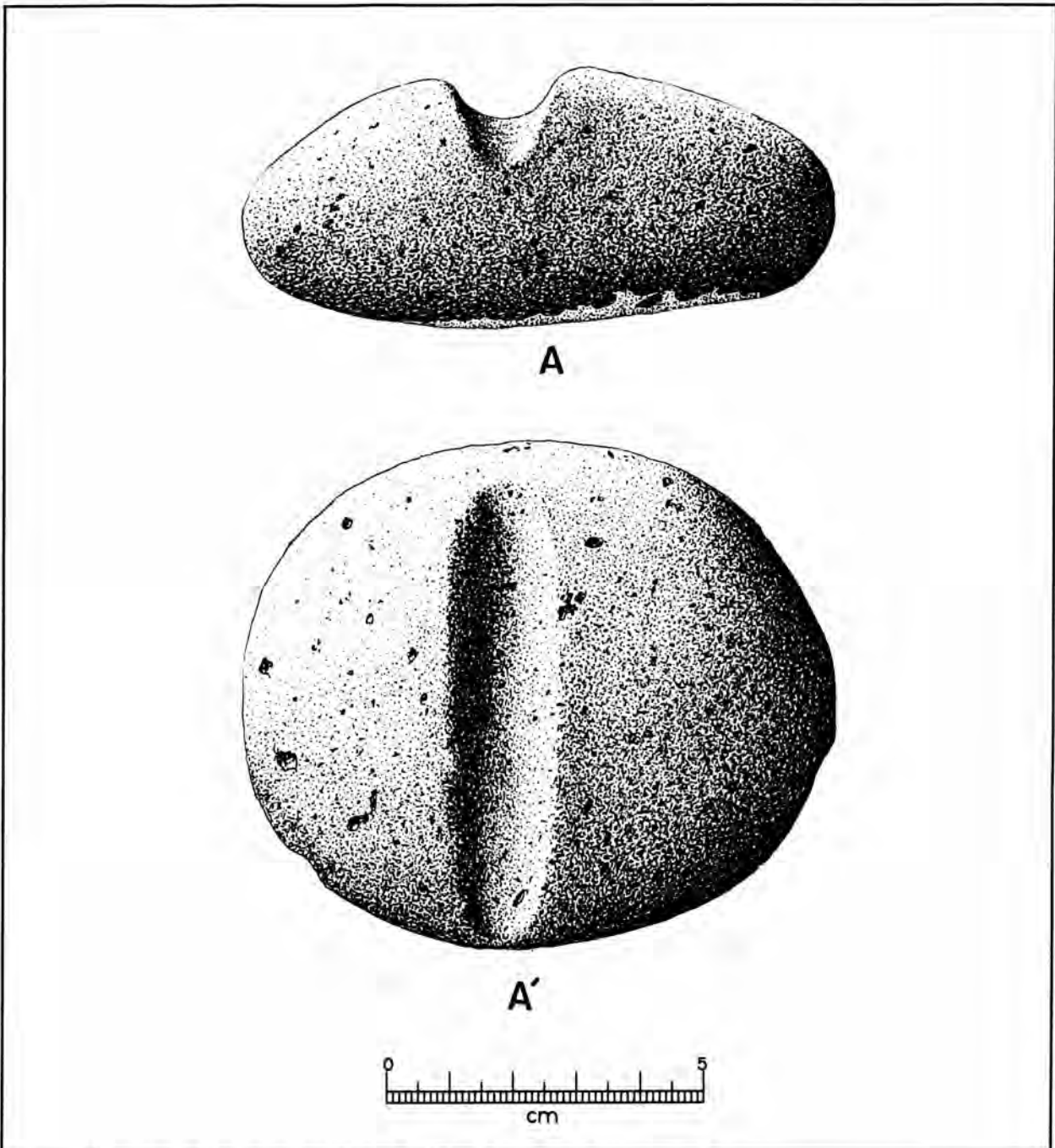


Figure 1. A, A'. An Arrow Shaft Straightener from Terrell County, Texas.

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ARROW POINTS FROM THE RINCÓN DE LOS INDIOS ON THE RIO SALADO, TAMAULIPAS, MEXICO

James Bryan Boyd

ABSTRACT

Several arrow point specimens recorded in a primarily Archaic period site located on the Rio Salado, in the state of Tamaulipas, Mexico are reported. The specimens are described, and the location as well as a general description of the site is given.

THE SITE

The site where the arrow point specimens were recorded is located on the north bank of the Rio Salado, approximately 14.5 kilometers west-northwest of the mostly abandoned town of Viejo Guerrero, Tamaulipas, and about 24 kilometers southwest of Zapata, Texas (see Figure 1).

The site was designated the Infierno Site. A nearby ranch is known as Rincón de los Indios (English translation "Corner of the Indians"). Figure 1 shows the area and the location of the site. Altogether, ten visits were made to the site, which is located on a remote section of the river and is accessible only by boat. The Rio Salado is navigable as far upriver as the site only when Falcon Reservoir is full and its waters (which are impounded by Falcon Dam) back up the river for several miles. The Rio Salado flows into the lake just west of Zapata, Texas.

The site, hereafter referred to as Rincón de los Indios, is located along a very large wash or *arroyo*. This arroyo meanders generally southward then westward, finally running into the Rio Salado. Very little vegetation other than scattered mesquite is present in this area, and there is no grass cover. This has led to severe erosion, and a pronounced deflation of archaeological deposits has occurred.

The site area is very extensive, covering many acres, and cultural debris is visible at the surface in great quantity. This debris includes tremendous amounts of burned (sandstone) rock, chert flakes, snail shells, mussel shells, and assorted artifacts.

Within the site there is an elevation differential of approximately 25 feet. The elevation range of the site

surface varies from approximately 310 feet above mean sea level (m.s.l.) to approximately 335 feet above m.s.l. The elevation of Falcon Reservoir is 301.2 feet above m.s.l. when it is full (I.B.W.C. 1975), and its waters back up the Rio Salado for many miles, and also back up the main wash at Rincón de los Indios for several yards. The main wash itself is usually dry, but becomes a raging torrent following heavy thunderstorms in the area.

All of the arrow point specimens recorded in the site were on the east side of the main wash. Several of the specimens were recorded in an *atelier*, or workshop, area located in the site's eastern quadrant (see Figure 2). This atelier may, in fact, be a refuse area



Figure 1. Map of area, showing approximate location of the site.



Figure 2. Photograph of the atelier feature. Note the accumulation of mussel shell and burned rock. Photo by the author.

as well, since it exhibits hundreds of freshwater mussel shells as well as burned rock and chert flakes. The presence of the large number of mussel shells has curtailed the effects of erosional processes on the feature, resulting in its consequential mound-like appearance.

Large numbers of projectile points were observed in the site. A substantial percentage of them are dart points, including both stemmed and unstemmed specimens. An analysis of the recorded dart point styles indicates that the site was utilized from the Early Archaic through the Prehistoric period. A limited utilization of the site during the Late Prehistoric period accounts for the sparse presence of arrow points.

THE ARROW POINTS

A total of 18 arrow points was recorded. Fourteen of these are fragmentary specimens, and four are complete. Thirteen of the 14 fragmentary specimens are complete enough that their types (established and/or provisional) could be determined. Only one distal fragment is represented in the sampling. Five arrow point styles are represented, including Caracara, Clifton, Perdiz, Starr, and Toyah.

Altogether, 13 of the 18 specimens are included in these five types. Four of the 18 specimens are provisional or indeterminate types, and one is the distal fragment just mentioned. Figure 3 illustrates the arrow points.

Caracara (H). Only one specimen resembling the Caracara type was recorded. It is a complete specimen, and measures 21.8 mm in length. It is made from a light-colored chert and exhibits a slight concavity along the proximal edge.

Clifton (A). Three specimens resembling the Clifton type were found. All are proximal fragments, and it is notable that all three were found in proximity to the atelier feature earlier described. One of the specimens is made from a translucent, quartz-like material with some dark inclusions. Another of the specimens is made from a light brown chert, while the third is made from a rust-colored chert.

Maud-like (I). One arrow point proximal fragment resembles the Maud type of northeast Texas, and is similar to numerous other specimens which have been recovered in South Texas and northeastern Mexico (Boyd n.d. a). The specimen is made from a light



Figure 3. Recorded arrow point specimens; photo by the author.
 Read left to right. Top row: A (3 points), Clifton; B (3 points), Perdiz.
 Middle row: C (5 points), Toyah; D, "Rabbit-Eared" Starr; E, Starr.
 Bottom row: F, Indeterminate type A; G, Indeterminate type B; H, Caracara;
 I, Maud-like; J, distal fragment.

light brown chert, and was noted in the atelier feature.

Perdiz (B). Three specimens which conform to the Perdiz style were recorded. All three specimens are fragmentary, and all were observed in proximity to the atelier feature. Two of the specimens are proximal fragments with substantial portions of the blade(s) remaining intact, while the third specimen's proximal end is fragmented but the blade is nearly complete. This third specimen is unifacially flaked, and is made from a brown-colored chert. One of the other specimens is made from a pinkish-colored chert, while the other is made from a tan or cream-colored chert with darker inclusions.

"Rabbit-Eared" Starr (D). One arrow point proximal fragment resembles this provisional type. This type has been previously reported (Boyd n.d. b; Saunders 1985:17 [Figure 9b], 13; Weir 1956:72-73

[Plate 9]), but has not been formally recognized. The characteristics of this style are its comparatively large size, usually considerably larger than the Starr type, and its pronounced "U"-shaped rather than "V"-shaped basal concavity. The lateral edges of this type are almost always markedly concave. The specimen recorded at Rincón de los Indios measures 30 mm in width.

Starr (E). One of the fragmentary specimens recorded in the site resembles the Starr type. The specimen is rather small ($L=20.7$ mm), and is made from a translucent material similar to that from which one of the Clifton specimens is made. This specimen was observed in proximity to the atelier feature.

Toyah (C). Five specimens belong to the Toyah category. Four of the specimens are fragmentary and one is complete. Several local variations of the type

kilometers to the west-northwest of Rincón de los Indios. Another of the specimens is made from a grayish chert, a third is made from a medium-brown chert, and a fourth is made from a tan-colored chert. The fifth specimen, which is complete, is made from a grayish-brown chert. This specimen is quite small, measuring only 19.6 mm in length. All five Toyah points are serrated along both lateral blade edges. The black specimen referenced above has a slight basal concavity, but exhibits no basal notch characteristic of the type.

Indeterminate Type A (F). This is a complete arrow point which is side-notched in a fashion reminiscent of the Caracara type. It differs from the Caracara in that the notches are quite shallow and somewhat rounded in appearance, and the width of the base ($W=10.2$ mm) is less than the width of the proximal portion of the main blade ($W=12.9$ mm). The specimen is well worked, fashioned from a tan-colored chert, and it is 36.6 mm in length. It is thick in cross section ($T=5$ mm), and exhibits steep beveling along both lateral blade edges on both sides.

Indeterminate Type B (G). This very unusual specimen is complete and is variant from any other type found in the region (Boyd n.d. a). It is somewhat reminiscent of a few specimens illustrated and described by Utberg (1969)—specimens which were recovered in the Laguna de Mayran district of southwestern Coahuila, Mexico, an area approximately 350 kilometers to the west-southwest. This specimen is quite unique due to a series of three notches on the lateral edges of both sides of the blade. The basal edge exhibits a shallow concavity and there is considerable beveling (left and right) on one face of the specimen. It measures 31.8 mm in length, the maximum blade width is 14.3 mm, and the width of the base is 11.3 mm. The specimen is made from a light brown colored chert.

Distal fragment (J). A single, finely-made arrow point distal fragment was recorded. The material used is a semi-translucent white chert. This specimen was found in direct proximity to a burial which was eroding out in the eastern quadrant of the site. It was found just downslope from the skeletal remains, where it appeared to have tumbled after eroding out. The burial was left undisturbed.

CONCLUSION

Eighteen arrow points recorded in a previously unreported, primarily Archaic component site are reported and described. Although the sampling is small, the limited areal distribution of arrow point specimens within this very large site would seem to indicate that it was utilized only on a very limited basis during the Late Prehistoric period. The area currently appears quite barren and inhospitable, and unfavorable conditions may have existed during the Late Prehistoric period as well. The large number of artifacts recorded in the site dating from the Archaic period indicates that the site was utilized over a long period of time, suggesting the possibility that conditions may have been more favorable then.

An examination of the recovered specimens reveals that several types characteristic of the region are present in the assemblage, but there are also type variations which, as in the case of the Toyah points, more closely resemble specimens of that type which have been reported from the Laguna de Mayran region in southwestern Coahuila, Mexico. One of the indeterminate type (Specimen B) arrow points also closely resembles specimens which have been reported in the Laguna. Other sites in the area of the Rincón de los Indios have also exhibited projectile points, both arrow points and dart points, which are similar in style to those common in the Laguna District (Boyd n.d. a). The frequency of occurrence of such specimens increases progressively from east to west along the Rio Salado, all but disappearing near the eastern end of the river where it merges with the Rio Grande in the area of Falcon Reservoir. The Rio Salado is one of the very few perennial sources of water in this area of Mexico, and it is reasonable to assume that it may have demarked a corridor along which the former nomadic hunters and gatherers who inhabited this region may have migrated.

ACKNOWLEDGMENT

The author wishes to thank his wife, Mary, for accompanying him on one of the long and arduous expeditions to the Rincón de los Indios. While in the site she helped gather information which will be critical in assimilating a future comprehensive report regarding this very important site.

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INFORMATION FOR CONTRIBUTORS

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

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

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

THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

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

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