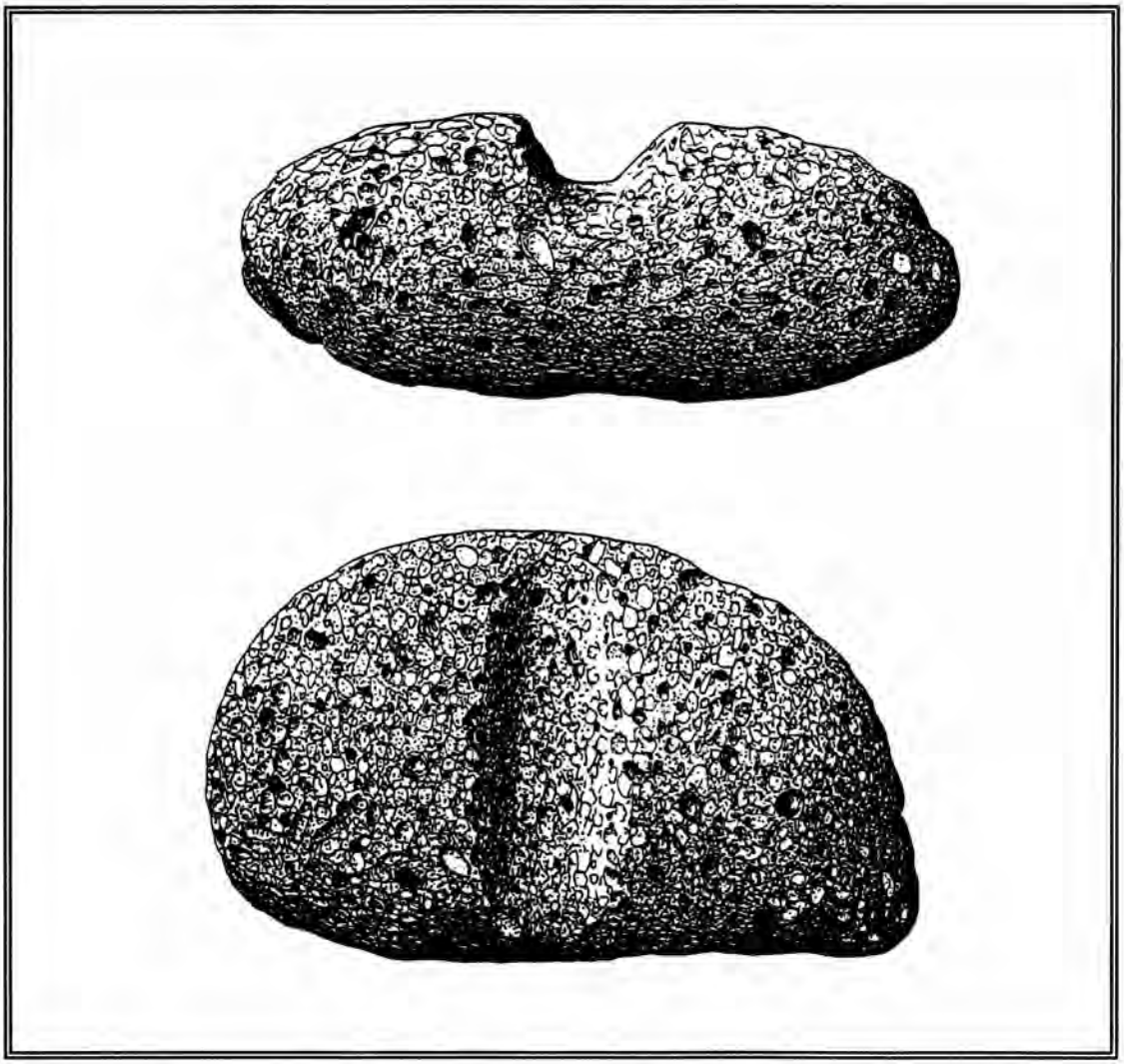
LA TIERRA



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LA TIERRA

QUARTERLY JOURNAL OF THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

Volume 23, No. 1
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Evelyn Lewis
Editor

About the Cover: Two views of a basalt shaft straightener. See report by C. K. Chandler, page 8. Drawing by Richard McReynolds. Other illustrations by Richard are found on pages 22, 48, and 53, as well as the cover.

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

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The ROBERT F. HEIZER Award

For Outstanding Contributions to Southern Texas Archaeology

for 1995

Jimmy Mitchell, right, presenting the Heiser Award to Dr. Alston Thoms

ALSTON V. THOMS

The 1995 Robert F. Heizer Award for outstanding contributions to Southern Texas Archaeology was awarded to Dr. Alston V. Thoms of Texas A&M University for his continuing significant research in the Medina River valley, including sites in the Applewhite Reservoir area as well as on adjacent private property. Dr. Thoms was project archaeologist for the last two years for the STAA field schools and guided both projects to highly successful conclusions, not only in terms of the accomplishment of state research objectives but also in educating and training a number of new STAA members in proper field techniques and research designs. He has very thoughtfully exposed field school participants to new technologies, making even complex new equipment and systems understandable and useful to even first time participants. He has kept the membership, as well as the broader scientific community, apprised of progress and findings of the work through publication in the STAA newsletter and *La Tierra*, and through public lectures and seminars. Dr. Thoms has made major contributions to improving our understanding of the Medina River valley and Southern Texas, and serves as an outstanding example to his professional peers.

The DEE ANN STORY ARCHAEOLOGICAL CONSERVATION Award

for 1995

Dr. T. R. Hester, Director, TARL, E. H. Schmiedlin of Victoria, with Judy and John Clegg

JOHN and JUDY CLEGG
The Espíritu Santo Ranch

The 1995 Dee Ann Story Archaeological Conservation Award was presented to **John and Judy Clegg** of the Espíritu Santo Ranch, Victoria County, Texas, for their enthusiastic efforts to preserve and protect the very significant historic and prehistoric archaeological sites on their property, including one of the sites of the Mission Espíritu Santo de Zuñiga (41VT11). They have encouraged and cooperated fully with surveys and other investigations in 1994 and 1995 by the Office of the State Archeologist, Texas Historical Commission, the University of Texas at Austin, the University of Texas at San Antonio, the Texas Archeological Research Laboratory, and local STAA members, to identify, evaluate, and protect important eighteenth and nineteenth century structures, as well as several Archaic and possible Late Prehistoric sites. Indeed, they have even located their new home near the site of the mission, which will provide constant oversight and protection for these ruins, and prevent intrusions from the river. They have provided a very friendly and supportive atmosphere for visiting researchers through their generous hospitality and willingness to provide access and investigations of these significant and endangered sites. The Cleggs are providing outstanding stewardship for the cultural resources on their property and serve as an excellent example for other landowners in southern Texas and the coastal bend.

The ARCHAEOLOGICAL PUBLIC SERVICE Award

For 1995

Jimmy Mitchell, right, presenting the award to Christopher Anderson

CHRISTOPHER ANDERSON

The 1995 Archaeological Public Service Award was presented to Christopher Anderson, staff writer for the *San Antonio Express-News*, who has distinguished himself through his balanced and objective reporting on cultural resource protection issues. Among Mr. Anderson's reports was a series of articles on the potential further destruction of prehistoric sites on the Walker Ranch, which is a National Historic District, and the efforts of the staff of the Texas Historical Commision to ensure investigation and protection of these sites. Some of these sites were on the THC's list "of the 10 most endangered historic properties in Texas." The resulting public awareness of the problem helped to bring about a resolution which helped to salvage significant archaeological information and provide long-term protection for at least some of these sites. This kind of objective, well-written reporting fully supports the objectives of archaeological science and public stewardship. In this way, Mr. Anderson has distinguished himself as a professional writer and as a concerned citizen, and is hereby recognized for his outstanding service to the public.

The 1995 OUTSTANDING STAA MEMBER OF THE YEAR

For 1995

Jimmy Mitchell, right, presenting the award to Mike Fulghum

MIKE FULGHUM

Mike Fulghum, an STAA member from Lakehills, Texas, was recognized as the outstanding avocational archaeologist of the year for 1995. Mike, through his enthusiastic efforts in support of the STAA field school, provides an example of how a motivated individual can have a significant, positive impact on making a field school a meaningful experience for all participants. He served on the STAA field school committee, helped plan field school activities, arranged for equipment needed in the field, transported supplies and equipment to field sites and the field school campgrounds, constructed or modified facilities as needed, fetched and carried, and did whatever else needed to be done to make the field school a success (even sometimes, at great personal expense). In all his archaeological activities, Mike Fulghum exemplifies what is possible for an interested, motivated STAA member. He is a good example for us all, and is most deserving of this special recognition, which is an honor awarded for the first time this year.

NOTES ON SOUTH TEXAS ARCHAEOLOGY 1996-1
Spanish Colonial Archaeology in the Victoria, Texas Region

Thomas R. Hester

In recent years, there has been a flurry of interest in the Spanish Colonial archaeology of the region around Victoria, on the south Texas coastal plain. Much of this work has involved members of the Southern Texas Archaeological Association (STAA). In this area are early missions and presidios, not to mention the site of LaSalle's Fort St. Louis, and as found by the state marine archeologist in summer 1995, the wreck of LaSalle's ship *Belle* (*The Medallion* 1995). There are also the well-known missions at Goliad that have been, in part, studied and restored since the 1930s (D. Fox 1983). There was archival research and desultory excavations in the Victoria region by the late John Jarratt, an avocational historian from Victoria. He seemed to have visited most known localities (or what he believed to be their sites) and, fortunately, his records are in the archives of The Victoria College. In 1968, the Texas Archeological Society carried out its annual summer field school at site 41VT8, the site of Presidio Loreto, on the Guadalupe River upstream from Victoria. STAA member Anne Fox is currently preparing the report on these important investigations (see D. Fox 1983:87).

However, the focus in the Victoria area has been on the search for, and study of, the three sites of Mission Nuestra Señora Espíritu Santo de Zuñiga. The first location, established in 1722, was somewhere along Garcitas Creek in Jackson County. As STAA member V. Kay Hindes (1995) has recently pointed out, the search for this mission began in earnest through the Office of the State Archeologist (OSA) in the 1970s. Most recently, as in the summer of 1995, Hindes, OSA staff, STAA member E. H. Schmiedlin, and others (including STAA volunteers) have continued this search, on the ground and through the air. To date, they have been unsuccessful, but there is little doubt that their perseverance will pay off, if the archaeological deposits representing that site are still intact.

Archaeological investigations at what was thought to be the second location of Espírtu Santo de Zuñiga (according the centennial marker at the site) were initiated by brief studies through the OSA in fall 1994 and spring 1995. The site, 41VT11, had long been inaccessible to archaeologists; however, looters and treasure hunters had gained access by boat via the nearby Guadalupe River over the decades, and had destroyed much of the near-surface or subsurface architectural remains. In 1965, digging in a mound at the site had yielded a human burial, though recording of this discovery by Cecil A. Calhoun (notes on file at the Texas Archeological Research Laboratory [TARL]) clearly indicated that this was a post-mission era interment.

Landowner changes at 41VT11 in 1994, and the intercession of STAA members Bill Birmingham and Schmiedlin, had created the atmosphere for scientific studies. The OSA testing indicated that there were substantial buried deposits at the site. Through collaboration involving STAA members in the Victoria area, the landowners, the OSA, and TARL, plans were made in spring 1995 for three weeks of further excavations at 41VT11 by the author with members of the 1995 UT-Austin summer archaeological field school. These plans developed further when Tamara L. Walter, MA student in anthropology at the University of Montana, became involved with the project, with her goal being an MA thesis on research at the site (see Hester and Walter 1995).

Thus, in June-July 1995, students and staff from the UT summer field school worked with Hester and Walter at VT11. The main objective of that field school, team-taught by Hester and Dr. Michael B. Collins of TARL, was the geoarchaeological study of the River Spur site (41VT112) at Riverside Park in the town of Victoria (Stark 1995). However, by rotating students and staff between River Spur and VT11 during a three-week period, during the five-week field school, a considerable amount of fieldwork was done at this mission locality.

The initial goals at 41VT11 were to gain a better understanding of the integrity of the site. We were especially interested in locating and testing the habitation areas of the mission Indians. Archival records indicate that the primary Native American occupants of this site, during its span between 1726-1749, were the Aranama and the Tamique. The limited time frame of mission Indian life at this site would, we believed, provide important data not only on their activities, but also valuable comparative data for studying earlier,

contemporary, and later, mission Indian materials from the Goliad, San Antonio and Guerrero (San Bernardo, San Juan Bautista) missions. We were able to locate a well- preserved mission Indian occupation in a grove of anaqua trees just west of the standing mission ruins, and to document a well-preserved zone containing faunal remains, mussel shell, Guerrero arrow points, end scrapers, debitage, Spanish Colonial pottery, bits of copper, marine shell fragments, etc. (Hester and Walter 1995:6). On the northwest end of the knoll on which the mission was built, erosion had exposed large animal bones and artifacts. Excavations in the summer, and then continuing in November, 1995, led to the complete exposure of this trash deposit, which included large, broken bones, mandible and maxilla fragments, and teeth of bovids (likely bison and cow), remains of smaller mammals (as yet unidentified), broken Guerrero points, end scrapers, flake tools, bone-tempered pottery, mussel shells, bone beads, and other debris. It is reminiscent of, though much smaller than, a trash deposit excavated by UT-San Antonio archaeologists outside the west wall of the Alamo in 1979 (the "Radio Shack"/West Wall excavations currently being written up by Anne Fox). In the excavations of the VT11 "bone bed" feature, much help was provided by STAA member Patsy Goebel (Cuero), and by UTSA graduate students Marilyn Shoberg, Betty Inman, and Jane Lakeman. This group, along with Goebel and Walter, have been designated the "mission belles" (a group to which we must add a "bell," Matthew Sheppard, a UT undergraduate!).

The summer 1995 excavations were also able to provide some details of the architecture at the site, through the work of STAA member and former UTSA Center administrator, Jack D. Eaton. Eaton's work shed new light on the standing ruins, which do not appear to have been the mission church as popularly thought. In addition, a mound south of these ruins was tested and well-preserved architectural remains were found; indeed, the lower portions of some walls retained a red-painted plaster interior.

It is also important to note that during the November, 1995 work at the "bone bed," Schmiedlin and STAA member Ed Vogt, Jr. were able to test site 41VT38, a site immediately adjacent to VT11, nearer the river. This site was originally reported by Anne Fox in 1975. Schmiedlin's work, currently being written up for publication, revealed Spanish Colonial, Late Prehistoric, and Archaic materials at VT38. We were also able to do some limited exposure of additional deposits in the main mission Indian habitation area, through the efforts of Bill Birmingham, Vogt, and others. Indeed, the November, 1995 work brought together a number of volunteers from the Victoria area, students from Austin, volunteers from the Texas Department of Transportation, and from Southwest Texas State University. In one or both of these 1995 field studies by UT-Austin, we were further aided by Anne Fox, Cecil Calhoun, and Jimmy Bluhm (Goliad State Park).

Two final notes; during the fall 1994 fieldwork by the OSA, a Total Data Station from TARL was used to map the entire locality through the work of Jason Lucas and Matt Williams, UT-Austin graduate students. In summer 1995, additions to the map, including details of the structures tested by Eaton, were done by UT-Austin doctoral candidate Ken Brown (see Hester and Walter 1995:5). Secondly, the landowners, John and Judy Clegg provided the ultimate in cooperation and their protection of 41VT11 has been recognized through the Dee Ann Story Archaeological Conservation Award, bestowed upon them by the STAA in its January, 1996 meeting.

In closing, let me review the issue of whether the site of 41VT11 was the second site of Espíritu Santo, or its third location. We know it was the last location before the mission was moved to Goliad in 1749 and the grand mission of Espíritu Santo was established, now restored as a state park. Kay Hindes had suggested that VT11 was actually the third location of Espíritu Santo, and that a second location, brief though it was, had been in the Riverside Park area in Victoria. I suggested to Kay that she pull together these documents and publish them, which she has done (Hindes 1995). It is, to me, a convincing argument. The location that she favors is 41VT10, the Tonkawa Bluff site. Originally tested by the University of Texas in 1932, it was later partially dug by Jarrett in 1965, and local Victoria informants note that a variety of Spanish Colonial and mission Indian materials have been found there. Indeed, in 1979, Anne Fox briefly tested the site for the City of Victoria (Fox 1979), and found a variety of early 18th century Spanish Colonial and mission Indian artifacts. It is hoped that Hindes, Schmiedlin and other interested parties will be able to verify this location in future investigations. Schmiedlin has recently identified what appear to be acequias near Spring Creek, close to VT10 (Jarratt had apparently seen such features in earlier explorations; see Fox 1979:7).

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

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

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

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

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

A BASALT SHAFT STRAIGHTENER FROM RATTLESNAKE CANYON IN VAL VERDE COUNTY

C. K. Chandler

ABSTRACT

This brief paper documents and illustrates a basalt shaft straightener from Rattlesnake Canyon in Val Verde County, Texas.

THE ARTIFACT

This specimen is made of uniformly brown vesicular basalt. Dimensions are: Length, 94 mm; Width, 57 mm; Maximum Thickness, 36.5 mm. It weighs 220 grams. It has a single transverse groove at right angles to the long axis. This groove has a maximum width of 20 mm at the surface with a maximum depth of 9 mm at the center. The groove edges are rounded. It was found on the canyon floor by Harry Shafer near the rock paintings along the canyon wall and placed at Witte Museum in San Antonio. It is illustrated in Figure 1.

Stone arrow shaft straighteners are not common in any area. Nearly all of those reported in

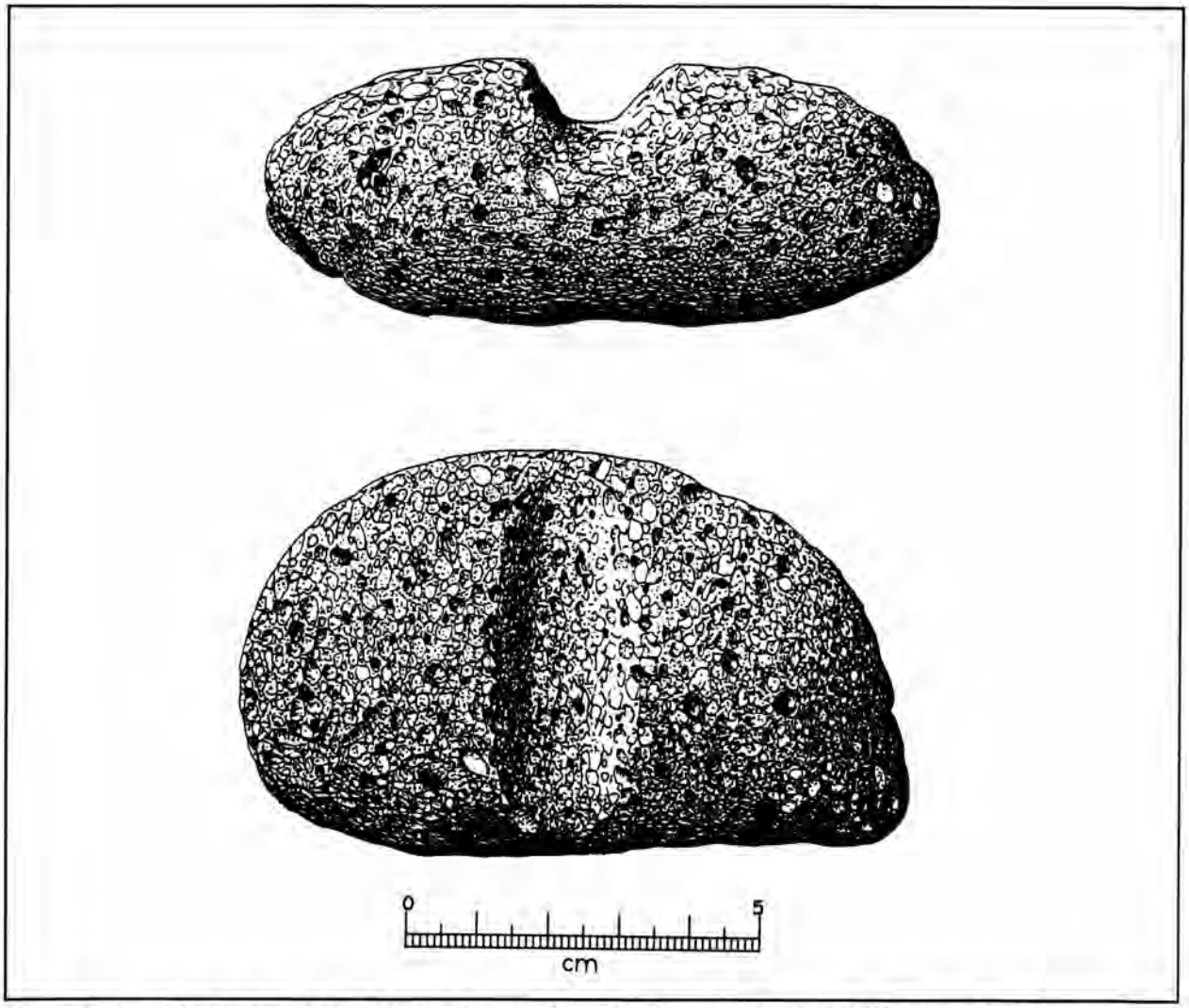

Figure 1. A vesicular basalt Shaft Straightener from Rattlesnake Canyon, Val Verde County.

central and south Texas are made of limestone and many of these are thermally fractured. Grooved stones from other areas, notably southern California and the American Southwest, often have been reported as made of materials such as serpentine and soapstone which is much more stable when heated than is limestone.

It is notable that the use of basalt in the manufacture of shaft straighteners is rarely reported. The one reported here is only the second one reported in Texas. The other one is from Terrell County along the Rio Grande River about fifty miles to the west of Rattlesnake Canyon (Chandler 1990).

ACKNOWLEDGMENTS

I extend my appreciation to Roberta McGregor and the Witte Museum for the loan of this artifact and to Richard McReynolds for his preparation of the illustration.

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DRILLING HOLES IN SHELL

Leland W. Patterson

ABSTRACT

Results of experiments to drill holes in shell, using a bow drill, are described. Two bit types were used, including (1) wet sand on the end of a wood drill shaft, and (2) a hafted chert perforator on a wood drill shaft. Both drill bit methods gave satisfactory results.

INTRODUCTION

Indians in many parts of North America made shell pendants and beads with drilled holes. Both marine (Hall 1981) and freshwater (Huebner and Comuzzie 1992:Figure 33) shells were used. In a previous paper (Patterson 1995), it was noted that a hand-held chert perforator was not satisfactory for drilling a hole in a *Rangia* shell. Experiments have now been performed to drill holes in shell with the use of a bow drill. One experiment used wet sand on the end of a wood drill shaft. This method is recognized for drilling hard materials. For example, Weber (1984) used wet sand with a bow drill set to experimentally drill a hole in a horneblend stone pendant. Another experiment described here used a hafted chert perforator on the end of the drill shaft. Morse and Morse (1983: 224) have described experiments by Sierzchula (1980) to drill holes in shell, using a bow drill with hafted replicates of chert microliths of the Cahokia type from the early Mississippian period (A.D. 700-1000).

The bow drill set used in experiments discussed here is shown in Figure 1. The principal elements are a short bow, a wood drill shaft, and a pressure block. The bow is made of a fresh-cut crepe myrtle branch, with a woven plastic cord for a string. The drill shafts are made of 3/8-inch diameter commercial wood dowel. The pressure block is a piece of pine with a concave depression to hold the upper rounded end of the drill shaft. The general procedure for using a bow drill to drill holes in shell is the same as for using a bow drill for fire starting. The drill shaft is engaged with the bow string by looping the string around the shaft. The drill shaft bit is then positioned at the desired drilling location, and pressure is applied with a block of wood to the top end of the drill shaft to maintain pressure on the drill bit. Drilling is done by drawing the bow forward and backward to rotate the drill shaft.

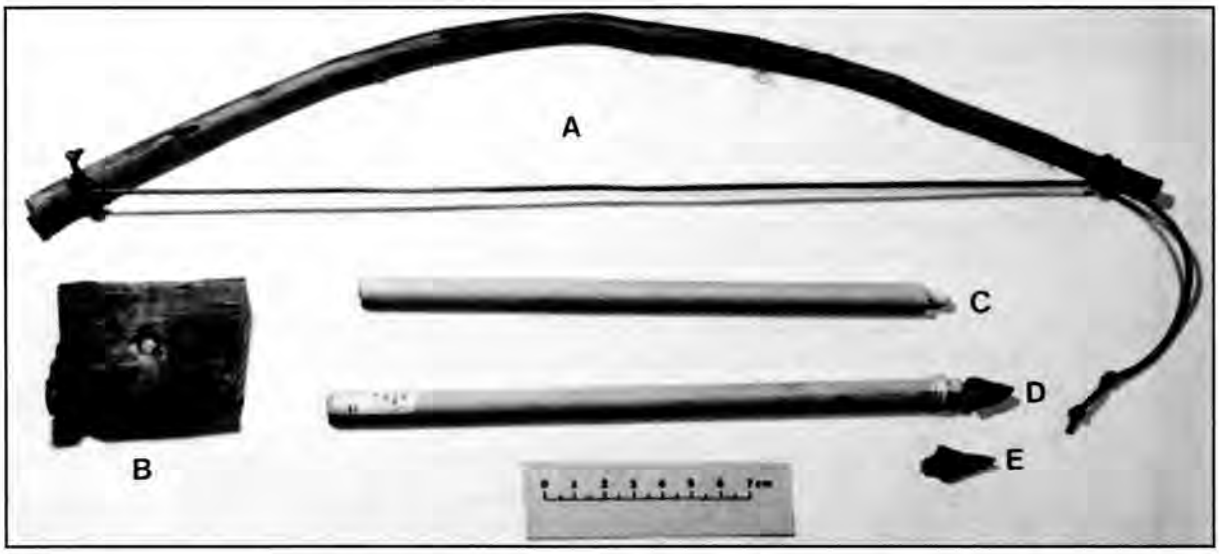

Figure 1. Bow Drill Equipment. A, bow; B, pressure block; C, drill shaft for wet sand; D, drill shaft with hafted perforator; E, perforator with broken stem.

USE OF BOW DRILL WITH WET SAND

Two holes were drilled in a very large freshwater mussel shell taken from Buffalo Bayou on the west side of Houston, by use of the wet sand drilling method. Making each hole took 30 minutes to drill through a shell thickness of 5 mm. Each hole has a diameter of 4 mm. The holes were drilled from the outside surface of the shell so that the flat edges of the inside of the shell half could be placed on a flat surface to stabilize the shell. As Weber (1984:15) has noted, it is necessary to replace the wet sand after only a few strokes of the drill. The holes drilled in mussel shell are illustrated in Figures 2A and 3A for the outside and inside shell surfaces, respectively. The drill shaft used for this experiment (Figure 1C) was modified to have the working end diameter equal to the desired hole diameter. When the drill bit broke through the inside surface of the shell, a hand-held chert perforator was used to ream the hole to the desired diameter at the inside shell surface. Reaming of the hole at the inside shell surface did not give any taper to the hole on that surface.

USE OF BOW DRILL WITH HAFTED CHERT PERFORATOR

In this experiment, a hole was drilled in a *Rangia* shell recently taken from Trinity Bay. *Rangia cuneata* is a brackish water shellfish. Contracting stem arrow point replicates were used as perforators in this experiment. If the lateral edges of the arrow point expand very much, it is necessary to retouch the tip to obtain a section at the tip with parallel lateral edges, with a diameter equal to the desired hole diameter. Perforators with arrow point forms have this type of modification at the George C. Davis Caddo site in Northeast Texas (Baskin 1981: Figure 34). The perforator should not be too pointed, so as to avoid tip breakage. Hafting of the stone perforator for this experiment was done with a combination of a slot and a tapered hole in the drill shaft end, using Elmer's Glue as an adhesive.

Drilling of the hole in the *Rangia* shell took 25 minutes to drill through a thickness of 3.5 mm. The hole diameter is 3 mm. For this experiment the shell was stabilized between two blocks of wood to prevent movement. As with the first experiment the hole was drilled from the outside surface of the shell. Two chert perforators were used because the first one (Figure 1E) broke at the stem when work was about half completed. Drilling was completed with a second hafted perforator (Figure 1D) which had some tip breakage at the time of breakthrough at the inside shell surface. As with the first experiment a hand-held chert perforator was used to ream the hole to the desired diameter at the inside shell surface, following breakthrough of the hole on the inside surface. The hole drilled in the *Rangia* shell is shown in Figures 2B and 3B for the outside and inside shell surfaces respectively.

The hafted perforator with stem breakage that was used for the first part of the experiment has an intact tip (Figure 1E). Use-wear on the tip and adjacent lateral edges consists of smoothing and some polish, and these areas have many small use-wear flake scars. It appears that the small use-wear flake scars maintained a rough enough surface for the perforator bit to remain effective even though some smoothing of the surface occurred. This is consistent with the comment by Morse and Morse (1983:224) concerning another experiment to drill shell, that the stone perforator remained effective after multiple use. Observations of use-wear were made with a 10-power hand lens and a zoom stereo microscope set at 60-power magnification. At 60 power some striations in polished areas could be observed and appeared to be oriented in the direction of tool rotation.

DISCUSSION

It is concluded from these experiments that the efficiency of drilling holes in shell with a bow drill is about the same whether it be by use of wet sand or a hafted chert perforator. Use of wet sand required 30 minutes to drill through a shell thickness of 5 mm. Use of a hafted chert perforator required 25 minutes to drill through a shell thickness of 3.5 mm. It was not determined if hardness of different types of shell is a significant factor in required drilling time. My drilling speed could probably be improved with additional practice. Also, more experience with chert perforator tip preparation might result in less tip breakage. In another experiment a hole was drilled in shell in 10 minutes (Morse and Morse 1983:224), but the shell thickness is not known.

Few locations on the Texas coast have been identified as potential shell ornament manufacturing locations. Except for hafted chert perforators all elements of a bow drill set are made of perishable materials, therefore shell ornament manufacturing sites would have little evidence of hole-drilling equipment.

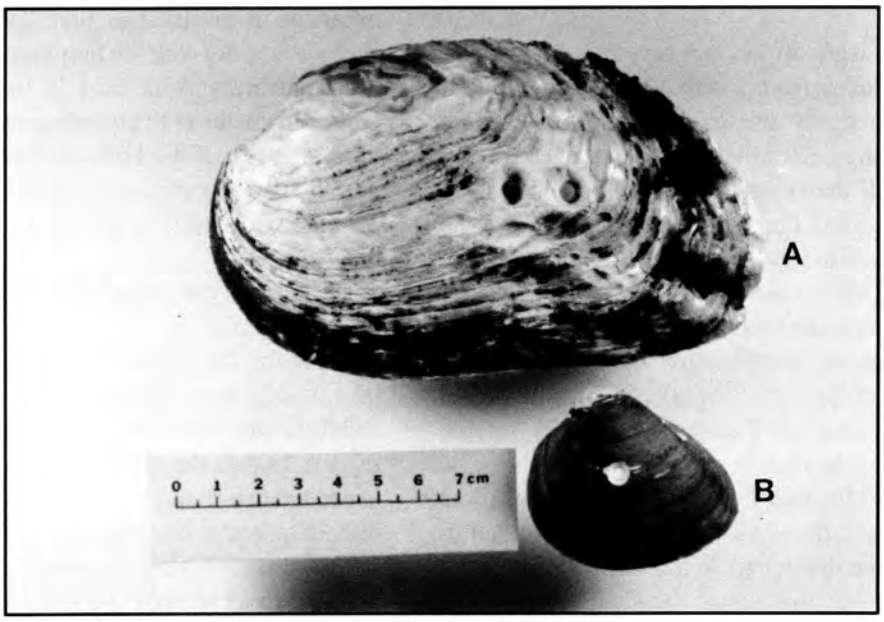

Figure 2. Holes drilled in shells, Outside surfaces.
A, holes made with wet sand in mussel shell.
B, hole made by perforator in *Rangia* shell.

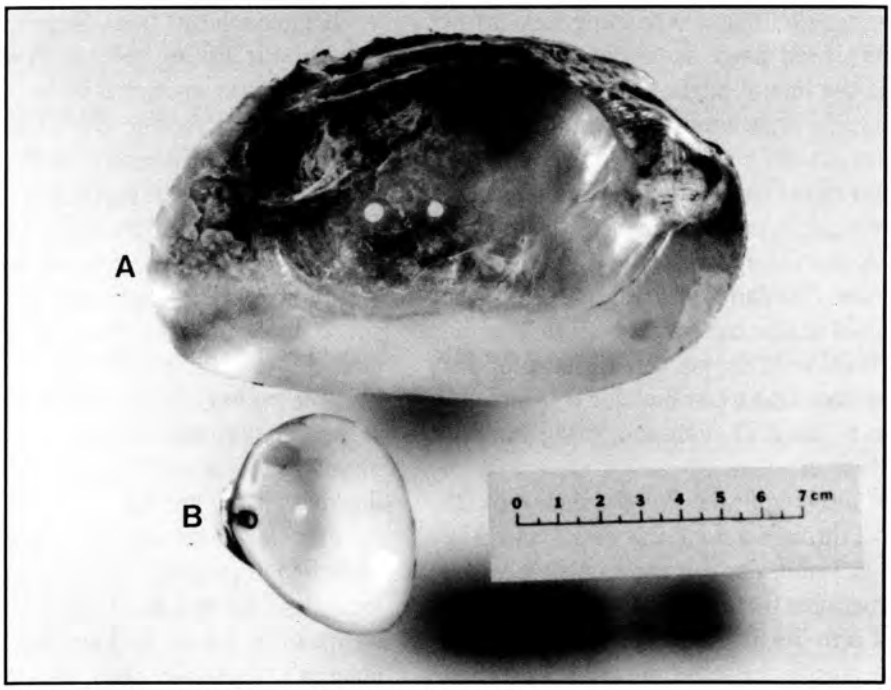

Figure 3. Holes drilled in shells, inside surfaces.
A, holes made with wet sand in mussel shell.
B, hole made by perforator in *Rangia* shell.

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PUBLICATION NOTICE

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

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

MODIFIED LAND SNAILS FROM NUECES COUNTY, TEXAS

Jerry L. Bauman

ABSTRACT

This report describes two modified Rabdotus snail shells recovered from the Bluntzer Site, 41NU209, Nueces County, Texas. One snail shell is coated with asphaltum and the other has been cut. No other occurrence of modified Rabdotus snail shells have been reported in Nueces County. The nearest occurrence is in the Lower Pecos Rio Grande area.

INTRODUCTION

The Bluntzer Site is a multi-component site consisting of an Indian occupation site underneath an early American settlement site. The site was utilized by Native Americans from about the Mid-Archaic period until the settlers began moving into the area in the early 1800s. Several buildings were erected on the site in the 1860s when the town of Bluntzer was established.

The Bluntzer Site was tested by the Coastal Bend Archeological Society over a period of six years. During cleanup and backfilling of the test excavation units, both land snail shells were recovered from the loose plow zone of the field where the site is located.

THE ARTIFACTS

Specimen No. 1 (Figure 1, Snail No. 1 A, B) is illustrated in two positions. The land snail shell is 2.4 cm long, 1.2 cm high, and 1.3 cm wide. The back of the shell is pierced by a narrow transverse cut 0.1 cm wide and 1.3 cm long. The cut is off center and angles towad the aperture, and roughly penetrates the shell to the center. Since the ends of the cut are flat, it is unlikely that it was produced by farm machinery or by Native Americans. It appears to have been cut by a hacksaw blade.

Specimen No. 2 (Figure 1, Snail No. 2) is 2.9 cm long, 1.6 cm wide, and 1.35 cm high. The back of the snail shell is coated with a thick patch of asphaltum. It is similar to Specimen No. 3 reported by C. K. Chandler (1987:27-28) in that the design does not appear to be intentional but may have been dipped or dropped into a shallow bowl of hot asphaltum or had some asphaltum dropped on it. Small asphaltum lumps are not uncommon at the site.

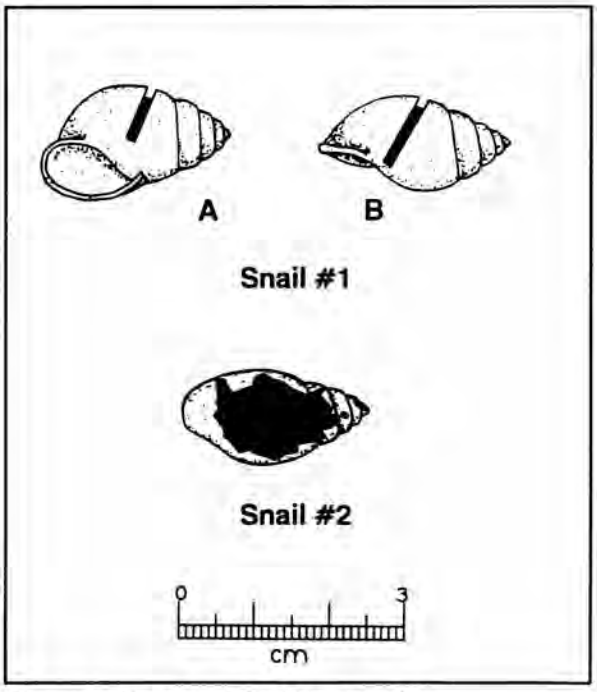

Figure 1. Two modified land snails.

DISCUSSION

Since Snail No. 1 appears to have been cut by a hacksaw blade, it is highly unlikely that it should be associated with the Indian occupation aspect of the site. Most likely it should be associated with the European/American settlers who occupied or maintained the buildings that once stood on the site. The snail could have been cut at any time since the buildings survived into the early 1900s.

Snail No. 2 is very likely associated with the Indian occupation aspect of

the site. Asphaltum lumps and asphaltum coated pottery, Rockport Black-On-Gray (Suhm and Jelks 1962:131-132), has been recovered from the site. *Rabdotus* land snails are numerous at the site in concentrations suggesting that they were not utilized as a food source but were attracted to the site by the amounts of organic matter left by the Indians. Possibly the snail was utilized as a painting tool for decorating pottery.

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NEW TARL PUBLICATIONS*

Two major new TARL publications have just appeared. Both are 2-volume works that provide a great deal of new information on Texas archeology. Both are in TARL's *Studies in Archeology* series.

Robert Ricklis (TARL Research Fellow) and Michael B. Collins (TARL Associate Director) are the authors of *Archaic and Late Prehistoric Human Ecology in the Middle Onion Creek Valley, Hays County, Texas* (Studies No. 19, a 2-volume, 651-page report (with 275 figures and 161 tables, and covers designed by Ken Brown of TARL) that details the excavations of several sites near Buda in 1989-1990 under contract with the Texas Department of Transportation.

Volume 1 provides details on the components found at the Barton site (Early Archaic: Bell/ Andice/ Calf Creek), the Mustang Branch (Bluff) site (a Late Archaic burned rock midden), and the Mustang Branch (Terrace) site (a Toyah campsite). ... In Volume 2, there are numerous topical studies. They include the study of a historic site, geomorphic studies in the middle Onion Creek valley, vegetational analyses, paleobotanical research, faunal analysis, molluscan studies, reports on radiocarbon dates (and thermoluminescence and archeomagnetic research), archeomagnetism, the use of a magnetometer at the Barton site, ceramic paste analysis, stable isotope research, use-wear studies, residue analysis of burned rocks and artifacts, and a replicative study of Andice/Bell points.

The Loma Sandia Archaic cemetery in Live Oak County, southern Texas (41LK28) is fully published in Studies No. 20, *Archeological Investigations at the Loma Sandia Site (41LK28), A Prehistoric Cemetery and Campsite in Live Oak County, Texas*, authored by Anna Jean Taylor and Cheryl Lynn Highley. The 2-volume, 856-page report, with 399 figures and 123 tables, features original cover art by Dr. Frank A. Weir, and is accompanied by a map packet containing large plans of the cemetery, drawn by Kathy Dodt-Ellis, Bruce Ellis and Frances Meskill. ... These 2 volumes contain the work of many collaborators, including an archeological and ethnohistorical background by Dr. Stephen L. Black of TARL, detailed reviews of prehistoric cemeteries in Texas by Dr. Grant D. Hall of Texas Tech, analysis of the shell artifacts by Meredith L. Driess, along with numerous other special studies including bone and antler artifacts, ceramics, a late Paleoindian/Early Archaic lithic cache, use-wear analysis of Tortugas points, fluoride dating of the burials, etc.

* Exerpted from *The Newsletter of The Friends of the Texas Archeological Research Laboratory* (Vol. 3, No. 2, October 1995).

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HUMAN BURIAL RECOVERY FROM 41KA89, KARNES COUNTY, TEXAS

J. A. Huebner, R. Blackburn, C. K. Chandler, J. L. Mitchell, and E. H. Schmiedlin

ABSTRACT

Skeletal remains representing a single, primary human interment were excavated following accidental exposure at the edge of a sand pit on the Rudy Haiduk property in Karnes County, Texas. The bones are that of a partially preserved adult male in a tightly flexed position, on his left side, oriented to the south (165 °), and facing west (265 °). No pathology was identified and no stature measurements were possible due to the deterioration of the long-bone articular ends. A Fairland dart point discovered within the chest cavity suggests that the burial dates to Late Archaic times. Stable isotope analysis of bone collagen producing $\delta^{13}C$ and $\delta^{15}N$ values indicates a diet different from that of groups further north on the coastal plain and from those subsisting in coastal environments.

INTRODUCTION

In early August of 1990, human skeletal remains were found eroding from the edge of a deep sand pit near Falls City, in Karnes County, Texas. The property owner, Mr. Rudy Haiduk, and Mr. Erwin Kramer of Kenedy, alerted Office of the State Archeologist steward Jim Mitchell to the presence of the exposed human bone and requested assistance with its recovery prior to enlargement of the adjacent sandpit. On 18 August, the authors met at the site to salvage this isolated interment, designated 41KA89. A number of Karnes County residents visited the excavations and provided a bar-b-que lunch and cold drinks for the excavators.

THE SITE

The site is found in an upland pasture, roughly one kilometer northeast of Falls City, Texas, in the first terrace above the right bank of Marcelina Creek (Figure 1). The creek, which flows roughly 130 meters to the east of the site, joins the San Antonio River, in the vicinity of 41KA23, ca. 900 meters south of 41KA89 (Mitchell et al. 1984). The terrace is comprised of sandy sediments which are presently being mined. The upper horizon, in which the burial

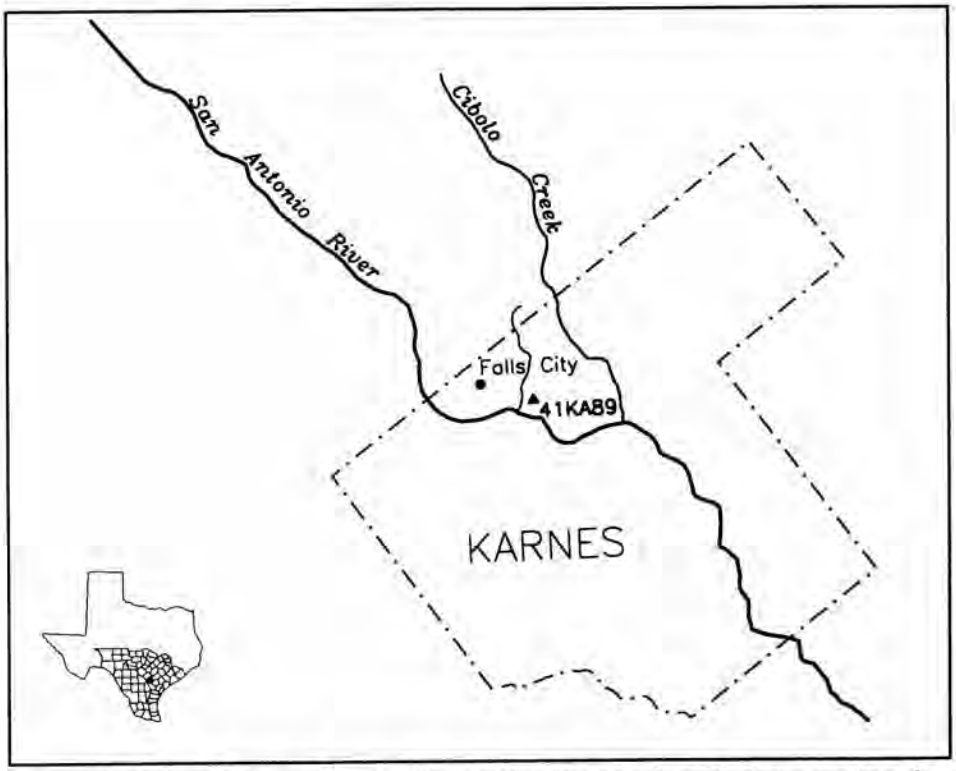

Figure 1. Map of Karnes County illustrating the relationship between the site and the major local drainages.

occurred, is a well cemented fine sand separated from lower, coarser sand by a lens of gravels cemented by $CaCO_3$.

Vegetation surrounding the site consists of forbs, improved pasture grasses and upland shrubs and bushes. Along the nearby streams typical South Texas riparian species such as willow, walnut, pecan, hackberry, and whitebrush are found in the narrow bottomland strips.

THE BURIAL

The burial feature contained a single, tightly flexed human interment resting on the left side (Figure 2). The apex of the cranium was oriented to the south (165°), toward the San Antonio River, facing west (265°) with the face rotated downward toward the left shoulder. The right arm was tightly flexed, with the humerus running along the ribcage, while the hand was in the vicinity of the face. The burial pit was oval in shape and was identified by the fill color which was slightly darker than the surrounding matrix.

The condition of the bone ranged from chalky white and friable, to compact and well preserved; overall however, the remains were poorly, and only partially preserved. The skull, distal femurs, and proximal tibias and fibula had been exposed and recovered with a layer of sand for protection by the land owner approximately a week prior to the reported excavation. Nearly every skeletal element has one or more post-mortem fractures, and all of the articular surfaces of the long bones are absent. Only the portion of the skull superior to the orbits is present, although it is badly warped as a result of post-mortem ground pressure. The gender of the individual is tentatively identified as male, based on the robusticity of the skull and long bones, and the large size of the preserved portion of the left mastoid process. Active fusion of the ectocranial sutures happens during the mid-40s to mid-50s (Meindl and Lovejoy 1985). Since the single preserved sphenofrontal suture is not fully fused, the age at death can be estimated at 25 to 40 years.

Figure 2. Photograph showing the burial in situ. Trowel points to magnetic north, scale is 20 cm. Note mano to west of burial.

Owing to the poor condition of the bone and the short amount of time available to recover the burial,

the bone was exposed, treated with PVA (polyvinyl acetate) where necessary, and removed in three blocks, 1)skull, 2) thorax and arm, 3) and legs.

The bones were carefully removed in the laboratory from the cement-hard sandy matrix, and excess PVA and sediment removed with acetate. The following is a catalog of the skeletal elements recovered. Numbers 1-5 in parentheses represent an index of element completeness (Huebner and Comuzzie 1992). 1 - only a few fragments; 2 - ≤50% intact; 3 - 50% intact; 4 - ≥75% intact; 5 - 100% complete.

Crania - frontal (2); rt. parietal (1); lt. parietal (5); lt. temporal (3); occipital (2); lt. zygomatic (1); lt. maxilla (1); UID fragments (1); mandible (1); lt. I_1; lt. P_3; several root fragments.
Arms - rt. humerus (4); rt. radius (4); rt. ulna (3); rt. capitate (4); phalanges x4 (1).
Legs - rt. femur (2); rt. tibia (2); rt. fibula (1); lt. femur (2); lt. tibia (2); UID fragments (1).

No pathologies or traumas were identified, given the generally poor condition of the bone these may have been obscured, if they did exist.

ARTIFACTS

Two artifacts, a Fairland dart point and a mano, were recovered in direct association with the burial. The Fairland point was found during the separation of the right arm from the matrix block which encased the thorax. The specimen was fabricated from a brown Edwards Plateau chert with tan mottles (Figure 3). It is thinned from the slightly concave base on both faces, side notched, with a roughly sub-triangular blade (Turner and Hester 1985). Both basal ears, which were apparently once wider than the blade, are snapped off, and there is a severe impact fracture that removed much of one face distal to the notching. The point may have had recurved lateral edges causing an exaggerated narrow long tip. This is suggested by the small pressure flakes and edge nibbling distal to the origin of the impact fracture. The impact fracture and the occurrence in the vicinity of the chest cavity suggests that the point was possibly the cause of death. In the South Texas culture history, established by the extensive work at Choke Canyon, this point type is identified with the Late Archaic (Hall et al. 1986).

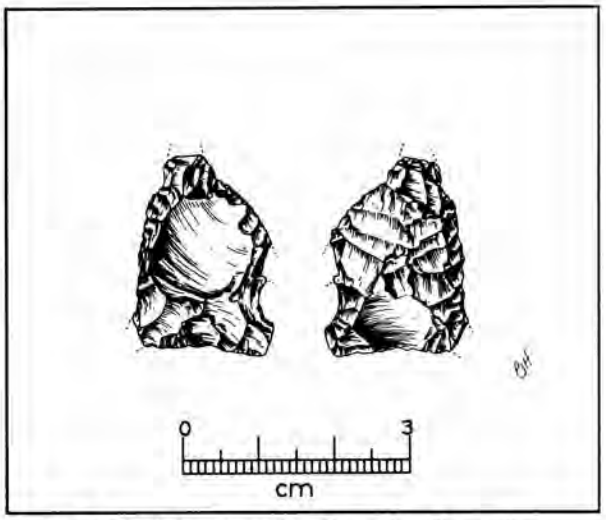

Figure 3. Fairland projectile point from the chest cavity of the 41KA89 burial.

Dimensions of this example, in mm: length*, 25.3; width, 17.9; thickness, 5.0; width at notches, 15.8; width at base*, 11.1. The weight is 7.6 gm.

The mano fragment (see Figure 2 for artifact in situ) was located roughly .20 meters west of the burial's centerline, at the same elevation. It is roughly rectangular in shape (though 5-sided), and was made from a tan fine-grained lenticular sandstone with some amount of ferruginous staining. The single grinding facet on one of the sides has a slight medial peak suggesting that it was used in a pushing motion. The mano's dimensions in mm are: length, 95.1; width, 78.1; thickness, 21.8. Weight is 268.8 gm.

STABLE ISOTOPE ANALYSIS

Stable carbon ($\delta^{13}C$) and nitrogen ($\delta^{15}N$) isotope values were determined from the bone collagen extracted from a 5.7 gm medial fragment of the right humerus. The isotopic value of plants and animals that are consumed by humans are passed up the foodweb and reflected in the human bone collagen isotopic patterns (see Huebner and Boutton [1992] for more background on stable isotopes). The $\delta^{13}C$ value of the 41KA89 burial is -16.9‰, and the $\delta^{15}N$ value is +8.5‰. The $\delta^{13}C$ value for this South Texas burial falls between the extremes for southern Texas inland and coastal dietary patterns. Twenty-one individuals from the Central Coastal Plain sites of

Blue Bayou ([41VT94] Huebner and Comuzzie 1992), and Ernest Witte (41AU36), Burial Group 2 (Huebner and Boutton 1992) have a mean $\delta^{13}C$ value of -19.0±0.81‰. The average $\delta^{13}C$ value for five humans from the coastal site 41NU173 in the vicinity of Corpus Christi Bay is -13.9±0.62‰ (Huebner and Krueger 1992). The $\delta^{15}N$ value of +8.5‰ for 41KA89 is ca. 2.0‰ lower than the average of the other populations.

Both of the stable isotope values for the 41KA89 individual suggest a dietary pattern that was absent of marine proteins, and contained more C_4/CAM plant, and less riverine animal input than seen in the two coastal plain groups further to the northeast. The increased density of CAM species such as prickly pear (*Opuntia* sp.) in the South Texas biomass may account for the difference between 41KA89 in the San Antonio drainage and the two sites to the northeast in the Guadalupe and Brazos drainages. Harrison (1985), in his analysis of other skeletal remains from the Haiduk property, noted that teeth were heavily worn in four adults with surviving dentition. Typically, wear to the occlusal surfaces of the molars is caused by the mastication of tough fibrous plants as well as by grit and soil included from pre-pottery cooking techniques. This type of wear is in general agreement with the isotopic findings.

While a complete analysis of human diet in South Texas is hardly possible from a single sample, the current data suggest that subsistence patterns in the Late Archaic of South Texas were different from those of hunter-gatherers of the Central Coastal Plain and the Gulf Coast. Further isotopic research into the floral and faunal species that contributed to prehistoric human diets is needed for refinement of the dietary differences between these three regions.

DISCUSSION

The single human skeleton recovered from site 41KA89 is one of few isolated burials that have been found in South Texas. However, it is not the first to be found on the Haiduk property in the vicinity of the San Antonio River. A single flexed interment with the head oriented southwest toward the river was found in the second terrace above the San Antonio River, south of 41KA89. This burial, damaged by a bulldozer, was designated 41KA23 (Mitchell et al. 1984) A portion of the burial was found in a prepared grave pit that was lined with white sand. Further remains were found downslope in a spoil pile along with an extensive collection of artifacts believed to be associated with the burial. They included Marcos dart points, corner-tang knives, large thin bifaces, a gorget fragment and a deer antler section. Four other human burials have been recovered from the Haiduk property between the locations of 41KA89 and 41KA23. Unfortunately, there is scant archaeological documentation for these other than that two were in extended positions oriented with the head toward the south, and one was in a flexed position with the head also to the south toward the river (Harrison 1985).

The orientation of the deceased's head toward a body of water appears to be a common characteristic of prehistoric mortuary ritual in southern and Central Texas. This trait, as is seen in five of the six reported isolated burials from Karnes County, is widespread throughout the region in isolated burials and in larger cemetery sites, as is the characteristic hands-to-the-face arm positioning (Hester 1980; Mokry 1994). A further aspect of Late Archaic mortuary ritual involved a mixture of flexed and extended body positions, whereas in the following Austin Phase of the Late Prehistoric burials are almost always flexed (Birmingham and Huebner 1991).

The Fairland dart point is suspected to be the cause of death, for several reasons. First, it was recovered several centimeters medial to the humerus, suggesting that it was within the ribcage. However, the deficiency of anatomical landmarks for the chest cavity due to poor preservation makes it difficult to exactly place the exact anatomical position of the dart point. The large impact fracture implies that the point struck bone, possibly a rib or vertebra. Unfortunately, these skeletal elements were not preserved and consequently they can not be examined for positive proof of damage. Finally, the isolated nature of this burial away from any encompassing site suggests that this individual was buried in the vicinity of his death. The large profile created by the sand pit, which extended tens of meters roughly north and south of the feature, produced no other evidence of aboriginal activity. Thus the inclusion of the two artifacts does not result from the accidental inclusion in the fill of earlier site debris. From these three facts we conclude that this projectile point was most likely the cause of death.

ACKNOWLEDGEMENTS

The authors would like to thank the landowner, Mr. Rudy Haiduk of Karnes City for alerting us to the presence of the burial and for allowing us the time to

properly excavate and study it. Our thanks also to Carol Medlar and Pam Headrick of the Texas Archeological Research Laboratory, The University of Texas at Austin who prepared the map in Figure 1 and the artifact drawing in Figure 3, respectively. Research for this paper was supported by the Texas State Higher Education Coordinating Board Advanced Research Program Grant "New Contributions to Texas Prehistory" Awarded to Dr. Thomas R. Hester Project No. 003658-184 (JAH).

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GUADALUPE TOOLS FROM FRIO AND ATASCOSA COUNTIES, SOUTH CENTRAL TEXAS

C. K. Chandler and Richard McReynolds

ABSTRACT

Four Guadalupe tools from Frio and Atascosa Counties are documented and illustrated.

INTRODUCTION

Three of these Guadalupe tools, Specimens 1, 2, and 3, were surface-collected by M. V. (Pete) Palmer from along Braceros Creek about eight miles south of Big Foot in southeast Frio County. Braceros Creek is a short tributary to San Miguel Creek. The specimens are part of a larger collection of over 850 lithic specimens collected by Mr. Palmer from this private ranch that was documented in early 1990 by C. K. Chandler. After documentation Mr. Palmer donated this collection to the Center for Archaeological Research, The University of Texas at San Antonio, (CAR-UTSA), where it is now curated. These three Guadalupe tools were borrowed from CAR for study and illustration by the authors.

The fourth specimen, D, is a surface find by Richard McReynolds from along San Miguel Creek in the southwest corner of Atascosa County in an area that has yielded mostly Archaic materials with occasional Paleo-Indian artifacts.

Guadalupe tools have been reported across much of the south central area of Texas (Hester and Kohnitz 1975; Brown 1985 Highley 1984; Turner and Schrank 1992; Street 1984), and are most commonly found in the Guadalupe and San Antonio River basins (Turner and Hester 1993) and belong to the Early Archaic time period of 3500 B.C. or earlier (ibid.).

A manufacturing sequence with illustrations for the making of Guadalupe tools and a numbered series of standard measurements is found in Brown (1985). This information is also in Turner and Hester (1993). The system of measurements used in this paper follow these guidelines. Maximum dimensions are in millimeters and weights are in grams.

THE ARTIFACTS

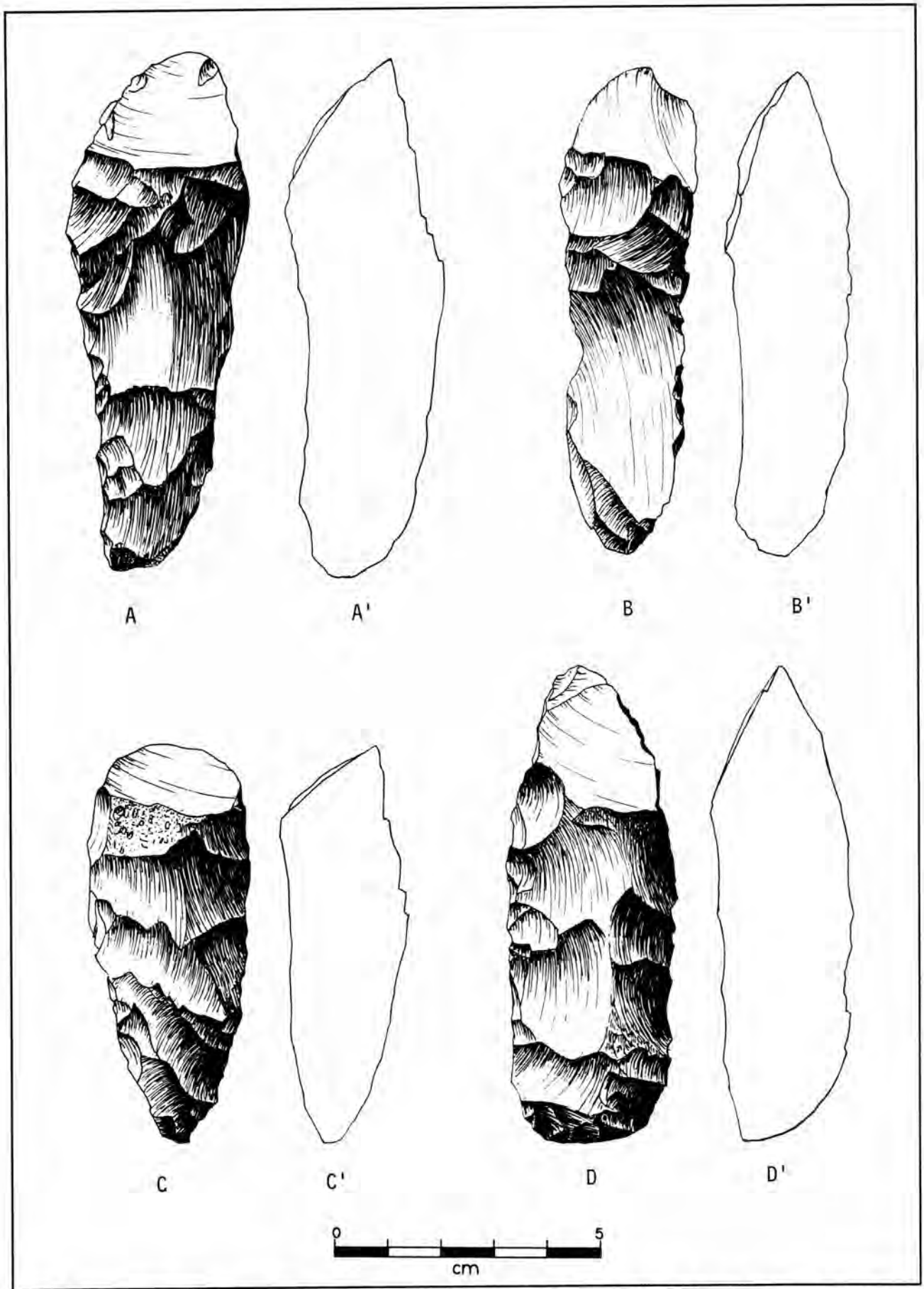
Specimen 1 (Figure 1, A, A′) is of mottled tan, medium quality chert. It is basically triangular in cross section. Measurements are: Dorsal Length, 98 mm; Ventral Length, 75 mm; Bit Width, 30 mm; Tool Width, 35 mm; Thickness, 35 mm; Facet Length, 22 mm; Bit Ventral Angle, 21°; Bit Spline Angle 60°; Weight, 85 grams.

Specimen 2 (Figure 1, B, B′) is of uniformly tan, medium quality chert. It is basically triangular in cross section. Measurements are: Dorsal Length 91 mm; Ventral Length 74 mm; Bit Width, 23 mm; Tool Width, 26 mm; Thickness, 26 mm; Facet Length, 22 mm; Bit Ventral Angle, 40°; Bit Spline Angle, 57°; Weight, 52 grams.

Specimen 3 (Figure 1, C, C′) is of light tannish gray, fair to good quality chert. It is triangular in cross section. Measurements are: Dorsal Length, 74 mm; Ventral Length, 62 mm; Bit Width, 26 mm; Tool Width, 30 mm, Thickness, 22 mm, Facet Length, 13 mm; Bit Ventral Angle, 45°; Bit Spline Angle, 66°; Weight, 54 grams.

Specimen 4 (Figure 1, D, D′) is of uniformly tan medium quality chert. It is triangular in cross section. Measurements are: Dorsal Length, 89 mm; Ventral

Texas map showing Atascosa County (filled) and Frio County (striped).



Figue 1. Guadalupe tools from Frio and Atascosa Counties. A, A′, B, B′, C, C′ from Braceros Creek in Frio County, M. F. (Pete) Palmer collection. D, D′ from San Miguel Creek in Atascosa County, Richard McReynolds' collection. (A′, B′, C′ and D′ are side outlines of artifact.)

Length, 62 mm; Bit Width, 23 mm; Tool Width, 31 mm; Thickness, 24 mm; Facet Length, 26 mm; Bit Ventral Angle, 30°; Bit Spline Angle, 60°; Weight, 80 grams.

CONCLUSIONS

Microwear examinations of three caches of Guadalupe tools from south Texas (Brown 1985) and replicative experiments provide considerable information about these tool types. Brown proposes they are primarily woodworking tools subjected to hard work.

ACKNOWLEDGMENTS

We wish to thank the Center for Archaeological Research, The University of Texas at San Antonio for the loan of the specimens from the "Pete" Palmer collection.

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COASTAL BEND ARCHEOLOGICAL SOCIETY

Another local archaeological society our readers may find interesting to participate in is the Coastal Bend Archeological Society, a very active group.

Their monthly meeting the first Wednesday of each month. The meetings will be in the Hilltop Community Center, Corpus Christi, at 7:00 o'clock p.m.

Contact Larry Beaman, 303 Rolling Acres Dr., Corpus Christi, Texas 78410 to confirm time and place and for further information.

SURFACE COLLECTIONS AS INDICATORS OF CHANGE IN COASTAL HUMAN ECOLOGY

Kim A. Cox

ABSTRACT

Archaic points in surface collections from estuarine sites along the central Texas coast are examined for patination and placed into a local chronology. Estuarine sites are plotted based on the appearance of time-diagnostic points found at those sites. Temporal shifts in human procurement of estuarine resources throughout the Holocene are identified and discussed.

INTRODUCTION

In his report on the White's Point archaeological area of upper Nueces Bay in San Patricio County, Robert A. Ricklis examined prehistoric human coastal ecology in terms of exploitable estuarine biomass. Radiocarbon dating of intensive estuarine occupations initially revealed an apparent periodicity to human exploitation throughout the Holocene (Ricklis and Cox 1991), which Ricklis (1993, 1995) argues was directly related to the productivity of the estuaries. During periods of sea level stillstand, the formation of barrier islands reduced the interchange of fresh and marine waters, thereby trapping nutrients, increasing primary productivity, and creating the shallow, low turbidity areas necessary both for large shellfish communities and as nursery grounds for many species of fish.

In support of his theory of periodic coastal occupation, Ricklis (1993) noted that time-diagnostic artifacts from the White's Point area fell within the general periods for which radiocarbon dates existed.

Since the publication of that report, all radiocarbon dates from the central Texas coast have only served to reinforce the original theory insofar as periodicity is concerned (see Figure 1). Because of the scarcity of lithic artifacts often found in archaeological shell deposits, an effort was made to locate and examine substantial surface collections to see whether the pattern of time-diagnostic artifacts continued to be consistent with the radiocarbon data.

Two significant surface collections were chosen for (a) their large number of projectile points from the Corpus Christi/Nueces Bays, Aransas Bay and Copano Bay areas and (b) the meticulous accuracy taken by the collectors in locating and describing their sites. In addition, both of these collections were made prior to 1940, when the U.S. Army Corps of Engineers completely destroyed several major sites along Corpus Christi Bay, and prior to other sites becoming seriously looted or eroded. From the notes in both collections, many hours were apparently spent surveying large areas of the Coastal Bend for sites. Because of this, the collections are probably fairly accurate representations of the archaeological sites that once existed in this area.

The first of these is the George C. Martin col lection that is permanently housed at the Witte Museum in San Antonio. Most of this collection dates to the late 1920s and early 1930s. Remarkably, there are a large number of extremely valuable photographs showing massive shell middens (such as the Kent-Crane site [41AS3] on Copano Bay) as they existed prior to modern human intervention. Also, in association with Wendell H. Potter, George C. Martin left detailed maps of sites along Copano and Aransas Bays and documented all of his artifacts.

The second major surface collection is that belonging to Dr. John W. Tunnell of Taft, Texas, compiled mostly in the 1930s. The paper documentation of this collection is truly impressive, with each of several hundred points described, labeled, and meticulously located on maps drawn by Dr. Tunnell's step-father, Howard F. Pape. Each site is given a number and is described in detail on a separate sheet of typewritten paper that frequently includes a hand-drawn map. The collection also contains photographs and probably the most elaborate drawings in existence of Webb Island (41NU1), Ingleside Cove, the City of Corpus Christi waterfront and the north side of Corpus Christi Bay prior to major dredging and construction activities beginning in the 1940s. Like Martin, Tunnell and Pape explored and collected points over a wide area that included Copano Bay, Corpus Christi Bay, Nueces Bay, the Upper Laguna Madre and the Cayo del Oso.

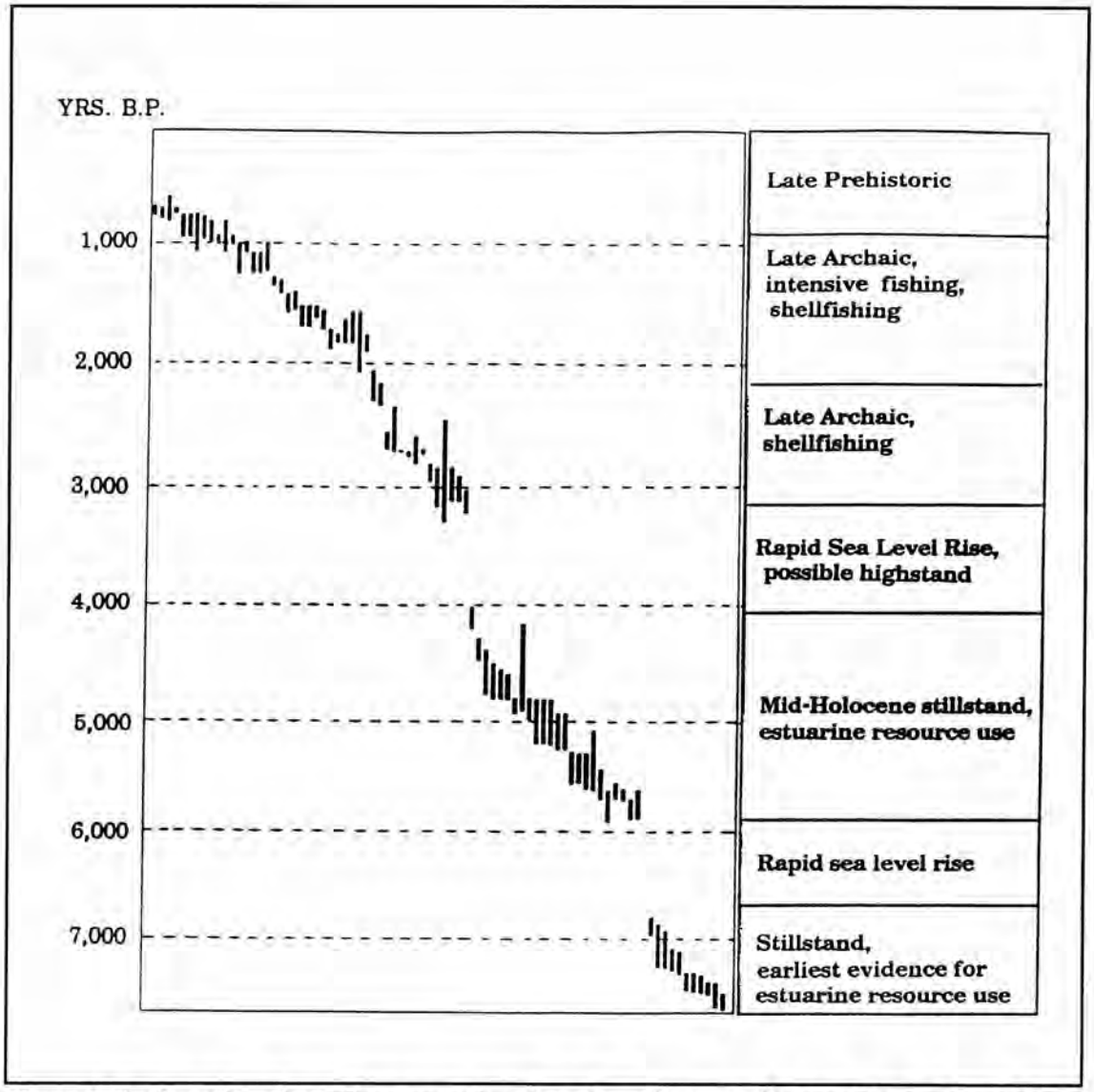

Figure 1. Radiocarbon dates from estuarine sites along the central Texas Coast, after Ricklis (1995).

METHODS AND RESULTS

From the descriptions left by these early collectors, it was easy to distinguish estuarine and non-estuarine sites based on the appearance of large shellfish deposits at those sites. For purposes of this article, points from these estuarine sites were added to points in collections from excavated estuarine sites (41NU221, 41NU184, 41SP120 and the White's Point area) and other smaller surface-collected locations (Cayo del Oso, 41NU46 and 41NU37). Although recorded, the points from sites that do not evidence intensive use of estuarine resources, with the exception of Paleo-Indian points, have not been included in this article. Paleo-Indian points from coastal settings have been included in the following patination and relative frequency analyses even though there are no dated shell deposits from this time period. Their association with the intensive use of estuarine resources remains questionable.

Time-diagnostic points were assigned to their respective time periods, degree of patination was duly noted, and sites believed to involve the intensive use of estuarine resources (determined from personal knowledge or the site descriptions of the collectors) were located on maps by time periods in order to identify temporal shifts in site locations (Figure 2[a]-[h]). Out of approximately 500 potential dart points from estuarine locations from all collections, types were identified in the cases of 382 points (see Table 1), out of which 362 were assigned to time periods (see Table 2). No major morphological type appearing

Figure 2(a). Early Archaic I.

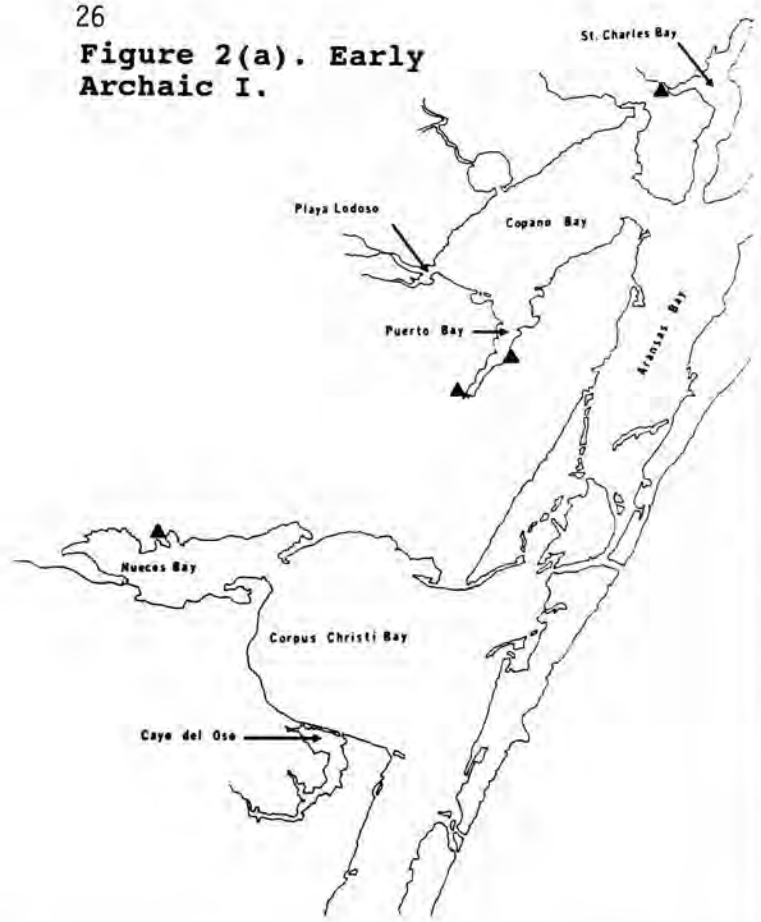

Figure 2(b). Early Archaic II.

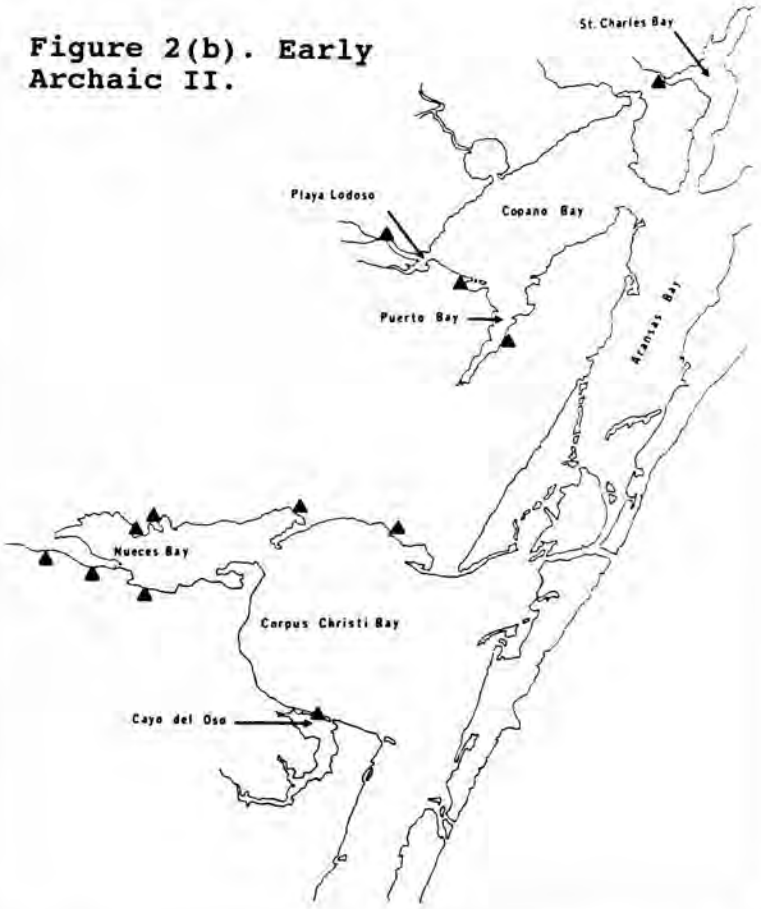

Figure 2(c). Middle Archaic I.

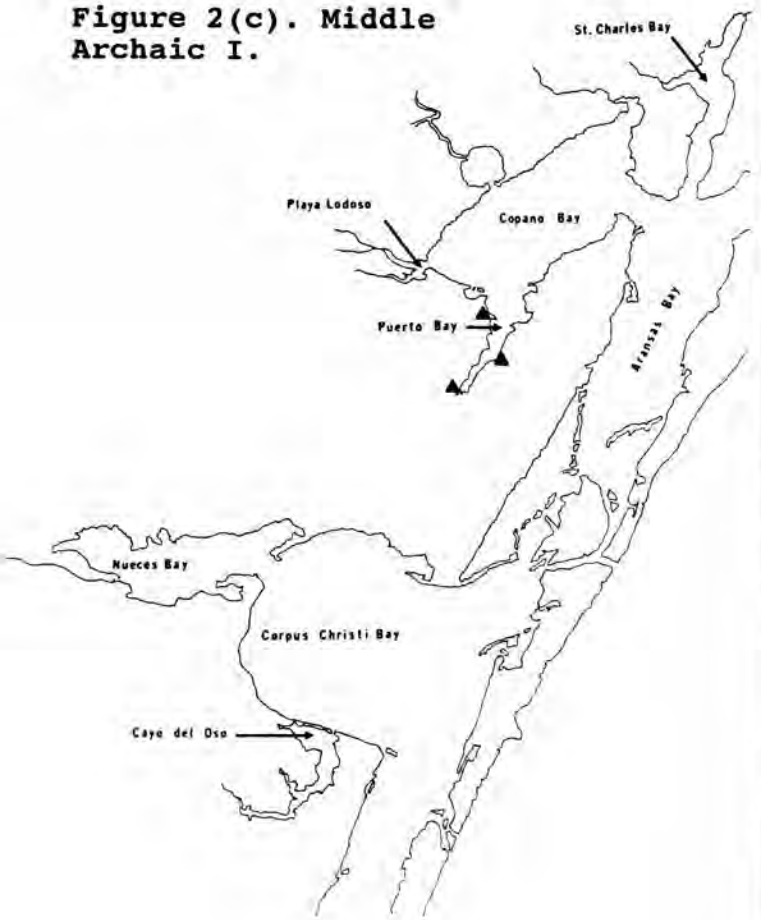

Figure 2(d). Middle Archaic II.

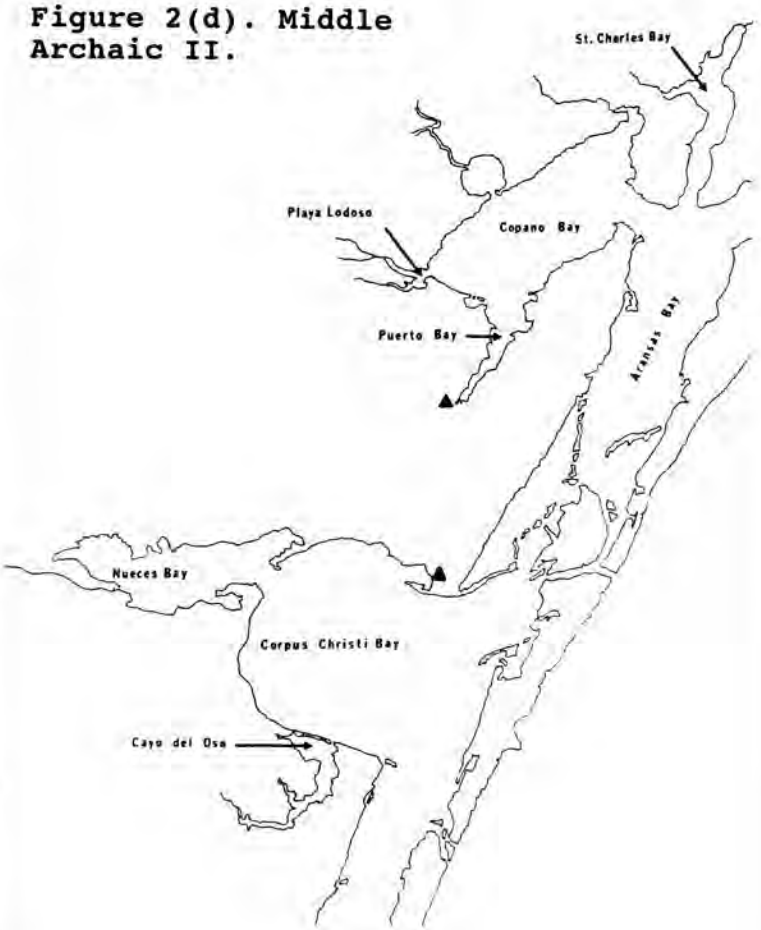

Figure 2(e). Late Archaic I.

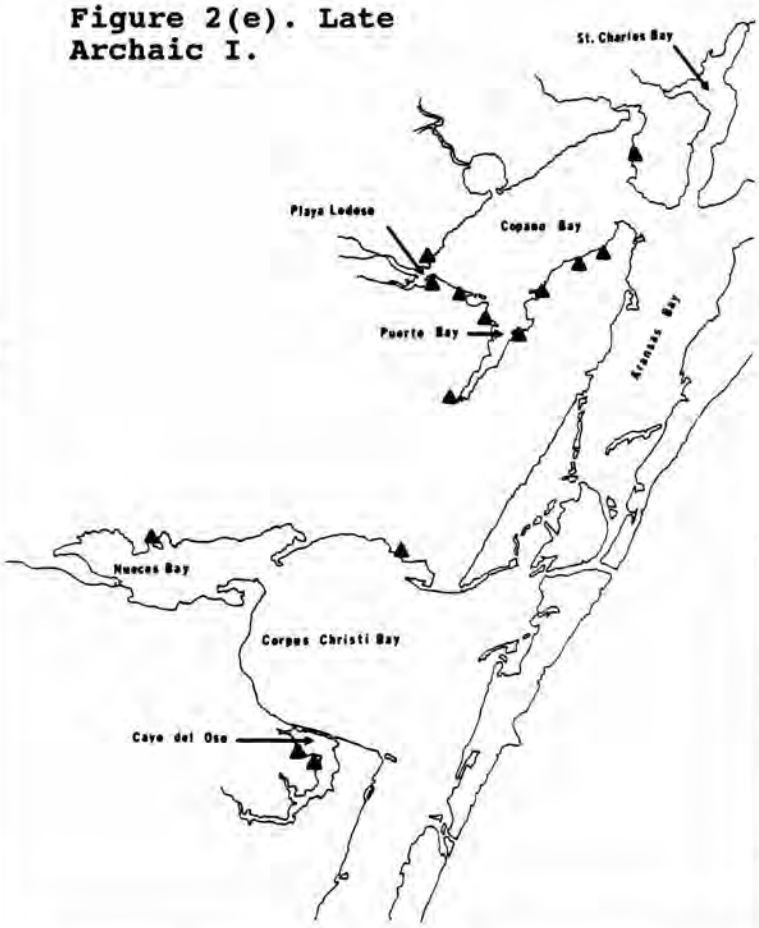

Figure 2(f). Late Archaic II.

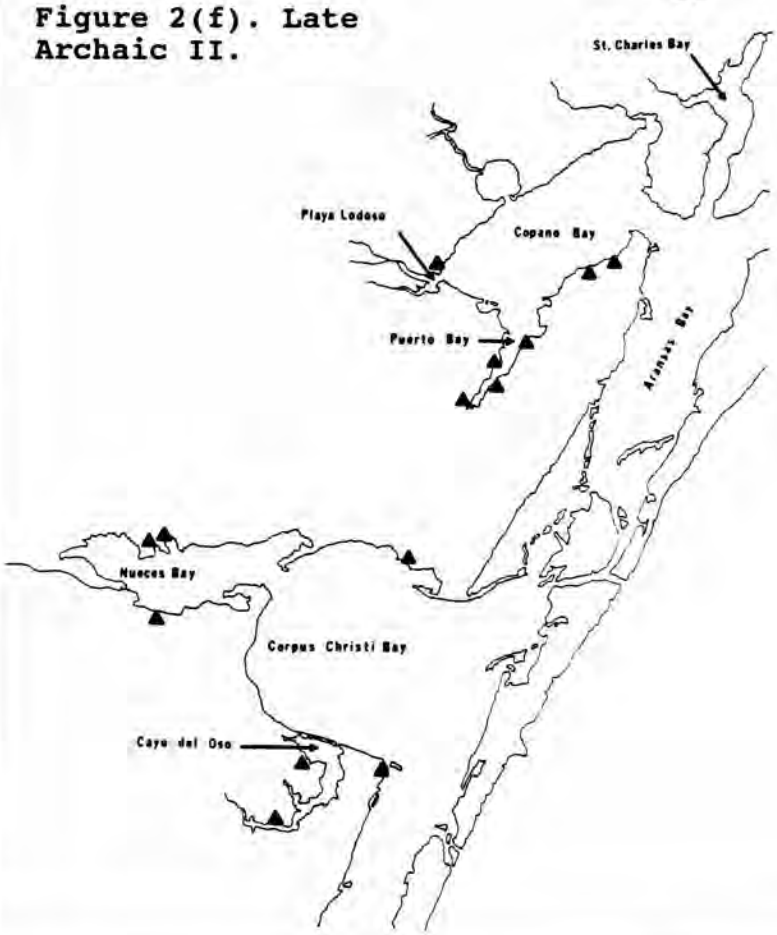

Figure 2(g). Terminal Archaic.

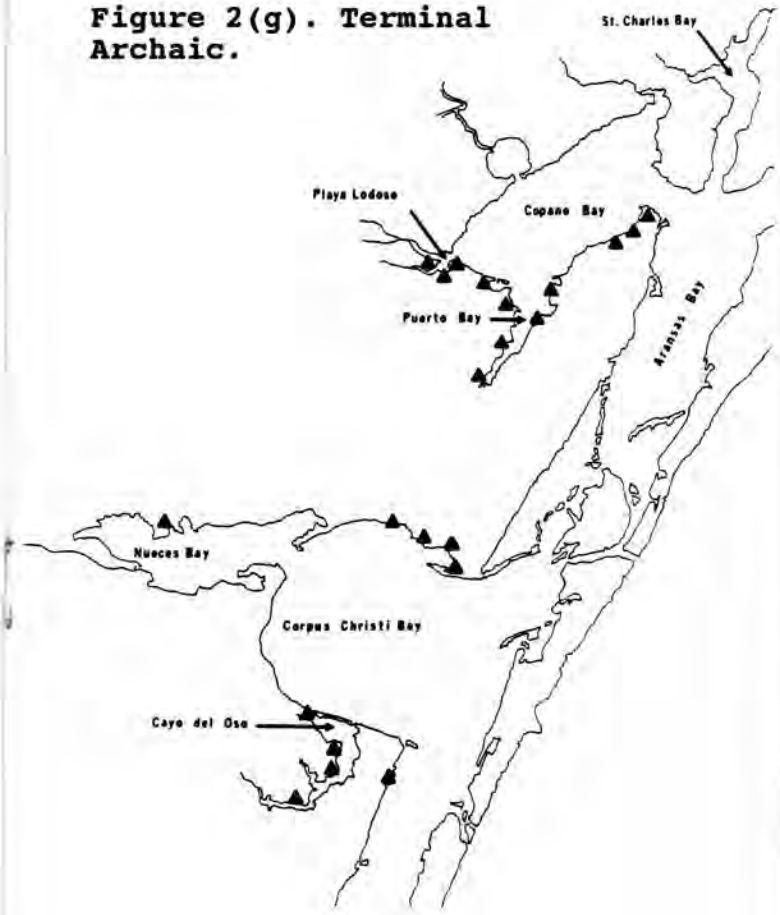

Figure 2(h). Late Prehistoric.

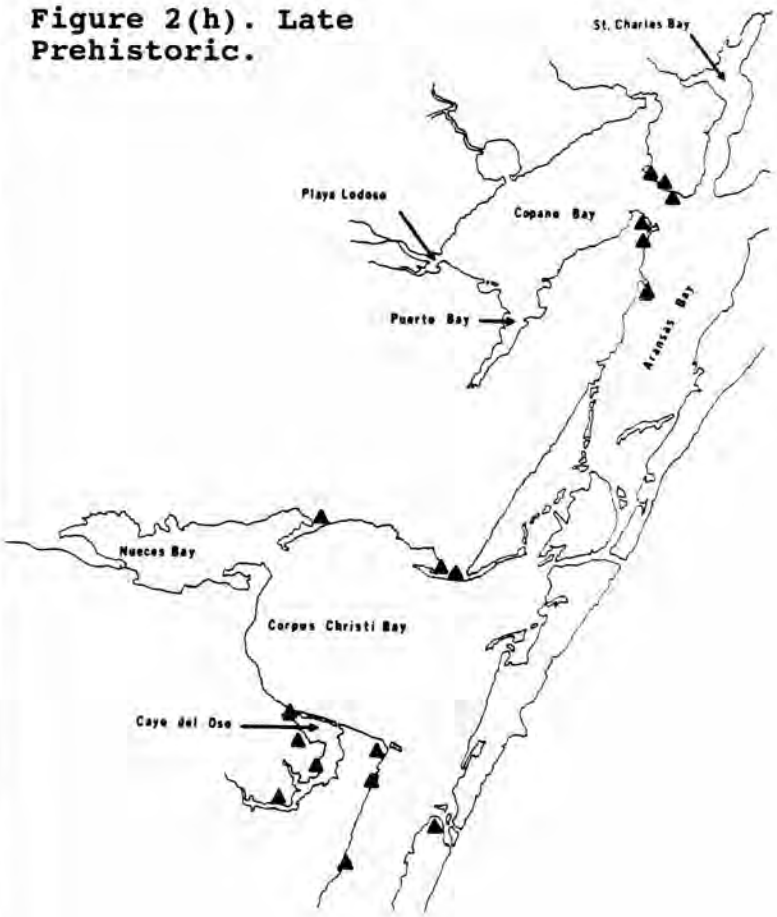

Table 1. Total number of all points from estuarine contexts with degree of patination.

Point Type	Number	Heavy Pat.	Med. Pat.	Light/No Pat.
Abasolo	8	4	2	2
Bell/Andice	9	5	3	1
Big Sandy	1	1		
Bulverde	6	1	2	3
Catan	20	2	3	13
Corner-Notched	4	2	2	
Darl	9			7
Desmuke	1			1
Early Triangular	18	11	2	5
Ellis	2	1		1
Ensor	57	1	2	49
Fairland	1			1
Frio	2			2
Gary	2			1
Godley	6		1	5
Gower	3	2	1	
Hoxie	3	2	1	
Kent	31	2	2	25
La Jita	1	1		
Lanceolate	4	4		
Lange	2			2
Lerma	2	1		
Marcos	6			6
Matamoros	63	9		44
Montell	2			2
Morhiss	16		7	7
Morrill	3	2	1	
Nolan	1	1		
Pandora	3			3
Pedernales	1			1
Pentagonal	15	1	1	13
Plainview	5	4		
Refugio	8	2	2	4
San Patrice	2	2		
Stemmed (untyp.)	8	8		
Tortugas	33	19	8	4
Travis	10		8	1
Uvalde	7	3	1	1
Wells	3	2	1	
Williams	3		1	2
Yarbrough	1	1		
Zephyr	2			2

Table 2. Time Periods and Associated Dart Point Types from Sites Along Central Texas Coast Bays.

Late Paleo-Indian	Big Sandy (Fig. 3:A) - 1 (Turner and Hester 1993)
10,000 - 8000 B.P.	Early Stemmed - 2 (Turner and Hester 1993)
	Lanceolate (with edge grinding) - 4
	Plainview - 5 (Turner and Hester 1993)
	San Patrice - 2 (Turner and Hester 1993)
	Stemmed (untyp. with stem grinding) - 8
Early Archaic I	
8000 - 6000 B.P.	Early Corner-Notched (Fig. 3:B) - 4 (Michael B. Collins, personal communication; Collins and Ricklis 1995)
	Gower (Fig. 3:C) - 3 (Prewitt 1985; Turner and Hester 1993)
	Hoxie (Fig. 3:D) - 4 (Prewitt 1985; Turner and Hester 1993)
	La Jita - 1 (Turner and Hester 1993)
	Wells - 3 (Prewitt 1985; Turner and Hester 1993)
Early Archaic II	Bell/Andice (Fig. 3:E,F) - 9 (Ricklis 1988, 1993; Turner and Hester 1993)
6000 - 4600 B.P.	Early Triangular (Fig. 3:G,H,I) - 18 (Turner and Hester 1993)
	Pandale (Fig. 4:A) - 1 (Turner and Hester 1993)
	Tortugas (Fig. 3:J) - 33 (Ricklis 1988, 1993)
	Uvalde (Figs. 4:K,L) - 7 (Prewitt 1985)
Middle Archiac I	Nolan - 1 (Prewitt 1985)
4600 - 4000 B.P.	Travis - 10 (Prewitt 1985)
Middle Archaic II	Bulverde (Fig. 4:B,C) - 6 (Prewitt 1985)
4000 - 3000 B.P.	Pedernales (Fig. 4:D) - 1 (Prewitt 1985)
Late Archaic I	Fairland (Fig. 4:E) - 1 (Prewitt 1985)
3000 - 1800 B.P.	Kent (Fig. 4:F,G,H,I,J) - 31 (Campbell 1952; Cox and Smith 1988; Davis 1991; Ensor et al. 1991; Ricklis 1993, 1995; Story 1990)
	Lange (Fig. 5:A,B) - 2 (Prewitt 1985)
	Marcos (Fig. 5:H) - 6 (Prewitt 1985; Ricklis 1993; Weinstein 1994)
	Montell (Fig. 6:A) - 2 (Prewitt 1985; Weinstein 1994)
	Morhiss (Fig. 5:C,D,E,F) - 16 (Campbell 1947, 1952; Cox and Smith 1988; Fox 1979; Turner and Hester 1993; Weinstein 1994)
	Williams - 3 (Prewitt 1985)
	Zephyr (Fig. 6:B,C) - 2 (Smith n.d.)
Late Archaic II	Ellis (Fig. 6:J,K) - 2 (Turner and Hester 1993)
1800 - 1400 B.P.	Ensor (Fig. 6:E,F,G) - 57 (Campbell 1952; Huebner 1988; Prewitt 1985; Weinstein 1994)
	Frio (Fig. 6:H) - 2 (Prewitt 1985)
	Gary (Fig. 6:I) - 2 (Robert A. Ricklis, personal communication; Story 1990)
	Godley (Fig. 6:D) - 6 (Turner and Hester 1993)
	Pentagonal (untyp.) (Fig. 7:D) - 15 (Ricklis 1993)
Terminal Archaic	Catan (Fig. 7:A,B,C) - 20 (Headrick 1993; Ricklis 1988, 1993)
1400 - 900 B.P.	Darl - 9 (Prewitt 1985)
	Matamoros (Fig. 7:E,F,G,H) - 63 (Headrick 1993; Ricklis 1993)

with any frequency went unidentified. Degree of patination on untyped points was roughly equivalent to that on all typed points, suggesting that no time period was underrepresented due to an inability to recognize points from that period.

Chronology

Most dart points were identified and assigned to their respective time periods using the typology set out in Turner and Hester (1993) and Davis (1991) and the chronology set out in Prewitt (1985) and Turner and Hester (1993). Although the number of years in the time periods can only be gross estimates, they are probably accurate enough for estimation of relative abundance of projectile points (i.e., the average number of points found per one hundred years of the time period). The time periods and their total number of associated diagnostic dart points from estuarine sites are presented in Table 2. Early Holocene sequences are after Turner and Hester (1993). Middle and Late Holocene time period dates are from Prewitt (1985) as modified for coastal time sequences based on information presented in Ricklis (1993) and Weinstein (1994). All authorities relied upon for assigning respective points to time periods are also listed in Table 2.

Several projectile point types deserve special mention. The generic points assigned to the Late Paleo-Indian period, although not typed, were heavily patinated, basally ground and either lanceolate or stemmed. For these reasons, they can be assigned to the Late Paleo-Indian period with a fair degree of confidence.

The Early Corner-Notched points (Figure 3:B) are assigned to their respective time period based on information provided by Michael B. Collins (personal communication), who considers this to be a different, and slightly later, type from the Late Paleo-Indian Wilson point (see, also, discussion in Collins and Ricklis 1995). These Early Archaic points tend to be narrower than Wilson points, have no edge grinding, and are somewhat different in their flaking pattern, with regular basal thinning scars and evenly converging blade thinning scars. This point is also distinguishable from the Late Archaic Ensor type (Figure 6:E,F,G), which typically has a shorter blade and a shorter stem. Additionally, in the surface collections examined, the four examples of this point showed heavy to medium patination whereas the Ensor points almost always had light to no patination.

Turner and Hester (1993) claim that the Tortugas point (Figure 3:J) is Late Middle Archaic ("and perhaps earlier") and has been found in association with burials radiocarbon dated ca. 850 B.C. - 600 B.C. However, when added to the patination graph (Figure 8), Tortugas fits very closely with points from Early Archaic II and is far more heavily patinated than the Late Archaic Morhiss and Kent types, which probably fall within the 850 B.C. - 600 B.C. time range. It is also important to note that the patination on Tortugas correlates even less with the morphologically similar, but slightly smaller, Matamoros type. The preponderance of heavily patinated points indicates that Tortugas probably saw its greatest use in the Coastal Bend area around the time of the Early Triangular point. In addition, Ricklis (1988, 1993) excavated a Tortugas point in a radiocarbon-dated stratum (5919-5336 B.P.) that also produced two Bell points. For these reasons, Tortugas has been tentatively included in the Early Archaic II.

The Kent point (Figure 4:F,G,H,I,J) is a somewhat generic type denoting an often crudely made, usually contracting stem point. Point typologists characterize Kent as typically being small with small stems (e.g., Davis 1991; cf. Turner and Hester 1993) somewhat similar in appearance to the Gary point (Figure 6:I), but the morphological range is apparently quite wide (see Campbell 1947, 1952; Ricklis 1993). This point type has been assigned to the Late Archaic I time period based on its appearance in association with a dated stratum (3156-2873 B.P.) from 41SP177 (Ricklis 1993) and its appearance in the Kent-Crane collection (Campbell 1952) which has been dated to after ca. 2800 B.P. (Cox and Smith 1988; Ricklis 1993). Weinstein (1994) assigns this point to an earlier phase, but offers no evidence for doing so. Both Ensor et al. (1991) and Story (1990) imply that coastal Kent points fall somewhere within this general time frame. So far, Kent points have not appeared on the central Texas coast in any context that has been firmly dated to much earlier than ca. 3000 B.P.

The large-stemmed Morhiss points (Figure 5: C,D,E,F) are assigned to the Late Archaic I time period based on their similarity to points recovered from the lower level of Kent-Crane, 41AS3 (Campbell 1952), which dates to after 2800 B.P. (Cox and Smith 1988; Ricklis 1993). Fox (1979) reports finding Morhiss points in a stratum that produced a radiocarbon date that, when adjusted (2750 $\pm$ 370 or 2826

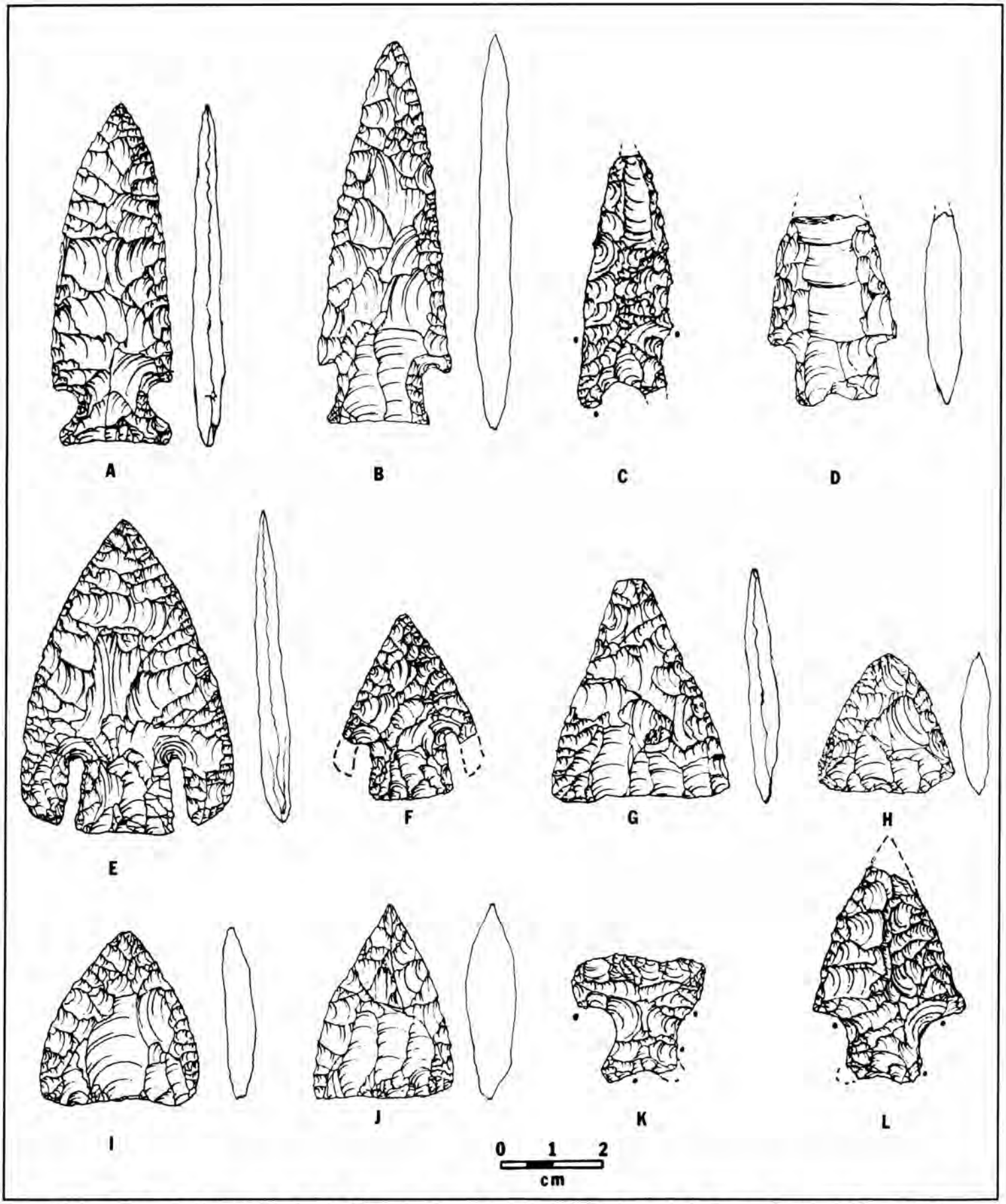

Figure 3. Late Paleo-Indian: **A, Big Sandy (Tunnell).** Early Archaic I: **B, Early Archaic Corner-Notched (Martin); C, Gower (41SP156); D, Hoxie (Tunnell); E, Bell/Andice (Tunnell); F, Bell (41SP148); G, Early Triangular (Tunnell); H, Early Triangular (Tunnell); I, Early Triangular (Tunnell); J, Tortugas (Tunnell); K, Uvalde (41SP15); L, Uvalde (41SP154).**

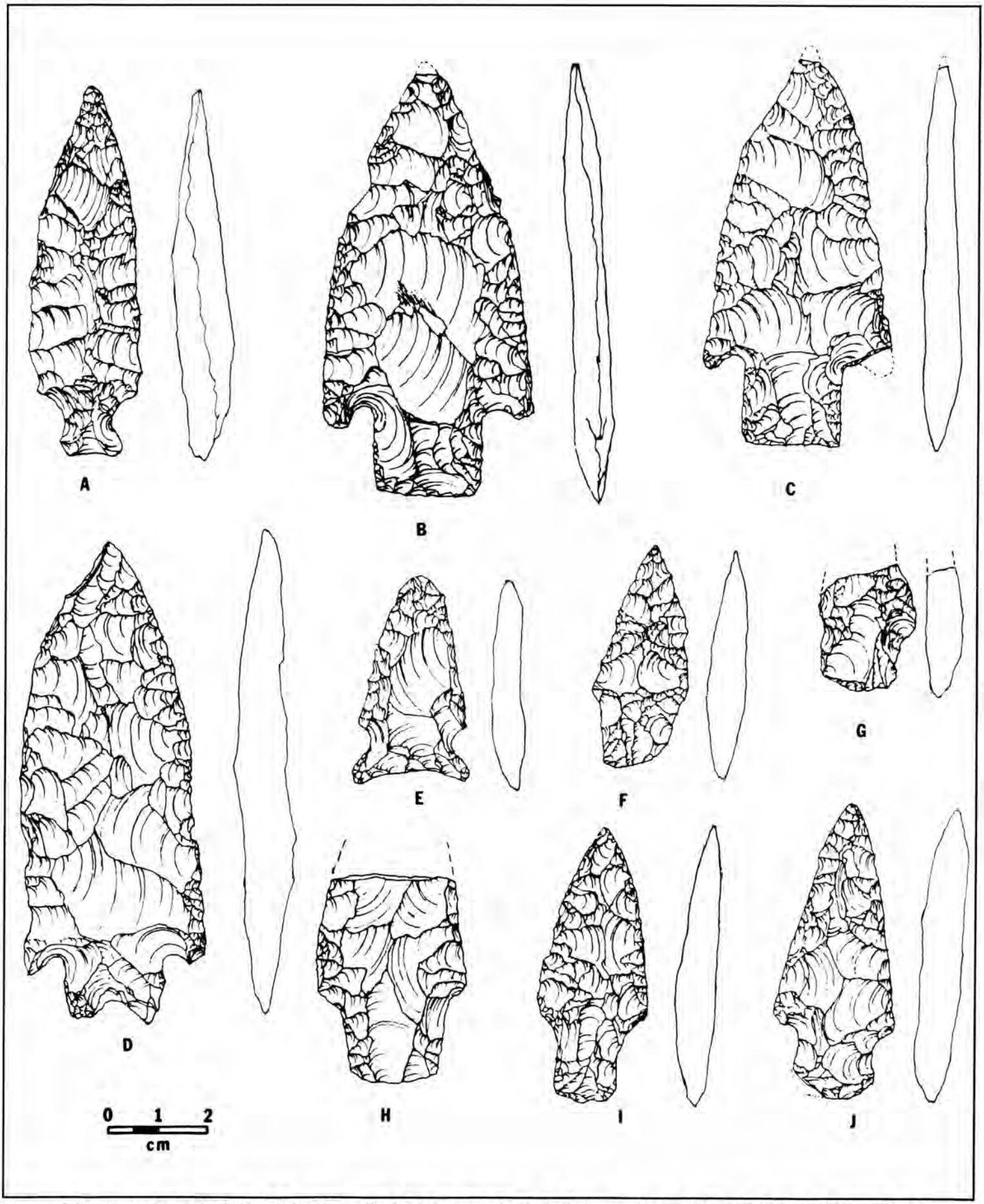

Figure 4. Early Archaic II: A, Pandale (Tunnell). Middle Archaic II: B, Bulverde (Tunnell); C, Bulverde (Tunnell); D, Pedernales (Martin). Late Archaic I: E, Fairland (Tunnell); F, Kent (Tunnell); G, Kent (Tunnell); H, Kent (41SP177); I, Kent (Tunnell); J, Kent (Tunnell).

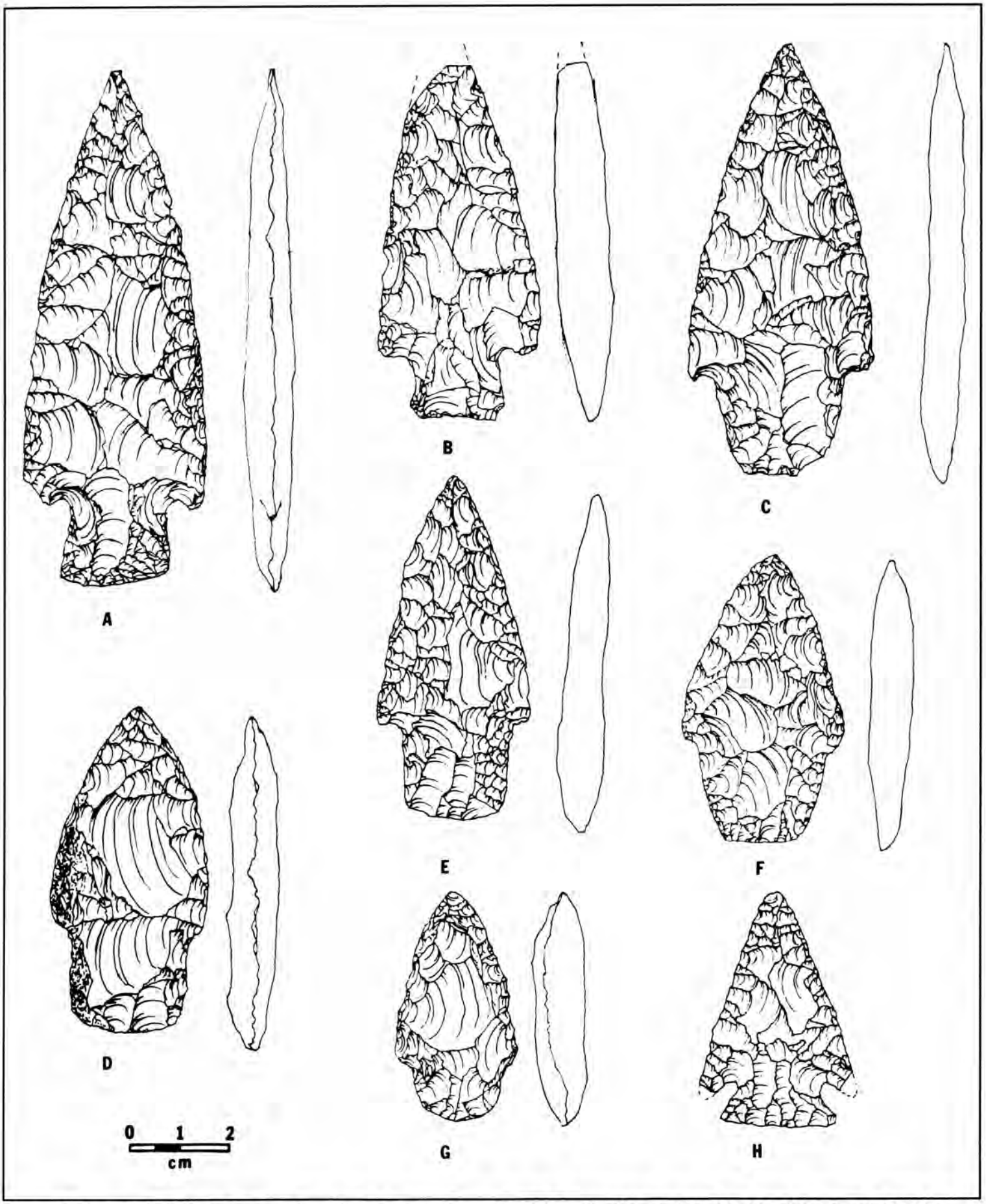

Figure 5. Late Archaic I: A, Lange (Tunnell); B, Lange (Tunnell); C, Morhiss (Martin); D, Morhiss (Martin; E. Morhiss (Tunnell; F, Morhiss (Tunnell); G, old Morhiss-like (Tunnell); H, Marcos (41SP177).

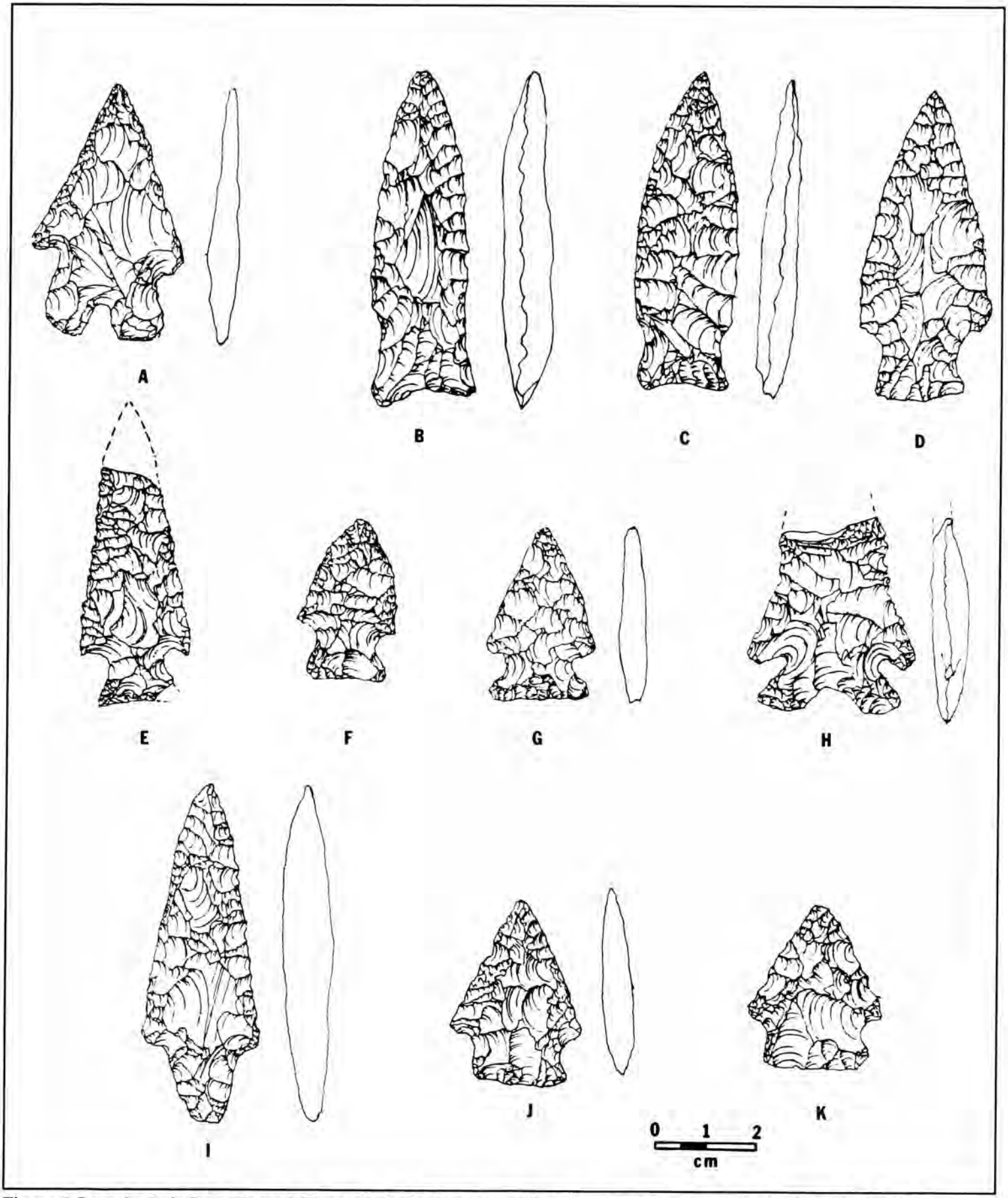

Figure 6. Late Archaic I: A, Montell (Tunnell); B, Zephyr (Tunnell); C, Zephyr (Tunnell). Late Archaic II: D, Godley (41SP177); E, Ensor (41SP154); F, Ensor (41SP154); G, Ensor (Tunnell); H, Frio (Tunnell); I, Gary (Tunnell); J, Ellis (Tunnell; K, Ellis (41SP153).

±373 B.P.), falls at the early end of this time period. These Late Archaic points are almost certainly a different point type from a smaller, earlier Morhiss-like point (Figure 5:G). Two of these older points (both heavily patinated) are found in the Tunnell collection from St. Charles Bay but have not been included in Table 2 due to uncertainty as to their temporal associations.

The two Zephyr points (Figure 6:B,C; see, also, Davis 1991:p. 184) were assigned to the Late Archaic I based on a previously unreported and uncorrected radiocarbon date of B.P. 2720±70 (Tx-6087) on human bone from a burial (41NU37) in which a Zephyr point was found imbedded in a human scapula (Smith n.d.). Highley (1980:Figure 2[n]) also reports what is probably a Zephyr point from Alazan Bay along with several other points that are distinctly Late Archaic.

The small, Pentagonal dart point (Figure 7:D) is assigned to the Late Archaic II based on an associated radiocarbon date of 1816-1749 B.P. from 41SP153 (Ricklis 1993) and the virtual absence of patination. This often crudely made point is so common on Late Archaic sites in the Coastal Bend area (particularly in the Oso Creek drainage system) that it certainly deserves future consideration as a distinct type.

Catan (Figure 7:A,B,H) and Matamoros (Figure 7:C,E,F,G) points are assigned to the Terminal Archaic based on their clear association with radiocarbon-dated material from 41SP120 (Ricklis 1993). Nevertheless, these points are somewhat problematic. Turner and Hester (1993) suggest that they are Late Archaic to Late Prehistoric. However, both were found in a well-dated Terminal Archaic context (ca. 950 B.P.) at 41SP120 and did not appear in the extensive Late Prehistoric occupation above that level

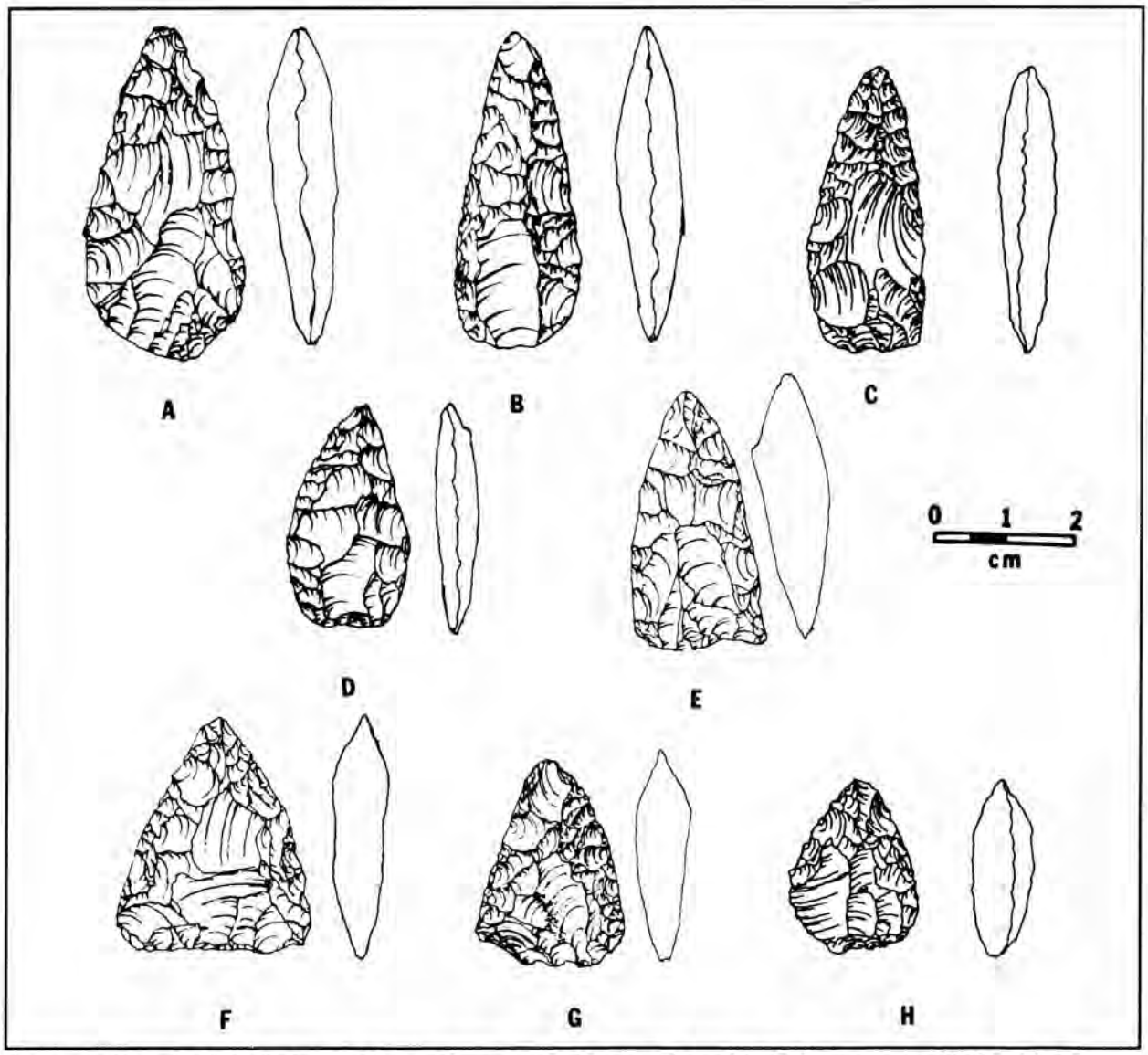

Figure 7. Terminal Archaic: A, Catan (Tunnell); B, Catan (Tunnell); C, Matamoros (41SP120); D, Pentagonal (Tunnell); E. Matamoros (Tunnell); F, Matamoros (Tunnell); G, Matamoros (Tunnell); H, Catan (41SP120).

(Ricklis 1993, 1995). Headrick (1993) reports these points as the only dart points in what is almost certainly a Terminal Archiac context from 41NU11. And the percentage of patination on these points (see Figure 8) indicates that they tend to be fairly recent in origin. The bimodal nature of the patination on Matamoros, however, indicates that the Tortugas and Early Triangular types may have some morphological overlap with this point (and perhaps vice versa). The ones with slight to no patination tend to be thick and crudely made, whereas the few examples with heavy patination tend to be thinner and more skillfully crafted. This is a chronic problem that is encountered when determinations such as the difference between Tortugas and Matamoros points are made based solely on the size of the projectile point without any associational context.

Patination

In the event that patination may be material specific, patination of points was recorded only for those made of chert. Also, heat-treated or fire-damaged points were not included in the analysis because subjecting points to heat appears to affect their rate and degree of patination. Only three degrees of patination were noted: (1) slight to none, (2) moderate, and (3) heavy. The division of all relevant projectile points into one of these three categories is presented in Table 3. Number of total points listed is the number for which patination was noted. Assigning a value of one to light or none, two to moderate and three to heavy, the average relative patination of points is presented in Figure 8.

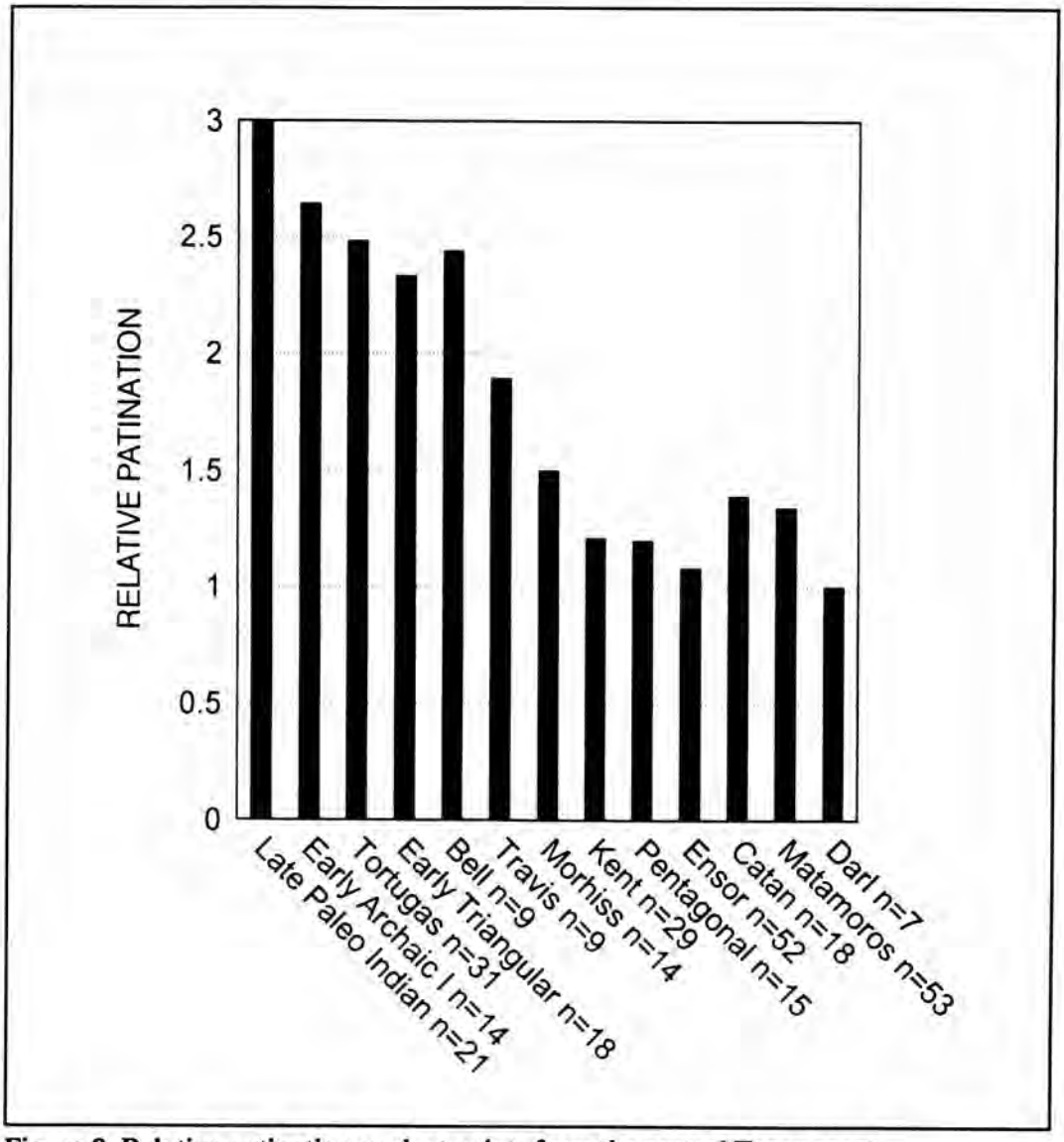

Figure 8. Relative patination on dart points from the central Texas coast.

Table 3. Patination of points by time periods.

Type	Number	Heavy Pat.	Mod. Pat.	Light/No Pat.	Period
Plainview	4	4			
San Patrice	2	2			Late
Big Sandy	1	1			Paleo
Early Stemmed	2	2			Indian
Lanceolate	4	4			
Stemmed (untyp)	8	8			
Corner-Notched	4	2	2		
Gower	3	2	1		
Hoxie	3	2	1		Early
Wells	3	2	1		Archaic I
La Jita	1	1			
Bell/Andice	9	5	3	1	
Early Triangular	18	11	2	5	Early
Pandale	1			1	Archaic II
Tortugas	31	19	8	4	
Uvalde	5	3	1	1	
Nolan	1	1			Middle
Travis	9		8	1	Archaic I
Bulverde	6	1	2	3	Middle
Pedernales	1			1	Archaic II
Williams	3		1	2	
Marcos	6			6	
Montell	2			2	Late
Morhiss	14		7	7	Archaic I
Kent	29	2	2	25	
Fairland	1			1	
Lange	2			2	
Zephyr	2			2	
Gary	1			1	
Ellis	2	1		1	
Frio	2			2	Late
Godley	6		1	5	Archaic II
Ensor	52	1	2	49	
Pentagonal	15	1	1	13	
Darl	7			7	Terminal
Catan	18	2	3	13	Archaic
Matamoros	53	9		44	

Relative Frequency

Relative frequency of dart points by time period was calculated based on the total number of points from estuarine contexts divided by the number of one hundred year intervals in the time period. Total numbers of points from estuarine sites are presented in Table 2. Relative frequency of points from estuarine sites is presented graphically in Figure 9.

Location of Sites

Once points had been assigned to time periods, an attempt was made to identify a temporal range for areas of heavy estuarine exploitation on the basis of the diagnostic artifacts appearing at those sites. To this end, all Archaic and Late Prehistoric points, as well as sites producing large quantities of pottery in the Martin and Tunnell collections (in both collections, the existence and abundance of pottery is meticulously noted), were plotted on maps by their respective time periods. Sites were identified by concentrations of points and/or pottery and by the appearance of large quantities of marine shell. Added to these were points and sites that have been previously reported in other literature (see Campbell 1947, 1952, 1956, 1958; Headrick 1993; Ricklis 1988, 1993, 1995; Smith n.d.).

Early and Middle Archaic areas of concentration are plotted on Figure 2(a)-(d), Late Archaic on Figure 2(e) and (f), Terminal Archaic on Figure 2(g), and Late Prehistoric on Figure 2(h). Late Paleo-Indian points, relatively rare along the coast, were found along the western shore of St. Charles Bay, the south

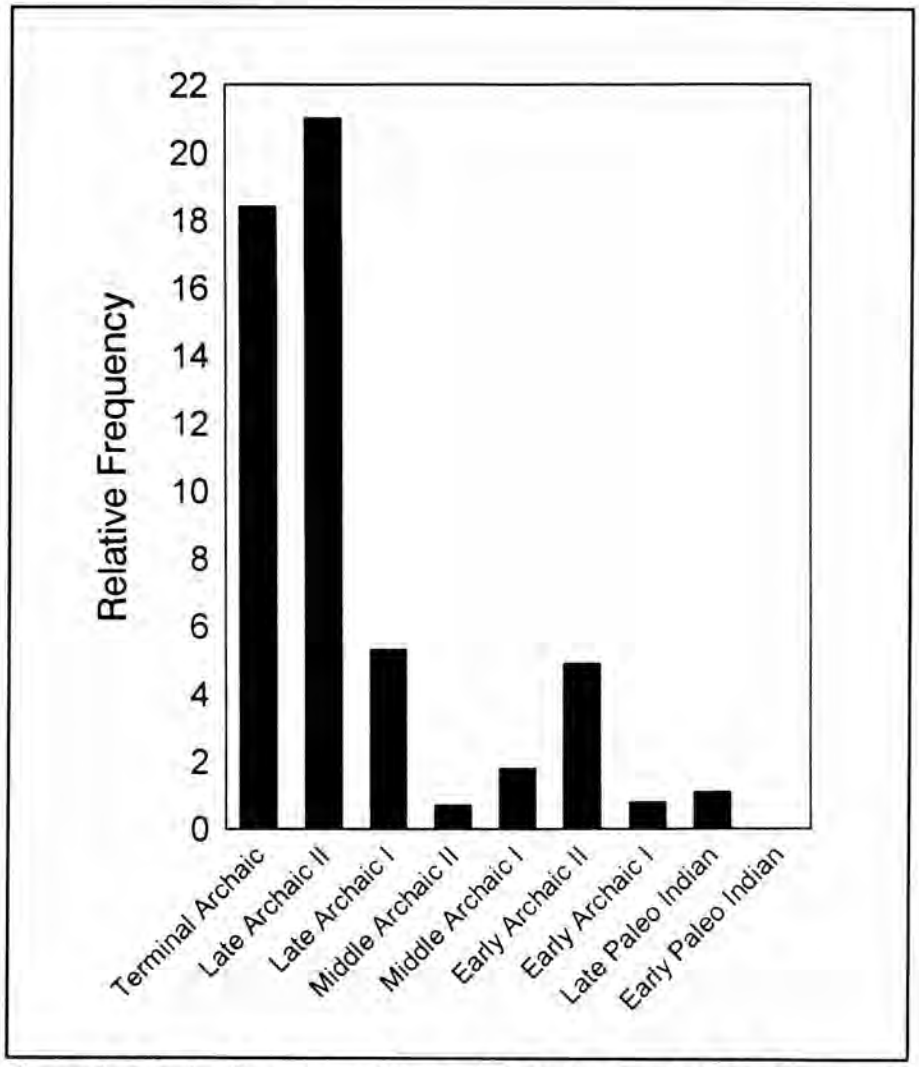

Figure 9. Relative frequency of dart points by time periods for the central Texas coast.

side of Puerto Bay, and the north side of Corpus Christi Bay. Sites from this time period have not been plotted due to the lack of concentration of these points at any particular site as well as the lack of any substantial evidence showing that they were associated with estuarine resource exploitation.

Early and Middle Archaic sites are found on the north and south sides of upper Nueces Bay, the south side of Puerto Bay, Playa Ladoso, the lower Nueces River valley, the north side of Corpus Christi Bay and the western shore of St. Charles Bay. Late Archaic sites are most common along the southwest side of Copano Bay, the north side of Corpus Christi Bay, upper Nueces Bay, and along the Cayo del Oso. In addition to the same areas in which Late Archaic sites are found, Terminal Archaic sites were identified along the lower Nueces River, Ingleside Cove, Oso Creek and the upper Laguna Madre. In Late Prehistoric times, there is a major shift in estuarine site locations to the lower estuaries, barrier islands and tidal passes.

DISCUSSION

To the extent that the abundance of time-diagnostic points is an indicator of intensity of use by human populations, the data from Table 3 certainly suggest that humans occupied the coast in varying intensity throughout the Holocene. Probably not coincidentally, the relative numbers of projectile points from all time periods correlates well with the numbers of radiocarbon-dated components at estuarine sites. The scattering of dates from the Early Archaic I and the Middle Archaic I matches well with the relative number of points from those periods. When Tortugas points are added into the relative frequency chart (Figure 9) where their degree of patination suggests they should be, the Early Archaic II (6000-4600 B.P.) is the most heavily represented period prior to the reoccupation of the coast after 3000 B.P. (see Ricklis 1993). This also correlates favorably with the relatively large number of radiocarbon dates from the Early Archaic II time period (see Figure 1).

The overwhelmingly abundant Pedernales point of Central Texas is virtually absent from the coast during the Middle Archaic II. Of a total of approximately 500 dart points found in an estuarine context, the only possible Pedernales point (Figure 4:D) appears at a distinctly Terminal Archaic/Late Prehistoric site (41NU1), suggesting curation. The striking absence of this point type, as well as the absence of corresponding radiocarbon dates, suggests that there was relatively little human exploitation of estuarine resources during this time period. Indeed, both sites located on Figure 2(e), at the southern end of Puerto Bay and at Kinney Bayou on Ingleside Cove, have been included based on findings of Bulverde points in general areas in which there were noted shell scatters. Neither is clearly an estuarine exploitation site during the Middle Archaic II.

After 3000 B.P. the relatively large number of points corresponds with the plethora of radiocarbon dates after that time. In fact, the most intensively used Archaic sites along the central Texas coast (e.g., 41CL3, 41SP120, 41AS3) are principally occupied beginning in the Late to Terminal Archaic (Ricklis 1995).

The location of estuarine exploitation sites from the Late Paleo-Indian period through the Middle Archaic is mostly in the lower river systems and upper to middle estuaries, perhaps because those areas provided the major exploitable shallows prior to the formation of protective barrier islands after ca. 3000 B.P. (see Ricklis 1993, 1995). Because of this fact, it is somewhat doubtful that there exist large concentrations of more seaward sites from this time period that have now been inundated by rising sea levels.

With the advent of the Late Archaic around 3,000 years ago, estuarine exploitation sites begin to shift toward the lower estuaries, where large shell middens such as Kent-Crane (41AS3), Mustang Lake (41CL3) and Ingleside Cove (41SP120) show their initial major occupations. This shift occurs at a time of formation of modern, continuous barrier islands (Ricklis 1993, 1995) and generally decreasing salinities throughout the estuaries (Cox 1994).

With the Terminal Archaic, the principal focus of exploitation had already begun to shift to the tidal passes and the smaller, lower estuarine bays and lagoons. This trend becomes very prevalent in the Late Prehistoric period, at which point the upper estuaries are virtually abandoned in favor of the lower estuaries and tidal passes as major loci of estuarine exploitation. Documented sites from this time period have produced thousands of arrow points. Notes in the Tunnell collection speak of large collections of "bird points" from various sites while Martin notes that the Lamar peninsula has produced "bushels" of these points. By themselves, the Webb and Pita Island collections at T.A.R.L. have around 300 arrow points, while the Tunnell collection has several hundred more from those two sites.

The gross disparity between numbers of projectile points from the Late and Terminal Archaic to the Late Prehistoric, as well as the switch from the use of darts

to bows and arrows, certainly suggest that the obvious shift in site locations during that time could have reflected changing food procurement activities as opposed to a tremendous increase in human populations. Ricklis (1995) has shown that the number of fish otoliths found in occupation levels increases dramatically with the advent of the Late Prehistoric. If bows and arrows were indeed used for fishing as was reported by Newcomb (1983) the shift in site locations could have been a result of a greater emphasis on fishing rather than shellfishing. The location of Late Prehistoric sites along fish passes and other areas of concentration certainly supports this inference.

CONCLUSION

Through the examination of large surface collections, an attempt has been made to construct a coastal chronology for dart points based on: 1) previously reported Central Texas chronologies (e.g., Prewitt 1985; Turner and Hester 1993); 2) patterns of patination; 3) associational contexts; and 4) previously dated points from coastal contexts (Ricklis 1993, 1995). The result of this initial attempt at a coastal chronology is presented in Table 2.

Coastal sites were then plotted by time periods based on the appearance of certain point types at those sites. This demonstrated not only a large fluctuation in point type abundances that closely corresponded with regional radiocarbon data (Figure 1), but also a major shift in site locations beginning after 3000 B.P., culminating in the Late Prehistoric, when the major shellfish extraction sites of the upper estuaries were abandoned in favor of the more fishing-oriented sites along the tidal passes, smaller bays and lagoons (see Ricklis 1995).

The examination of surface collections in this fashion demonstrates the advantages of a purely spatial approach. Many aspects of prehistoric human activity are understood only in the context of relevant processes. And in the final analysis, the change in human settlement patterns evidenced in Figure 2 will be seen as a complex series of interactions between humans and their environment. Within the context of a spatial approach, we are provided the analytical framework for examining the effects of long-term environmental change and human response to the resulting changes in the exploitable estuarine biomass.

ACKNOWLEDGMENTS

I wish to acknowledge the tremendous cooperation of Dr. John Tunnell of Taft, Texas, who, for over fifty years, has advocated and furthered the discipline of archaeology as a science. And a special thanks to his son, the renowned marine biologist Dr. Wes Tunnell of Texas A & M University - Corpus Christi, without whose help this paper would not have been possible. As always, it was a pleasure working with Bobbie McGregor of the Witte Museum, who provided the Martin collection for examination and offered her invaluable insight. Michael B. Collins was extremely helpful in his analysis of artifacts, as was Tom Guderjan with his comments on an earlier draft of this paper. My nephew, Alexander Cox, provided the wonderful illustrations. And finally, I greatly appreciate the huge amount of time and effort put in by Robert A. Ricklis in the formulation of the ideas behind this article. No one knows more about the coastal Archaic.

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TO YOUR HEALTH!!

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

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

Archaeology magazine

41ZP178, COFFEE CUP HILL: A PREHISTORIC OCCUPATION SITE IN ZAPATA COUNTY, TEXAS

James Bryan Boyd

ABSTRACT

A significant archaeological site attributable mainly to the Late Prehistoric period is examined in this report. The location and a description of the site is presented, and an analysis of artifacts collected there is also included.

INTRODUCTION

The site, designated "Coffee Cup Hill" by the author, has been formally recorded with the records division of the Texas Archeological Research Laboratory (TARL) at Austin, Texas (July 1995), and has been officially designated 41ZP178.

The site was originally visited by the author on March 30, 1986. At the time of this writing (August 1, 1995), the site has been visited on 12 different occasions and a significant quantity of artifacts has been collected there. All artifacts were collected from the surface.

Coffee Cup Hill is a relatively large site located mainly on a sheet-eroding hillside in Zapata County, Texas. The boundaries of the site are clearly defined by the observed distributional pattern of arrow point specimens collected there.

An assessment of the artifacts collected in the site reveals that the majority are of the arrow point category, most of which date from the Late Prehistoric period. An earlier occupational component is also present and is represented by numerous dart points collected there. The Historic period is represented by a very small number of arrow points collected in the site which have been dated from that period. The Historic period is also well defined with the presence of the ruins of an old house structure, presumably dating from the early 1900s.

LOCATION OF THE SITE

Coffee Cup Hill is located in west-central Zapata County, Texas (see Figure 1), about eight miles (12.87 km) northwest of Zapata, Texas. The center of the site is located about 1,950 feet (600 meters) west of U.S. Highway 83, and about 2,800 feet (850 meters) east of the original riverbed of the Rio Grande, which is now submerged in the waters of Falcon Reservoir.

Coffee Cup Hill lies with the lomeria zone as described by Nunley (1989:195) approximately 150 feet (46 meters) above the elevation of the original Rio Grande riverbed. This places the site within the Reynosa formation as defined by Penrose (1889) and later described by Evans (1962:38-39).

The site is not currently threatened by development, other than the possibility of being root-plowed. Many nearby areas have been cleared in the recent past.

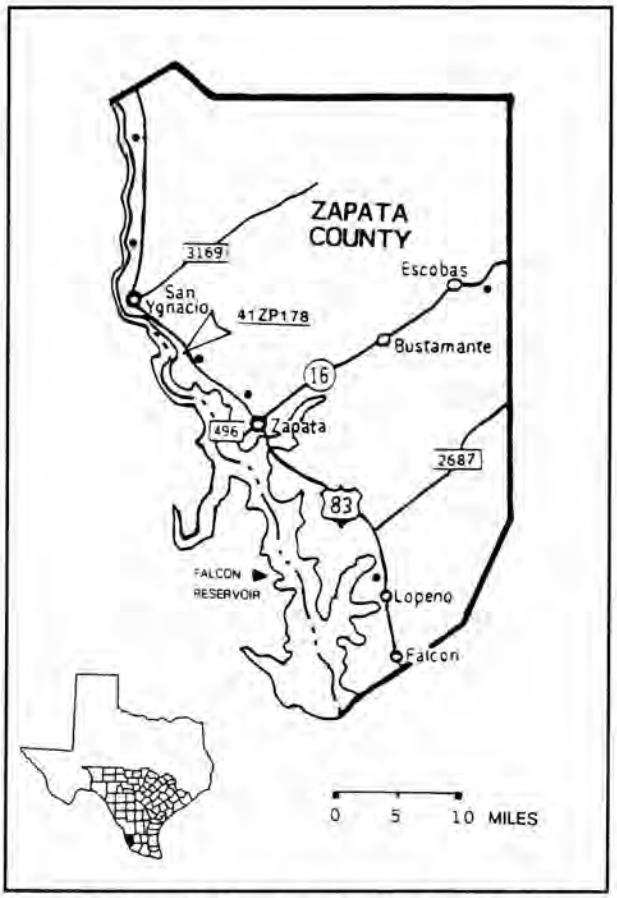

Figure 1. Zapata County, showing location of the site. Zapata County is darkened in the inset.

DESCRIPTION OF THE SITE

Coffee Cup Hill consists of a long and narrow strip of sheet erosion along the northeast and eastern portion of a low hill which is situated on top of a mesa which fronts the Rio Grande. The site is essentially oval in shape, and measures approximately 1,950 feet (600 meters) in length and 488 feet (150 meters) in width. It is oriented northwest to southeast, which partially exposes it to the prevailing southeasterly wind which blows continually in the area.

The current land use is ranching, and cattle move through the site on a regular basis. A fenceline divides the site area. This fenceline is oriented in a southwest to northeast direction. Another fenceline which intersects the other is oriented in a northwest to southeast direction and demarks the site's approximate northeastern boundary.

The surface of most of the site consists of a thin layer of loose silt over harder ground. These deposits are apparently marine deposited and are eroding appreciably. Both rainfall and wind contribute to this erosion. The upper elevations of the site exhibit a higher occurrence of gravels consistent with the Reynosa formation (Evans 1962:38-39).

An ephemeral stream is located just north of Coffee Cup Hill, and several *tinajas* (pools of water trapped in a natural depression) are present just south. Obviously, however, the main source of water utilized by the former inhabitants of the site was the Rio Grande. The nearest major drainage system other than the Rio Grande is the Arroyo Burro, which lies approximately 1.5 miles (2.5 kilometers) to the north.

The site area is relatively free of brush cover, with very little grass present. Approximately 70% of the ground surface is visible. Vegetation types present include several species of low, thorny brush, sage, prickly pear cactus, yucca, and others. Small, sparsely distributed mesquite trees provided a welcome refuge from the blazing sun during several of the author's visits to the site.

The archaeological surface deposits at Coffee Cup Hill consist, in part, of large amounts of scattered burned rock. This burned rock, presumably the remnants of deflated and scattered hearths, is composed almost entirely of small, fist-sized pieces of sandstone. A very large amount of chipped chert is also evident across the site and is noticeably concentrated in several areas. Large numbers of snail shells and fragments of river mussel shells abound.

The surface deposits are obviously deflated and have probably been heavily relic-collected in the past. The general area is popular among avocationals and the site is easily accessible and is visible from U.S. Highway 83. The site is also accessible from Falcon Reservoir. Mike Ryan, of Mission, Texas, reports finding several arrow points (unspecified type) there in the early 1980s (personal communication 1983). Douglas Bryan, of Mission, Texas, has also collected artifacts there (personal communication 1988), but there is no record of what he collected.

Present within the confines of the site are the ruins of a single, poorly preserved structure, presumably once a house. The structure appears to date from the early 1900s.

ARTIFACTS COLLECTED

In 12 visits made by the author to Coffee Cup Hill, an appreciable number of artifacts were collected. Artifact types collected include, but are not limited to, the following classes:

(a) assorted arrow point styles
(b) assorted dart point styles
(c) sandstone abrading stones
(d) assorted stone tools/blanks
(e) large chert cores
(f) large stream-worn rocks
(g) mano stone

A brief description of the artifacts collected is presented below. Specific notes on some of the artifacts collected were not made, and only very generalized information is presented.

Arrow points. The most common class of artifact collected at Coffee Cup Hill is the arrow point, which is represented by 157 specimens, 18 of which are complete. Eight different recognizable styles are evident in the sampling, including Caracra, Cliffton, Fresno, Guerrero, McGloin-like, Perdiz, Starr, and Toyah. These eight styles are represented by 102 specimens, of which the Perdiz type is represented by 30 specimens, McGloin-like by 28 specimens, Caracara by 17 specimens Fresno by ten specimens, Starr by nine specimens, Cliffton by six specimens, and

single specimens of both Guerrero and Toyah. An unclassified type arrow point was also collected, as were 42 distal fragments and 12 unidentified, mainly medial, fragments.

Dart points. One hundred nineteen dart points were collected in the site. Unfortunately, 112 specimens consisted of assorted, broken unstemmed points, and their specific types were not recorded. Common unstemmed dart point styles in the Falcon Reservoir area include Abasolo, Catan, Desmuke, Kinney, Lerma, Matamoros, Pandora, Refugio, and Tortugas. The broken unstemmed dart points collected at Coffee Cup Hill likely conformed to these styles. Only five complete dart points were collected and are represented by two styles. These styles are Matamoros (three specimens), and Tortugas (two specimens). Single proximal fragments of both Langtry and Shumla were also recovered.

Abrading Stones. Three sandstone abrading stones were collected. Such abrading stones are very common in the Falcon Reservoir area. No specific notes were made regarding the three specimens collected.

Assorted stone tools. A total of 49 assorted stone tools or blanks were collected at Coffee Cup Hill. Specific notes regarding the various types collected were not made. Common stone tool types in the area include Clear Fork, Nueces, and Olmos. Some of the collected specimens probably conformed to these types.

In addition to the 49 specimens referred to above, three other artifacts believed to be tools were also collected. The first is a small, round-nosed scraper made from a gray and brown chert. This specimen was apparently fashioned from an unstemmed dart point. The distal end has been reworked, forming a generally rounded edge. The proximal end is three-sided, which gives an overall pentagonal appearance to the specimen. The length of the scraper is 1.35 inches (34 mm) and the width is 0.78 inches (20 mm). The specimen measures 0.31 inches (8 mm) at its thickest point. The second specimen, also believed to be some sort of tool, is a small, parallelogram-shaped item fashioned from a pinkish-brown chert. The specimen measures 0.70 inches (18 mm) along one axis and 0.68 inches (17 mm) along the other. It is only 0.16 inches (4 mm) thick. It is highly speculative what the item might have been used for. The third specimen appears to have been made from an arrow point (unknown type). It is made from a tan-colored chert and the distal portion is still pointed and intact. The proximal end appears to have been reworked, producing an irregularly shaped appearance. One of the lateral edges of the specimen exhibits a ground appearance, suggesting that it may have been utilized for some type of cutting, but this is uncertain.

Large chert cores. Two large chert cores were collected. One, which has had flakes removed from all sides, has very little remaining cortex, which is light brown or tan in color. The interior consists of a high quality, light brown chert with circular and oval-shaped nodules of crystalline material. The second specimen is a large core from which flakes have been removed from two sides. A large amount of cortex remains on the unaltered surface, and is dark brown and black in color. The interior material is a light tan-colored chert with light banding. The first specimen measures 4.84 inches (123) mm in diameter at its greatest width and weighs 1.54 lbs. (698 grams). The second specimen measures 4.46 inches (113 mm) in diameter and weighs 1.32 lbs. (599 grams).

Large stream-rolled rocks. Two large, polished rocks were also collected. It is unknown what these rocks were used for, if anything. The specimens were aberrant to other rocks observed in the site, and may represent raw material transported to the site to be utilized in the manufacture of stone artifacts.

The first specimen is dark gray in color, with hundreds of light brown colored markings or features which are recessed and generally oval in shape. The specimen appears to be lightly polished or ground over most of the exterior surface. It measures 6.0 inches (152 mm) in length, and 2.62 inches (67 mm) in width at the widest point. It weighs 1.46 lbs. (662 grams). The second specimen collected is dark gray in color, also with a polished appearance exterior surface. It measures 5.21 inches (132 mm) in length, and 2.13 inches (54 mm) in width at the widest point. The specimen weighs 1.02 lbs. (463 grams). The top and bottom of the specimen are unusually flat in appearance.

Mano stone. A single ground stone item, apparently a mano stone, was recovered. The specimen is dark brown in color and is pitted with hundreds of small holes. The length of the mano is 5.5 inches (140 mm) and it is 3.41 inches (87 mm) in diameter at its widest point. The specimen is only 1.0 inch (25 mm) thick. The overall shape is a flat oval, widening toward one end. The mano weighs 0.96 lb. (435 grams).

No other pecked or ground stone artifacts such as other mano stones, metates, or pestles were recovered at Coffee Cup Hill. Also, no ornamental artifacts such as beads or pendants were found, even though such artifacts are quite common in the area in general.

TIME PERIODS REPRESENTED IN SITE

Various occupational time periods are represented at Coffee Cup Hill and span from the Middle archaic to the Historic period. As mentioned earlier in this report, the primary period during which the site was utilized, as represented by collected diagnostic artifacts, was the Late Prehistoric.

Middle Archaic. The Middle Archaic period is represented by the single fragmented Langtry dart point collected. This dart point style dates from the time period between 2500 B.C.-1000 B.C. (Turner and Hester 1993:143).

Late Middle Archaic. The Late Middle Archaic is represented by the finding of two complete specimens of the Tortugas dart point style (Turner and Hester 1993:188).

Late Archaic. The Late Archaic is represented by the single fragmented Shumla dart point collected. The Shumla style dates from the time period between 1000 B.C.-200 B.C. (Turner and Hester 1993:186).

Late Archaic to Late Prehistoric. This time period is represented by the three complete specimens of Matamoros dart points collected (Turner and Hester 1993:153).

Late Prehistoric. The Late Prehistoric period is represented by a large number of arrow points recovered in the site. Arrow point styles from that period collected at Coffee Cup Hill include Caracara, Cliffton Fresno, McGloin-like, Perdiz, and Starr (Turner and Hester 1993:205, 208, 213, 224, 227, 231). Turner and Hester (1993:227) ascribe the Perdiz arrow point to the time period between 1200 A.D.-1500 A.D. The other arrow point styles are not so specifically dated.

Historic. The Historic period is represented with the finding of single specimens of Guerrero and Toyah arrow points. The Toyah arrow point persisted from the Late Prehistoric into the Historic period, while the Guerrero style is ascribed to the Historic period (Turner and Hester 1993:216, 234).

The Historic period is well represented at Coffee Cup Hill with the presence of the single, poorly preserved structure, presumably once a house. The structure appears to date from the early 1900s, and seems about to collapse toward the northwest. The structure appears to have been utilized in more recent years as a hunting cabin. Large amounts of old glass and ceramic shards litter the surface around the house. An old coffee cup found outside the structure led to the eventual naming of the site. The house is mainly fabricated with short, horizontally placed sections of various types of wood which form the exterior walls. The types of wood used include mesquite, ebony, and others, all common in the area. These sections are held in place with numerous vertially placed limbs or trunks, each several inches in diameter. These supporting members extend from the ground to the roofline, and are spaced every one to two feet around all sides of the structure. The house exhibits a corroded tin roof and a collapsed stone chimney at the southwest corner. An old corral is present several yards to the northeast. A well-used dirt road runs from U.S. Highway 83 to the house.

DISCUSSION

A previously undocumented archaeological site is discussed in this paper. The site, named Coffee Cup Hill by the author, has been formally recorded with the Texas Archeological Research Laboratory at Austin, Texas, and has been designated 41ZP178. An assessment of artifacts recovered during detailed surface collections indicate the site was utilized from the Middle Archaic through the Historic period. Examinations of diagnostic projectile point types collected in the site, where specific types were documented, reveals that the primary period of occupation was the Late Prehistoric period.

ACKNOWLEDGMENTS

Sincere appreciation is extended to Dr. Thomas R. Hester, Director of the Texas Archeological Research Laboratory, the University of Texas at Austin, for his continued encouragement of the author's archaeological endeavors, and for providing some of the literature utilized in the preparation of this report. Special thanks also to Carolyn Spock, Head of Records at TARL, who aided in the formal recording and designation of the site in the permanent records at TARL. Thanks are also due to Mike Ryan, of Mission, Texas, who originally directed the author to the site, and who provided motivation during the author's early explorations in the Falcon Reservoir area.

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USE A SHOVEL, GO TO PRISON

It was, the prosecution said, a message to those who feel it is their "special right to destroy, loot, and plunder this nation's resources." Last December, notorious grave robber Earl Shumway of Moab, Utah, was handed a six-and-a-half year prison term. Shumway, long considered the Al Capone of artifact plundering, helicoptered into remote sites with radio-packing lookouts in tow and claimed to average $5,000 a day in black market sales. A federal trial jury found him guilty of, among other things, removing an Anasazi ceremonial blanket from the skeleton of an infant at Dop-Ki Cave in Canyonlands National Park and scattering the remarkably preserved bones.

OUTSIDE MAGAZINE
The Profile
Houston Archeological Society

AN ENGRAVED LIMESTONE PEBBLE FROM 41BX1005 IN NORTH BEXAR COUNTY, TEXAS

C. K. Chandler

ABSTRACT

A limestone pebble with an engraved motif on one surface is documented and illustrated. It is the fourth such pebble reported from Bexar County.

THE ARTIFACT

This pebble retains its natural cortex and has not been pecked, ground or chipped to shape it. It is irregularly flat with dimensions of: Length, 87mm; Width, 35 mm in the central area, and it is 4 to 8 mm thick. It weighs 35.5 grams. It is an elongated oval with a single motif on only one face. This motif is of three nearly parallel vertical lines of varying lengths up the center with a series of diagonal lines protruding from each side at about a 45° angle. On each side these lines are bordered at their outer ends by a single line that tend to box in this entire motif. Near the upper end of the centrally located vertical lines is a single horizontal line that nearly reaches the pebble edge. The interior ends of the lines do not cross the vertical centered lines.

Overall, this motif is much like a chevron. This pattern is often displayed on engraved pebbles and may have particular significance in the culture of those who carve these pebbles.

DISCUSSION

A number of engraved pebbles have been reported in *La Tierra* in recent years (Chandler 1991, 1993a, 1993b; McReynolds and Chandler 1990;Hester, Collins and Headrick 1992). These generally occur as individual specimens and until recently have been considered as belonging to the Archaic or Late Prehistoric time periods. It is only recently that some specimens have been found in association with Paleo-Indian artifacts that establish their origin as early as Clovis times (Hester, Collins and Headrick 1992).

The engraved pebble illustrated here (Figure 1) is from a buried site, 41BX1005, in north Bexar County. Other artifacts from this site include several of bone and shell. The shell specimens are of freshwater mussel. Projectile points from 41BX1005 include Plainview, Angostura, Pedernales, Marshall, Ensor, Frio, Fairland, Edwards, Scallorn, Fresno and Perdiz. Edwards arrow points appear to predominate.

The materials from this site span the time periods from Late Paleo-Indian to the Late Prehistoric. The engraved pebble probably falls within the Late Prehistoric Edwards time period of about AD 900.

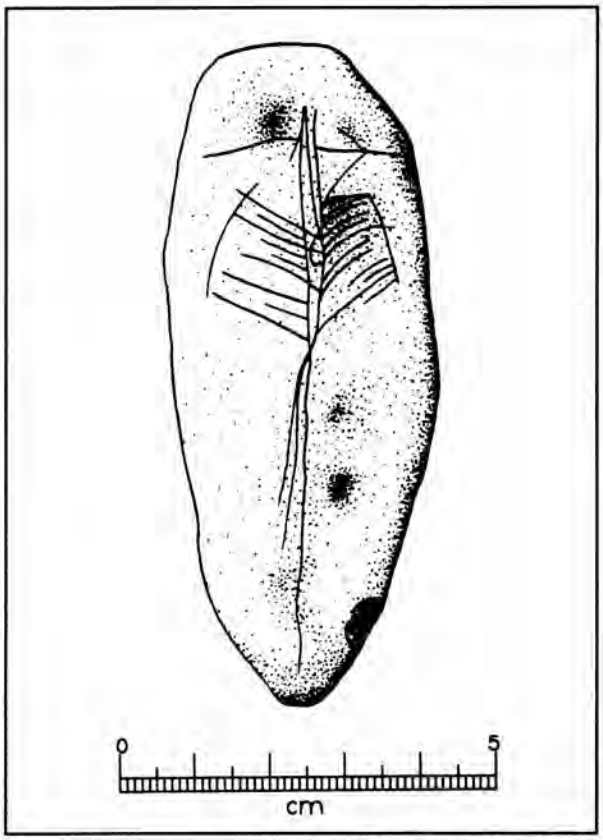

Figure 1. An engraved pebble from 41BX1005, north Bexar County.

ACKNOWLEDGMENTS

I extend my thanks to Todd Chism for the loan of this engraved pebble for documentation, and to Richard McReynolds for the illustration.

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INDIAN VILLAGE FOUND

An entire Caddo village dating between ca. A.D. 150 and 1450 has been excavated in northeastern Texas on land targeted for coal strip-mining. Some 42 circular dwellings and a central ceremonial plaza at the Oak Village site have been identified.

Field Notes
Archaeology Magazine

PACIFIC COAST BASKETRY

Basketry fragments found in a cave on the Channel Islands off Santa Barbara, California, have been dated to 9,000 years ago, twice as old as the oldest basketry previously discovered on the Pacific coast of North America, according to University of Oregon scholars.

Field Notes
Archaeology Magazine

TWO INCISED PEBBLES AND A PAINTED STONE FROM KERR COUNTY, TEXAS

Bryant Saner, Jr.

ABSTRACT

This report is to document and discuss two incised pebbles and a painted stone from Kerr County, Texas.

ARTIFACT

The incised pebbles (Figure 1, A, A′, B) were recovered during excavation of a burned rock midden on the southern banks of the Guadalupe River east of Kerrville, Texas. Specimen A is an oval river-worn, limestone pebble. It is incised on both sides. Side A has a feather or tree-like pattern on it. The center line is heavily incised. The upper portion of the center line separates for approximately nine millimeters. It appears as if the incising tool came out of the center groove and then was forced back into the groove. The branches coming out of the center line are not as heavily incised as the center line. The lines between the branches are lightly incised. Some of these are difficult to see without proper lighting and magnification. Side A′ has few lines. They are lightly incised with no detectable pattern. The dimensions of Specimen A are: Length, 71 mm, Width, 48 mm and Thickness varying from 17 mm to 21 mm.

Specimen B is a fine-grained pinkish sandstone. It appears to be a broken part of a larger incised pebble. The breaks do not seem to be heat related. These lines are heavily incised and easily seen without magnification. The stone is only incised on one side. The dimensions of Specimen B are: Length, 49 mm; Width, 31 mm and Thickness, 6 mm.

These incised pebbles were all found associated with Frio, Marshall, Pedernales and Williams projectile points. This would place them in the Middle to Late Archaic time period (Turner and Hester 1985). In addition, 15 river-worn limestone pebbles were found in this site. No incising or painting was detected on these pebbles. Three of these stones had holes in them. They did not appear to be man-made since the holes were irregular in shape and no drill marks were noted. The stones varied in size; the largest has a length of 98 mm, a width of 81 mm and a thickness of 30 mm. The smallest stone has a length of 38 mm, a width of 22 mm and a thickness of 8 mm.

Specimen C is a painted pebble recovered from a small cave in extreme western Kerr County. The limestone pebble is somewhat triangular in shape. This stone does not appear to be river-worn. It was recovered from the floor dirt of this cave. The design is painted in black. It is a series of vertical and horizontal lines. There is a long loop with a center line at the top of the stone. The lines touch but do not cross over one another with the exception of the right side line of the loop. There is a deformity in the smooth surface of the stone that causes a break in several of the vertical lines. It appears that the lines were made with a single stroke. Some paint is noted in the deformity as if the brush was lifted by the uneven part of the stone. This pebble is only painted on one side. The lower end and right lower side of the stone appears to have been burned. The painted lines are faint in this area. This faintness is not shown in the drawing so the design can be easily seen.

Specimen C was not found with any identifiable artifacts, making it very difficult to place in a time period. The dimensions of Specimen C are: Length, 88 mm, Maximum Width, 57 mm and Thickness, 7 mm to 11 mm. The width of the painted lines varies from 2 mm to 4 mm.

DISCUSSION

There are few reports in the literature of incised or painted pebbles in Kerr County and the surrounding area. Among these reported is one that has some similarities to Specimen A. It has a tree-like design that does not cover the entire surface of the stone as does Specimen A. Incising was done on both sides. It was recovered from a burned rock midden in the Kerrville area. This

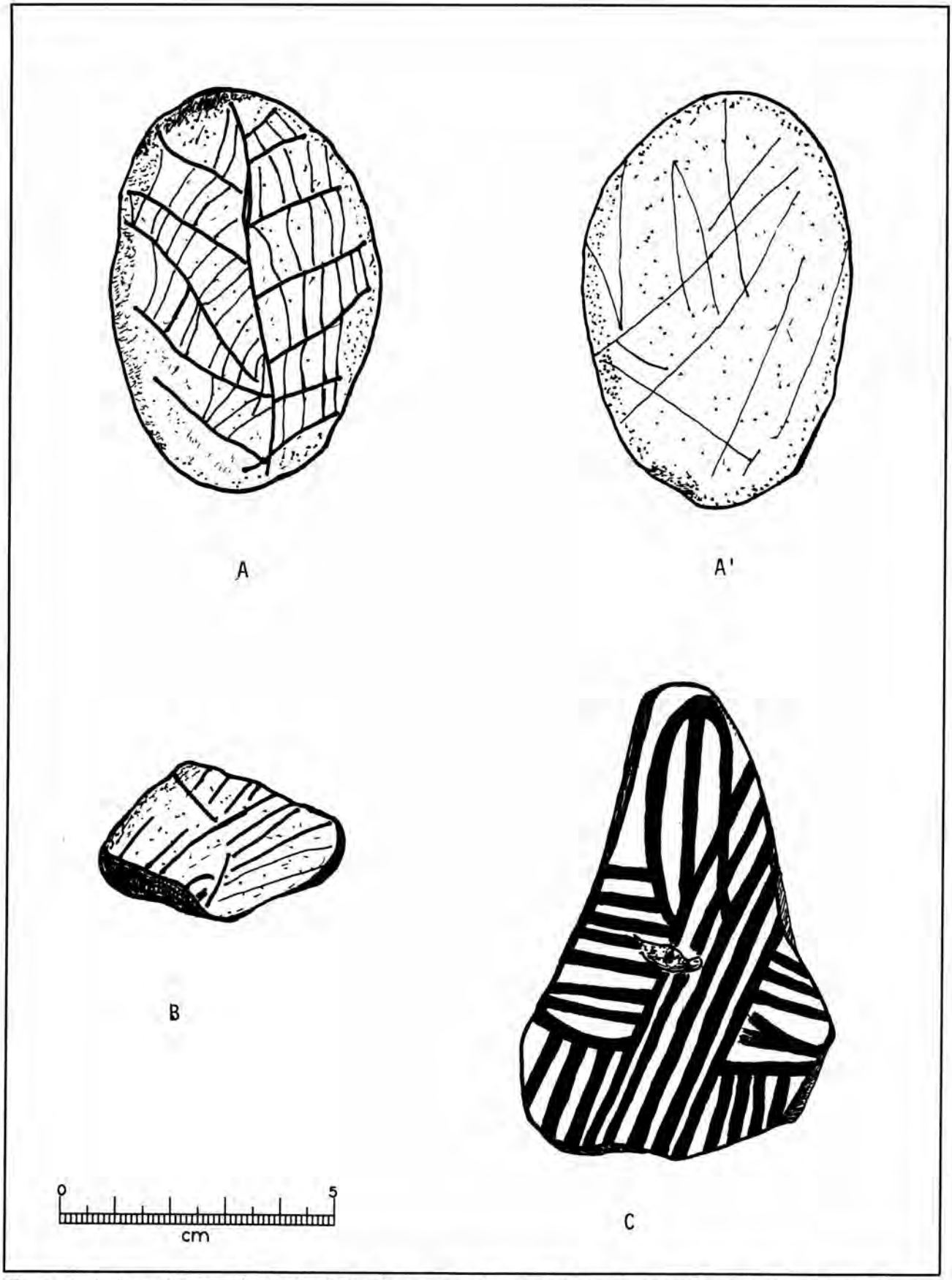

Figure 1. A-A′ and B, two incised pebbles from Kerr County, Texas. C, painted stone from Kerr County. Drawings by the author.

report also describes two incised stones from Bexar County. There is a branching design on one stone that is somewhat similar to specimen A. Both stones were found in burned rock middens (Chandler 1993a). Chandler (1993 b) describes another incised stone from Bexar County that has very little similarities to any of these stones. An incised and painted pebble is documented from Real County (Chandler 1992). This stone cannot be compared very well to the others discussed in this report. These last two stones are mentioned to show that incised stones are found throughout the Hill Country, but reports are scarce. There is one painted pebble reported from Kerr County. It was found approximately 10 to 12 miles east of Specimen C. This pebble is also painted in black (Priour 1984). Black seems to be the predominant color with red being reported rarely (Davis 1995).

There are several reasons why so few incised and painted pebbles are reported. A case may be made for the fact that some "artifact collectors" do not recognize these stones. When collectors' backdirt was examined at the Gault Site, four engraved stones were found (Hester, Collins and Headrick 1992). The incised stones and painted pebbles being exposed to the elements, especially dampness, may cause them to dissolve or fade completely. Central Texas does not have an abundance of dry caves to help preserve these artifacts. Compare this to Val Verde County, Texas which has many dry caves and many reported painted stones. The function of these incised and painted pebbles is not known (Parson 1986). The speculations about the use of these stones will not be dealt with in this report. Very few reports of incised and/or painted pebbles come from the Central Texas region. This makes it very important to document as many of these as possible. These reports may some day help unravel the archaeological mysteries of this area.

ACKNOWLEDGMENTS

I would like to thank C. K. Chandler for his assistance and review of this report. A big thanks goes to my wife, Karyn, for the many proof readings of this report..

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ENGRAVED PEBBLES FROM LAMPASAS COUNTY, TEXAS

C. K. Chandler

ABSTRACT

Two engraved stone pebbles from a midden site on Sulphur Creek in Lampasas County, Central Texas are documented and illustrated.

DESCRIPTION OF ARTIFACTS

Specimen A, Figure 1, A is a sub-triangular pebble of brown sandy limestone from a midden site along Sulphur Creek in southeastern Lampasas County in Central Texas. It is one of two engraved pebbles known to have been recovered from this site. Its maximum dimensions are 93 mm in length, 78 mm in width at one end and 35 mm at the opposite end. It is 9 to 11.4 mm in thickness and weighs 123.6 grams.

The engraved decoration can best be determined by viewing the illustration in Figure 1, A. The decorative motif on this specimen displays a pattern of several straight to curving parallel lines, most of which are oriented vertically with some placed horizontally. The lower groups of long vertical lines have two widely spaced lines with short closely spaced drooping lines in a pattern of chevrons. This chevron pattern occurs often on engraved pebbles and may be of particular significance to those who prepare these kinds of artifacts.

Specimen B, Figure 1, B, B' is an unusually small light brown limestone pebble with a multitude of

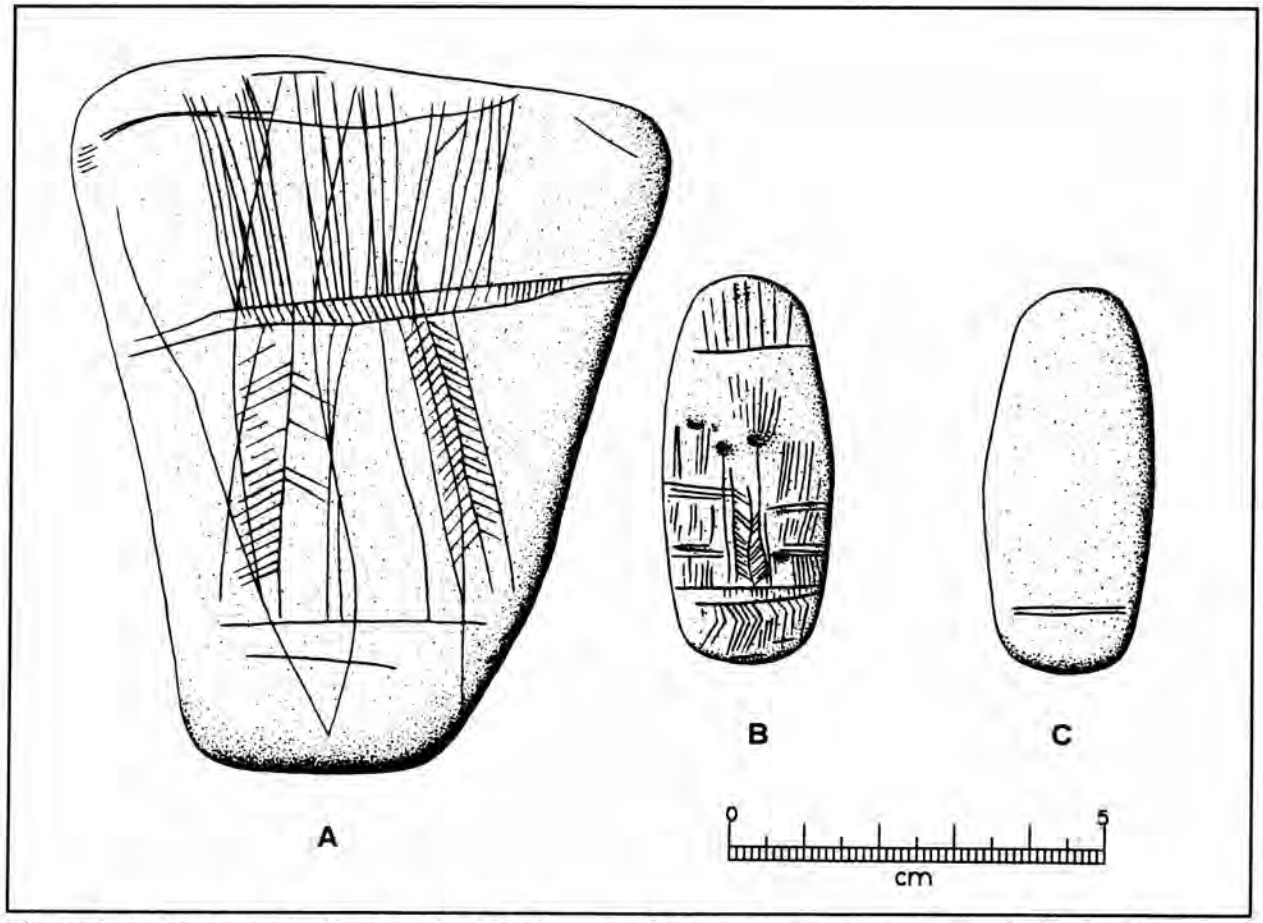

Figure 1. A, Specimen A--Engraved pebble from southeastern Lampasas County; B, B', Specimen B--Engraved pebble also from southeastern Lampasas County.

short straight engraved lines positioned both horizontally and vertically. It is rectangular in outline and has been partially shaped by edge grinding. Maximum dimensions are 51 mm in length, 22.5 mm in width and thickness is 7.6 to 8.8 mm. It weighs 8 grams.

The lower center of the decorative pattern on this specimen has the chevron pattern in reverse. This pattern has been called herringbone or tree-like design (Jackson 1938).

DISCUSSION

These two engraved pebbles were recovered from a midden site along Sulphur Creek between Lampasas and Kempner in southeast Lampasas County. Other lithics from this site include Pedernales, Williams, Ensor, Darl, and Kinney projectile points, a corner-tang drill, and Friday Bifaces.These kinds of artifacts span the time frame from Middle through Late and transitional Archaic times into the Late Prehistoric (Turner and Hester 1993). However, it has been only recently that engraved pebbles have been found in association with Clovis points in Central Texas at the Gault Site in Bell County (Hester, Collins and Headrick 1992). This site (41BL323) has yielded more engraved pebbles and cobbles (15) than has been published in *La Tierra* over the previous 20 years.

Specimen A of the engraved pebbles reported here is in the Todd Chism collection in San Antonio, and Specimen B is in the Bert Gubble collection in Lampasas.

ACKNOWLEDGMENTS

I extend my sincere appreciation to Todd Chism and Bert Gubbles for the loan of their artifacts for research and documentation and extend my sincere thanks to Richard McReynolds who prepared the illustrations.

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JERRY L. BAUMAN is a very active member of the Coastal Bend Archeological Society and has authored several reports for the CBAS Newsletter. He is noted for documenting artifact collections and sites, and is a skilled illustrator of artifacts. He has served as secretary for the CBAS since 1994. Jerry lives in Corpus Christi and is a frequent contributor for Archeological Awareness Month activities in his area.

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