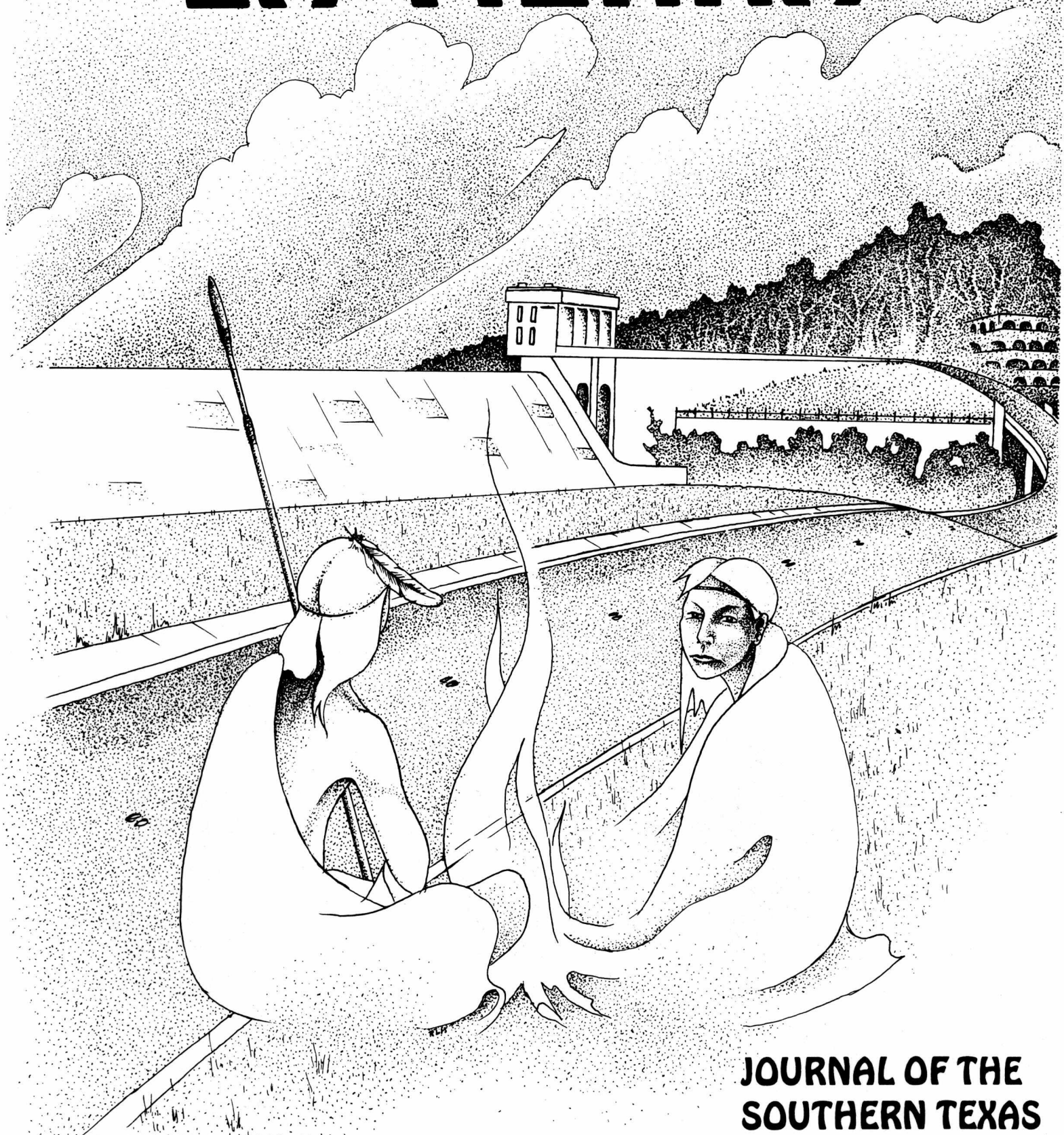
LA TIERRA



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LA TIERRA

QUARTERLY JOURNAL OF THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

Volume 21, No. 1
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Evelyn Lewis
Editor

About the Cover: Richard McReynolds has depicted a scene looking at the Olmos Basin Dam in San Antonio, with some early visitors. See Chandler article, page 11. Other illustrations by Richard are on pages 12, 14, 15, 17, 18, 29, 30, 32.

Manuscripts for the Journal should be sent to: Editor, *La Tierra*, Evelyn Lewis, 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, University of Texas, Austin, Texas, 78712.

For membership information contact the Membership Chairman, Kay Allison, 301 East Rosewood, San Antonio, Texas 78212 (210-733-1744).

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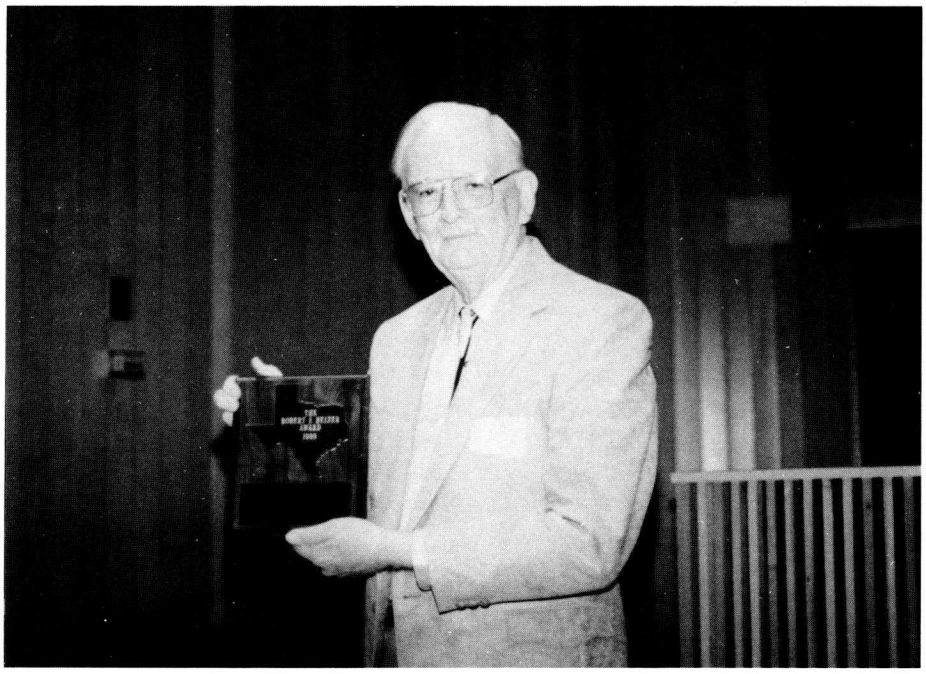
La Tierra is now printed on acid-free paper. Library of Congress Catalog No. 76-649774.

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

THE ROBERT F HEIZER Award

For Outstanding Contributions to Southern Texas Archaeology

For 1993



Pete Sunders, recipient of the 1993 Robert F. Heizer Award. Photo by Curt Harrell

R. K. "PETE" SAUNDERS

R. K. "Pete" Saunders of Canyon Lake, Texas, has made outstanding contributions to Southern Texas Archaeology during 1993 and earlier years, through his activities in support of Texas Archaeological Awareness Week each April, as a Texas Archeological Society (TAS) Regional Vice President, as a Steward, as a site surveyor (particularly around Falcon Reservoir in the Rio Grande Valley and at the Fox Draw Site in Gillespie County), and as a significant contributor to *La Tierra*. He also worked with the TAS Typology Committee to identify and document new projectile point types; he is responsible for the recent recognition of the Caracara arrow point and defined its distribution in the lower Rio Grande Valley region of southern Texas and adjacent Mexico (see Saunders and Hester, *La Tierra* 20(2):22-31). At the Fox Draw Site (41GL175), Pete not only excavated the site by himself, he documented his work in three interim reports in *La Tierra* (the most recent in *La Tierra* 20(3):29-47). His work is an outstanding model for others; from discovery and site reporting, as well as systematic exploration and excavation, to ultimate analysis and publishing of a set of thorough reports. In all he does, Pete is dedicated, systematic, and thorough; he is a model of involvement and activity for avocational archaeologists. The selection committee and members of the STAA are honored to recognize his accomplishments with this award.

The DEE ANN STORY ARCHAEOLOGICAL CONSERVATION Award

For 1993

Frances and Paul Ward receiving the Dee Ann Story Award from Jimmy Mitchell. Photo by Curt Harrell

FRANCES and PAUL WARD

The 1993 Dee Ann Story Archaeological Conservation Award is presented to Frances and Paul Ward of San Antonio and Quinta Medina, Bexar and Medina Counties, Texas. Over the last three years, Frances and Paul have opened the Quinta Medina Ranch to the members of the Southern Texas Archaeological Association (STAA) for survey and excavation of the Quinta Medina (41ME53) and other sites in support of the STAA fall field school conducted jointly by the STAA and the Institute of Texan Cultures (ITC). Frances and Paul have been a driving force in the development, operation, and successful follow-through of the STAA field schools, from making initial arrangements, supporting the field school committee, fully participating in field activities or laboratory work, permitting camping on the ranch, and helping to author reports of the work accomplished to date (see Guderjan, et al., *La Tierra* 20(1):12-26). This field school, functioning as part of a broader effort to explore the archaeology of the Medina River Valley, has significantly broadened our knowledge of the prehistory of southern Texas, and has increased both STAA membership and involvement. Frances and Paul exemplify the best kind of landowner; they are interested and concerned with the identification and conservation of archaeological sites and materials, yet flexible enough to support systematic exploration and study of the cultural resources on the ranch. Through their efforts and example, other property owners cooperated in the STAA-ITC project, and the awareness of cultural resources and archaeological materials has been greatly enhanced in Medina and surrounding counties. It is with great pleasure that the membership of the STAA recognizes the outstanding contributions to southern Texas archaeology of this dynamic couple.

The ARCHAEOLOGICAL PUBLIC SERVICE Award

For 1993

Bob LePere, former Assistant Principal of Redland Oaks Elementary School, receiving the 1993 Archaeological Public Service Award from Jimmy Mitchell.. Photo by Curt Harrell

REDLAND OAKS ELEMENTARY SCHOOL

During the 1992-1993 school year, all fifth grade regular and special education students at Redland Oaks Elementary School participated in the Archaeology Education/Cultural Preservation program. This program was designed to use archaeology as a vehicle to motivate students while allowing them to learn and utilize skills from a variety of disciplines; it also served to preserve as much of the prehistory of the area surrounding the school as possible. All students, teachers, staff, and administrators became **Caretakers of the Past**, with shared responsibility for preserving any artifacts found on the campus by adding them to a permanent collection. Students received instruction on archaeological methods and procedures; they surveyed a new roadway under construction, and collected all ecofacts and artifacts in the disturbed soil. Subsequently, they analyzed these materials in the laboratory and documented each discovery. They used the artifacts to make inferences about the lifestyles of various prehistoric inhabitants of the area, and are preparing a written report of their work for publication. This project was carried out in cooperation with the Office of the State Archeologist and the Texas Historical Commission, and each student pledged to preserve and protect our cultural resources and to encourage others to do the same, as well as to report any archaeological findings and endangered sites. The students, teachers, staff, and administrators of Redland Oaks are commended for their outstanding work in this project, and are hereby jointly awarded this Public Service Award by the board and members of the Southern Texas Archaeological Association.

EDITORIAL

DON'T TREAT SOIL LIKE DIRT!

As the trowel cuts into the soil to liberate an artifact or reveal a feature, that soil is usually regarded simply as an obstacle to the principal objective. In fact, the soil bears the detailed imprint of its geological, climatological, and environmental history, including the activities of humans. Pits, postholes and trenches are obvious evidence of past activities. These patterns of disturbance are frequently sources of physical evidence of the occupation or use of the land.

At least of equal importance are the stories that can be read in the nature of the soil itself. Examination of the sizes of soil particles and vertical and horizontal distribution can reveal the geological setting and the processes which generated the soil. For example, interruption of the size pattern in the vertical soil column by a layer of very fine uniform-size particles is often produced by extensive flooding. This would also account for corresponding interruptions in the presence of artifacts. Soils are eroded and transported chiefly by wind or water. When the soil particles are transported by the wind the resulting aeolian soils are called loess, and are composed of very fine particles, very uniform in size. When the soil materials are transported by water, their sedimentary deposits may consist of mixtures of particles which vary widely in size and vertical distribution depending on the conditions of water flow. To determine these conditions, the size and distribution of the soil particles must be accurately measured on samples which have been carefully collected.

The plant and animal populations of the soil generate a vast range of organic products which are preserved in the soil. Carbon compounds from simple to very complex are liberated and may persist for long enough times to be useful for characterizing climatic conditions. Plant and animal charcoal produced by heating without enough oxygen for complete combustion yield carbon for radiocarbon dating. The multitude of other materials from humic acids to complex carbohydrates, lipids, and amino acids can indicate not only something about the original sources, but coupled with stable isotopes, can provide an accurate description of the climate at the time the compounds were generated.

Add to this the trace elements and other mineral studies which can pinpoint the sources of the original rocks which weathered to generate the soil material; the ability to date loess by thermoluminescence; changes in soil magnetic properties to locate hearths, and a panoply of other very useful information. All of these factors strengthen the view that SOIL ITSELF IS A VERY VALUABLE ARCHAEOLOGICAL ARTIFACT.

There is a saying in Zen Bhuddism that when a single grain of sand is moved, the course of the world is changed forever. We may not wish to go that far, but we can certainly learn a great deal from the grains of sand that make up our soils.

D. R. Lewis

NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1994-1

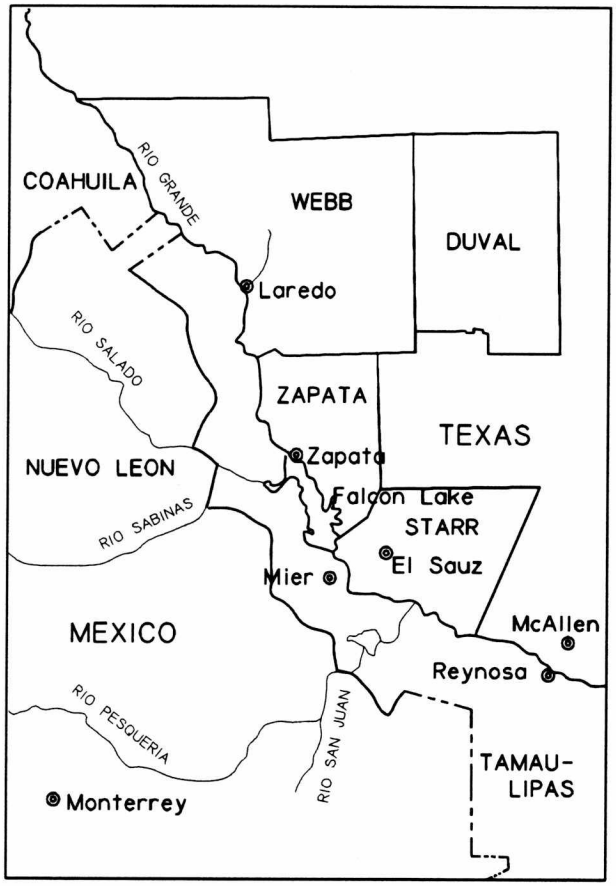
An Archaeological Site at El Chorro Falls, Near Saltillo, Coahuila, Mexico

Thomas R. Hester, Evelyn D. Lewis, and Donald R. Lewis

In 1963, Evelyn and Don Lewis observed a number of chipped stone artifacts eroding from a talus slope deposit below a rockshelter near Saltillo, Coahuila. This is in northeastern Mexico, with the rockshelter located at the west end of a mountain valley west of Saltillo. This locality was then known as "El Chorro Falls" and was a privately-owned park; it has since been converted into a private club. The rockshelter (Figure 1,a) is situated north of El Chorro Falls (Figure 1,b). A talus slope deposit, 10-12 feet wide, had developed in ancient times and extended about 15 feet below the shelter mouth. Two much smaller rockshelters were being used in 1963 as religious shrines, the floors covered with cement.

Thirty-three chipped stone artifacts, and several miscellaneous flakes, came from the talus surface. The projectile points are dominated by small side-notched forms, along with unstemmed triangular and oval-based specimens (Figures 2,3; Dimensions of illustrated artifacts are in Table 1). Raw materials are evenly divided between cherts (gray, black, brown) and white chalcedony (both opaque and translucent types). In order to obtain uniform photographs of the chert and chalcedony specimens, the chalcedony artifacts were painted with removable Grumbacher Gamma Retouch-Neutral Gray #5.

There are also several unstemmed bifaces (Figure 3) that are rather crudely made. Most of these appear to be preforms, though some could have conceivably functioned as projectile points or knives. The specimen in the lower right corner of Figure 3 is of a light green chert with cream-colored cortex, the only specimen made of this material. Two tiny, thin specimens (Figure 2, upper left) clearly appear to be arrow points. A distinctive crescentic plano-convex biface (Figure 2, upper right) was also found. These are common in western Nuevo León and Coahuila (McClurkan 1966; Hester 1971, 1990; Nance 1992). Beatriz Braniff (letter to Hester, 1974) also notes these crescents in northern San Luis Potosí and she reports them with



Texas Lower Rio Grande River drainage system and northeast Mexico. Saltillo is some 50 miles southwest of Monterrey.

"pottery settlements which are dated 700 to 900 A.D." The presence of this tool form at El Chorro Falls helps to date at least part of the assemblage. McClurkan (1966:48) found numerous artifacts of this type at Cueva de la Zona, Nuevo León (about 115 km southeast of El Chorro Falls). He reports that "all but one of these specimens were found in the upper foot-and-a-half of the deposit, or within the arrow point horizon," which he dates after 800 A.D.

a

b

Figure 1. Views of the El Chorro Falls Locality. a, rockshelter view; b, El Chorro Falls. Photographs by Evelyn Lewis.

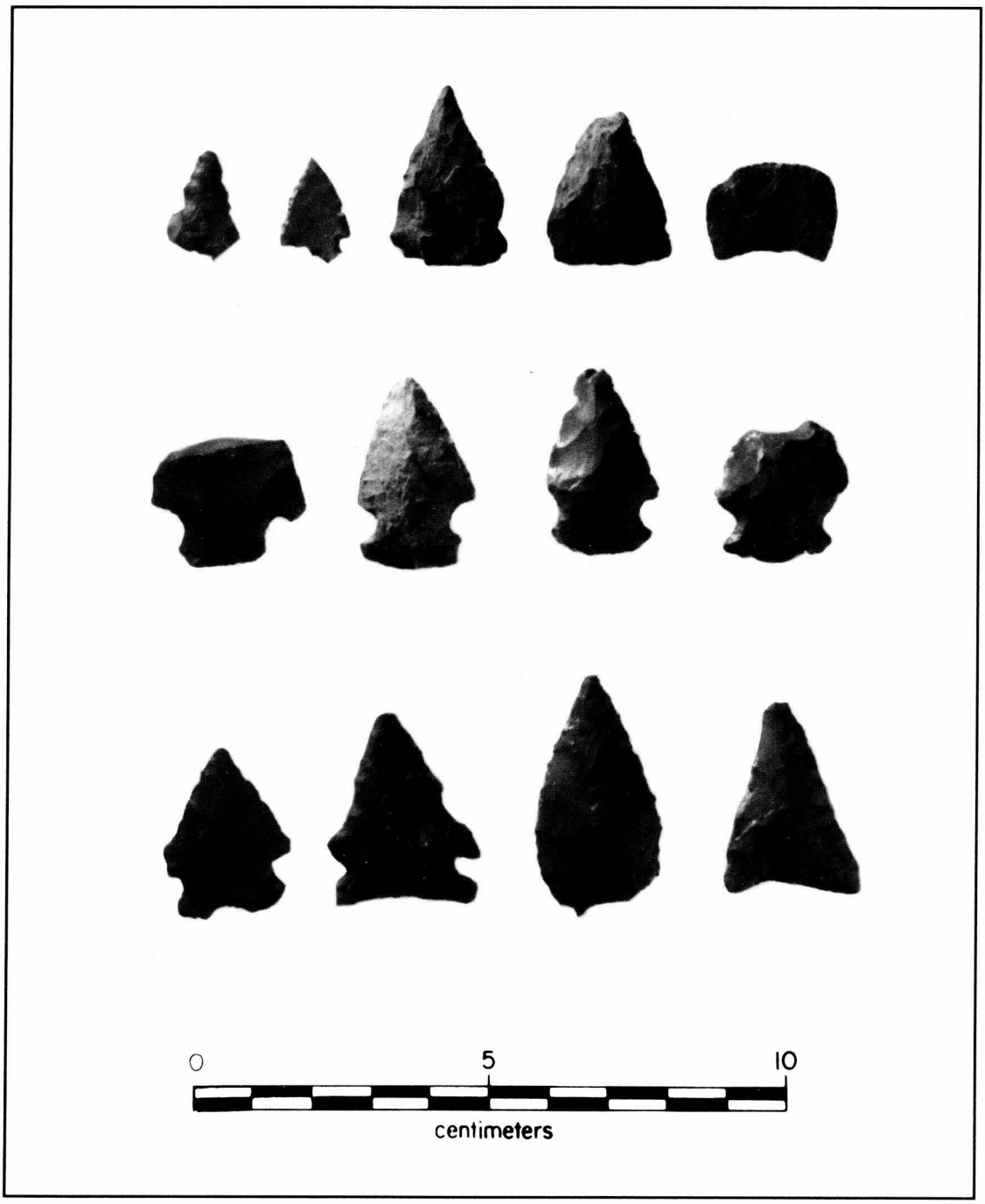


Figure 2. Lithic Artifacts from El Chorro Falls, Coahuila, Mexico. Photo by Elizabeth Andrews, TARL.

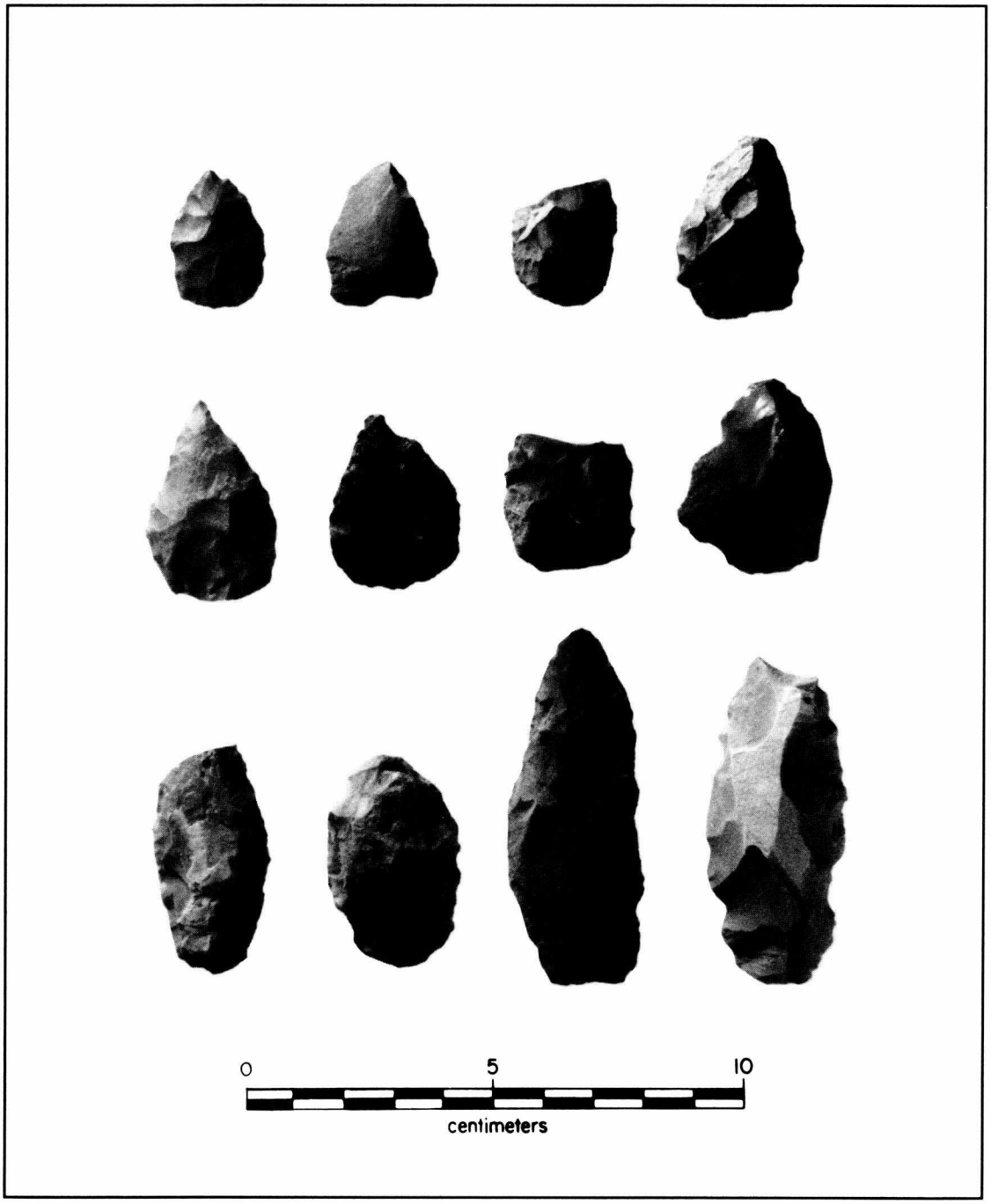


Figure 3. Lithic Artifacts from El Chorro Falls, Coahuila. Photo by Elizabeth Andrews, TARL.

Table 1. Dimensions of Illustrated Artifacts

FIGURE 2	Length	Width	Thickness
Top row,	18	12	3
left to	18	13	1.5
right	30	20	4.5
	25	21	6.5
	16	22	3
Middle row,	21	25	6
left to	32	20	8
right	31	18.5	6
	23	22	5
Bottom row,	28	20.5	6
left to	32	25.5	5
right	39	21	8
	31	22	5
FIGURE 3			
Top row,	28	18	6
left to	28	21	6
right	23	21	7
	37	25	10
Middle row,	41	26	8.5
left to	35	26	7
right	27	26	7.5
	39	30	9.5
Bottom row,	45	22	9
left to	41.5	26.5	10
right	70	27	7.5
	65	27	12

All measurements are in millimeters.

(ibid.:99). Nance (1992) found similar crescents in his upper deposits at La Calzada, Nuevo León, about 35 km from El Chorro Falls, at the other end of the mountain valley. Side-notched points similar to those illustrated here in Figure 2 were numerous at Cueva de la Zona and McClurkan (1966:99-100), who calls them Ensor points, dates them in the early centuries A.D. However (ibid.: 100), they are most numerous in his Period V, along with arrow points and crescents. In summary, the assemblage reported here from El Chorro Falls is likely assignable to a late prehistoric occupation beginning sometime just prior to 800 A.D., with its termination date unclear.

ACKNOWLEDGEMENTS

We are grateful to Elizabeth Andrews of the Texas Archeological Research Laboratory, the University of Texas at Austin, for preparing Figures 2 and 3. The use of the laboratory's photographic facilities for documenting these materials is also acknowledged.

References Cited

Hester, Thomas R.
1971 Hafted Unifaces from Southwestern Coahuila, Mexico. *The Kiva* 36(4): 36-41.

1990 The Status of Archaeology in Northeastern Mexico. *La Tierra* 17(1):4-8.

McClurkan, Burney B.
1966 The Archeology of Cueva de la Zona de Derrumbes: A Rockshelter in Nuevo León, Mexico. MA thesis, Department of Anthropology, University of Texas, Austin.

Nance, C. Roger
1992 *The Archaeology of La Calsada, A Rock shelter in the Sierra Madre Oriental, Mexico*. University of Texas Press, Austin.

PALEO-INDIAN PROJECTILE POINTS FROM THE OLMOS BASIN IN SAN ANTONIO, TEXAS

C. K. Chandler

ABSTRACT

This article reports and illustrates a number of Paleo-Indian projectile points from the Olmos Basin in San Antonio, Texas. They are from private collections in and around San Antonio. Most of them were not known about or illustrated in the 1989 publication *The Archaeology and Early History of the Head of the San Antonio River* and they are reported here to add to the information about the Paleo-Indian period in the San Antonio area.

INTRODUCTION

The 1989 summary of *The Archaeology and Early History of the Head of the San Antonio River* (Stothert 1989) brought together all of the published information about the Paleo-Indian occupation in the Olmos Basin and the occurrence of Paleo-Indian artifacts in other areas of Bexar County. Evidence of the earliest prehistoric peoples in the form of Clovis and Folsom projectile points is so rare that the finding of a single specimen attracts attention.

Nine Folsom points and six Folsom point preforms are known from Bexar County. Seven of the Folsom points and six of the preforms are from the Pavo Real site (41BX52, Henderson 1980). One is from the St. Mary's Hall site (41BX229) on Salado Creek (Hester 1979) and one is from southeast Bexar County (Chandler 1990). The Folsom preform reported here (Figure 4, D, D') increases the known Folsom specimens from Bexar County to 16. It is interesting that no Folsom points are known from Olmos Basin.

Only one Clovis point is published from Olmos Basin. It is in the Collier collection documented by Hester (1975) and was mentioned by Stothert (1989) but not illustrated. Two Clovis points and a possible Clovis basal fragment are reported from the Pavo Real site (41BX52) but none of these have been illustrated.

Two previously undocumented Clovis points in the Kennedy collection from Olmos Basin and the one in the Collier collection are illustrated and described in this report. One complete Clovis point from St. Mary's Hall property on Salado Creek is in a local collection but it has not been available for documentation. Four individuals who have seen this specimen attest to its authenticity. Assuming its validity, this would make a total of seven Clovis points known from Bexar County. Three of these are from Olmos Basin.

THE ARTIFACTS

Frank L. Kennedy Collection

Figures 1 and 2 illustrate eight Paleo-Indian projectile points from the Frank L. Kennedy collection that were dug from near the "Blue Hole" on Incarnate Word College property in the late 1950s and early 1960s. These specimens are now in three different collections and it is fortunate they could be located and obtained for documentation.

Figure 1, A-A', is a complete Clovis point made of good quality light brown and gray chert with a glossy finish and waxy feel that may indicate heat treatment. A light patina is just beginning to show on one side. The distal tip has been broken and lightly retouched for 19 mm producing a tiny alternate bevel. This appears to have reduced its original length by two to three millimeters. Present dimension are: L (Length), 101 mm; W (Width), 25 mm; T (Thickness), 8 mm; Base W, 22.2 mm; W at 10 mm above base, 21.6 mm; edges are heavily ground for 22 mm each side and the base is also ground. Flaking is random to parallel. It is fluted on both faces. The obverse flute is 24 mm long by 12 mm wide. There are two flute scars on the reverse. One scar is 19 mm long and 9 mm wide; the other is 19 mm long and 5 mm wide. The basal concavity is 3 mm. It weighs 23.1 grams.

Figure 1, B-B', is a complete Scottsbluff point made of good to excellent quality light grayish tan chert. There is no patina. Dimensions are: L, 87 mm;

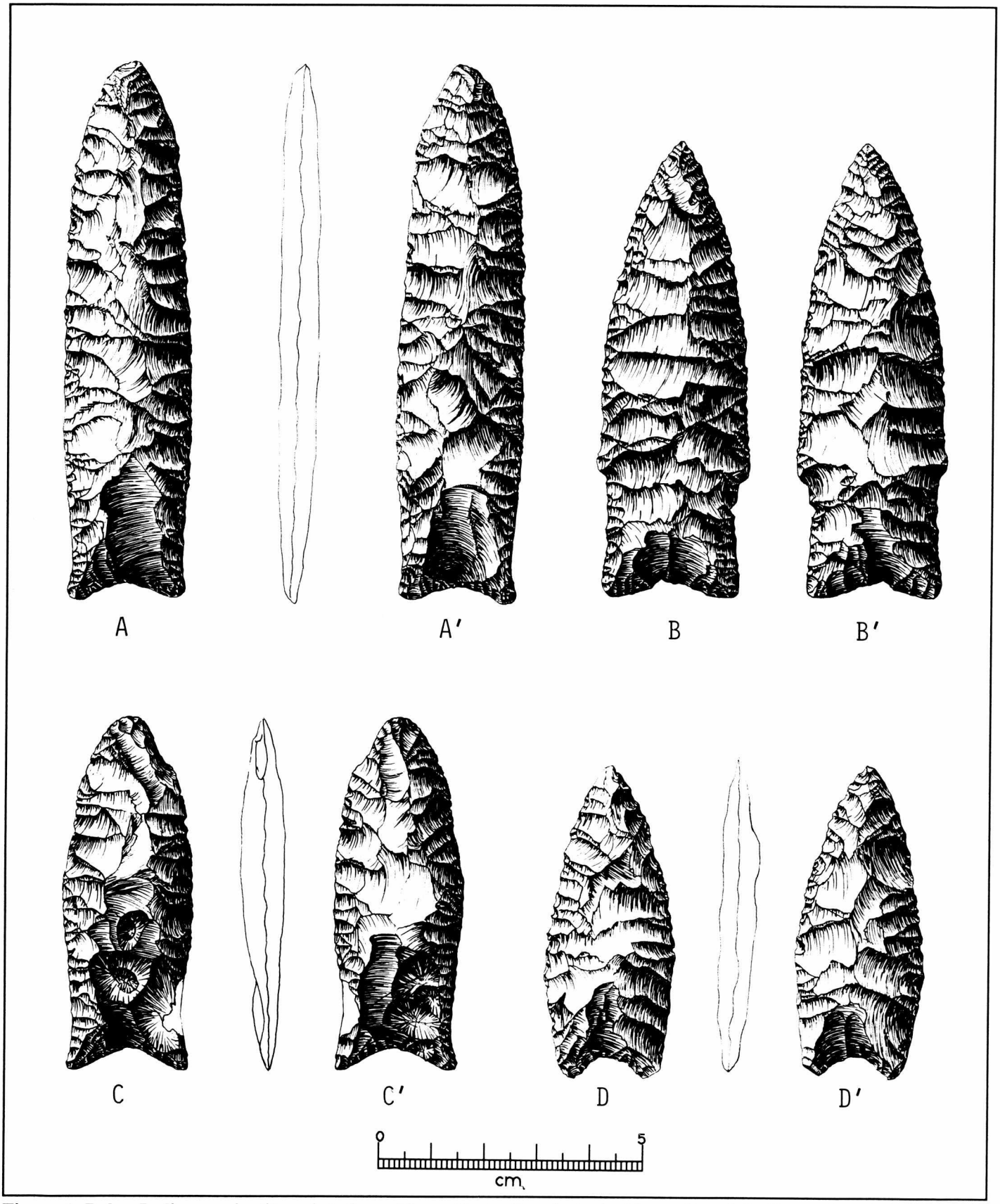


Figure 1. Paleo-Indian projectile points from Olmos Basin, San Antonio, Texas. Frank L. Kennedy collection. A-A', Clovis; B-B', Scottsbluff; C-C', Clovis; D-D', Barber.

W, 29 mm; T, 7 mm; Stem W, 25 mm at shoulders, 26 mm at base. Stem edges and base are lightly ground. Stem L, 23 mm; Basal concavity, 2.5 mm. Flaking is broad parallel with fine edge retouch. It weighs 19.3 grams.

Figure 1, C-C', is a complete Clovis point made of good quality light gray chert with a glossy finish. It is heavily fire-spalled in the proximal area of both faces and one edge. It is fluted on both faces but the width of these flutes cannot be determined because of the fire-spalling. The flute on the obverse is 32 mm long and on the reverse, 25 mm long. Edges are ground for 21 and 23 mm with fine edge retouch. Flaking is irregular. The distal tip has been damaged on one edge and the distal edges retouched for 30 mm with some thinning of both faces for about 17 mm. Dimensions are: L, 66.6 mm; W, 21.5 mm; T, 7.8 mm. The basal ears flare outward for a maximum width of 23 mm. W at 10 mm above base is 20.5 mm. It weighs 14 grams.

Figure 1, D-D', is a complete Barber point made of translucent agatized wood. It is smokey clear in color with longitudinal brown stripes toward one side. Dimensions are: L, 59 mm; W, 24.5 mm; T, 7 mm; Base W, 18 mm; W at 10 mm above base, 21.5 mm. Basal concavity 4 mm. Edges are ground for 22 and 22 mm. Base is not ground. Flaking is irregular. It weighs 10 grams.

Figure 2, A-A', is a complete Early Stemmed Lanceolate point, also called Victoria. It is made of speckled light gray good quality chert. The distal tip is lightly rounded and polished for 8 mm from the end. This may indicate use as a drill or perforator. Dimensions are: L, 81.3 mm; W, 27 mm; T, 17.3 mm. Base W is 15.4 mm with a shallow basal concavity of 2 mm. Stem edges are ground for 20 mm each side. Weight is 17.3 grams.

Figure 2, B-B', is a complete Plainview point made of mixed brown and cream colored chert of good quality with a glossy finish and waxy feel indicative of heat treatment. There are tiny white specks in the brown area that may be the beginning of patina. These white specks do not occur in the creamy areas. Dimensions are: L, 78.5 mm; W, 22.4 mm; T, 6.6 mm; Base W, 17.6 mm; basal concavity 3.2 mm. Weight is 13.2 grams. Lateral edges and base are not ground. Flaking is parallel to irregular.

Figure 2, C-C', is a complete Angostura point made of light gray and tan good quality chert. The distal end is finely pointed and this end is finely reworked for 20 mm. The blade edges are finely serrated. Dimensions are: L, 80 mm; W, 23 mm; T, 7.5 mm. Base W is 12.4 mm with a basal concavity of 2.2 mm. Edges are ground for 16 and 20 mm. Flaking is oblique parallel to irregular. It weighs 14.2 grams.

Figure 2, D-D', is a complete but extensively reworked Angostura point made of glossy brown good quality chert. It has light patina on the obverse and just the beginning of a faint patina on the reverse. Flaking is oblique parallel to irregular. Dimensions are: L, 45.4 mm; W, 23.3 mm; T, 8.6 mm; Weight, 9.2 grams. Edges are ground for 16 and 20 mm.

Arthur S. Collier Collection

Figure 3, A-A', is a complete Clovis point made of uniformly tan excellent quality chert. It has a glossy finish and waxy feel indicative of heat treatment. Flaking is irregular. It is fluted on both faces. The obverse has two flute scars with total dimensions of 10 by 22 mm. The reverse has a single flute scar with a total dimension of 10 by 16 mm. Maximum dimensions are: L, 70 mm; W, 23 mm; T, 7.3 mm; Base W, 17.8 mm; Base concavity, 2 mm. Edges are ground for 30 mm each side. Weight is 12.6 grams.

Figure 3, B, is a nearly complete Plainview point made of medium tan good quality chert. A small sliver is broken off of one side of the base. Flaking is irregular to parallel. Edges are lightly ground for 19 mm. Dimensions are: L, 59.3 mm; W, 22.5 mm; T, 6.6 mm; Base W, 21.6 mm. It has a shallow basal concavity of undetermined depth because of the broken base on one side. Weight is 10 grams.

Figure 3, C, is a complete Early Stemmed Lanceolate point, also called Victoria. It is made of medium tan good quality chert with neat irregular flaking. Dimensions are: L, 81.7 mm; W, 27.4 mm; T, 8 mm; Base W, 14.6 mm; Base concavity, 2 mm. Edges are ground for 20 mm each side. Weight is 17.5 grams. This specimen was found on the surface in the Polo Grounds at Brackenridge Park.

Figure 3, D, is a proximal fragment of a Golondrina point made of good quality tan chert. It appears to be at least one-half of the original length. Both basal ears are broken but the outflaring characteristic of the Golondrina base is readily recognized. Flaking is oblique parallel with the flakes from each edge meeting neatly near the center presenting the appearance of continuous flakes from edge to edge. Dimensions are: L, 47.5 mm; W, 25.5 mm; T, 7 mm. Edges are ground for 24 and 28 mm, but the original length cannot be determined because of the broken basal ears. Weight is 10.9 grams.

Figure 3, E, is a complete Angostura point made of good quality light tan chert. Flaking is irregular. Edges are ground for 20 and 21 mm. Dimensions are: L, 53 mm; W, 16.7 mm; T, 6.7

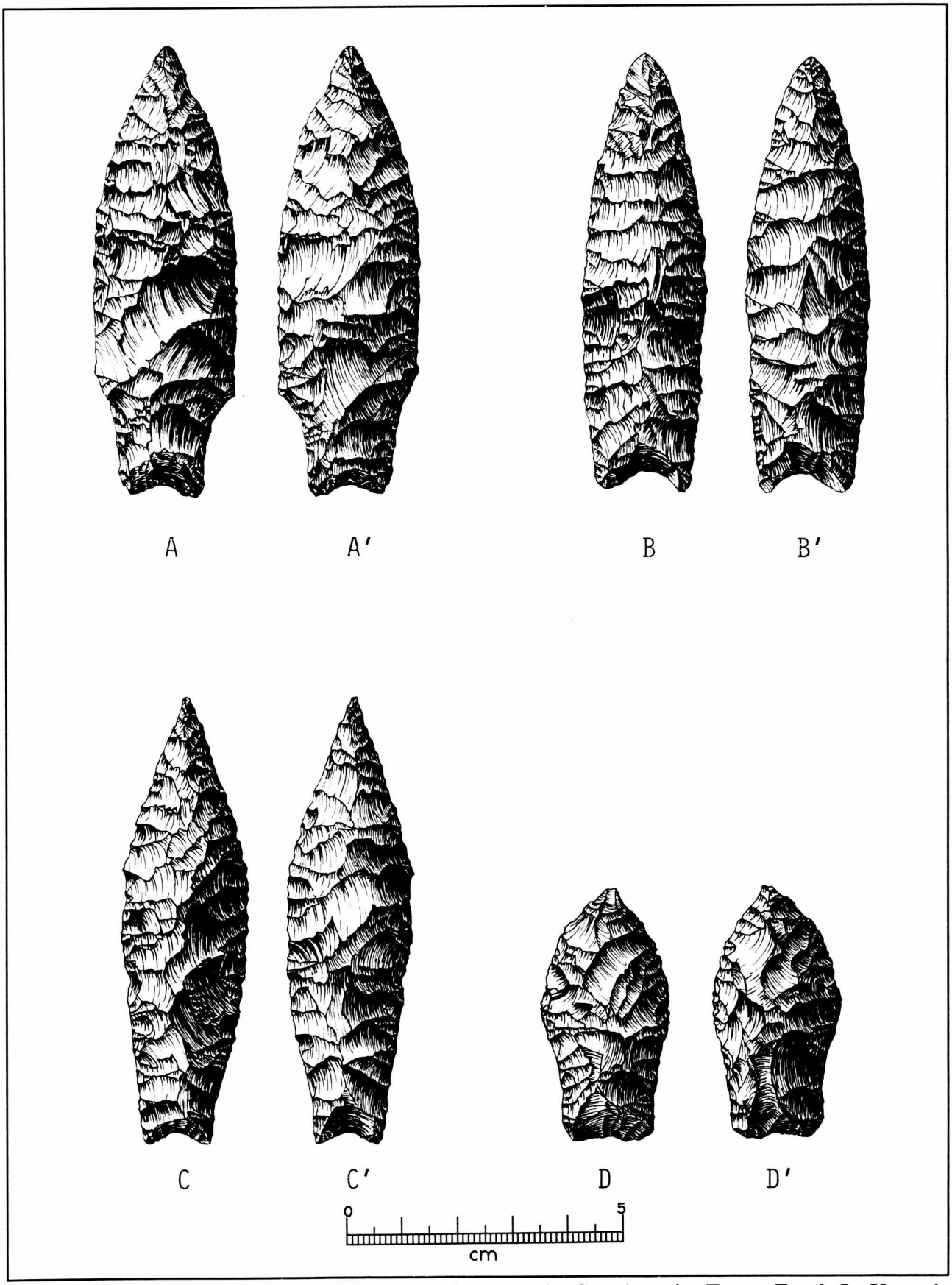


Figure 2. Paleo-Indian projectile points from Olmos Basin, San Antonio, Texas. Frank L. Kennedy collection. A-A', Victoria; B-B', Plainview; C-C', Angostura; D-D', Angostura.

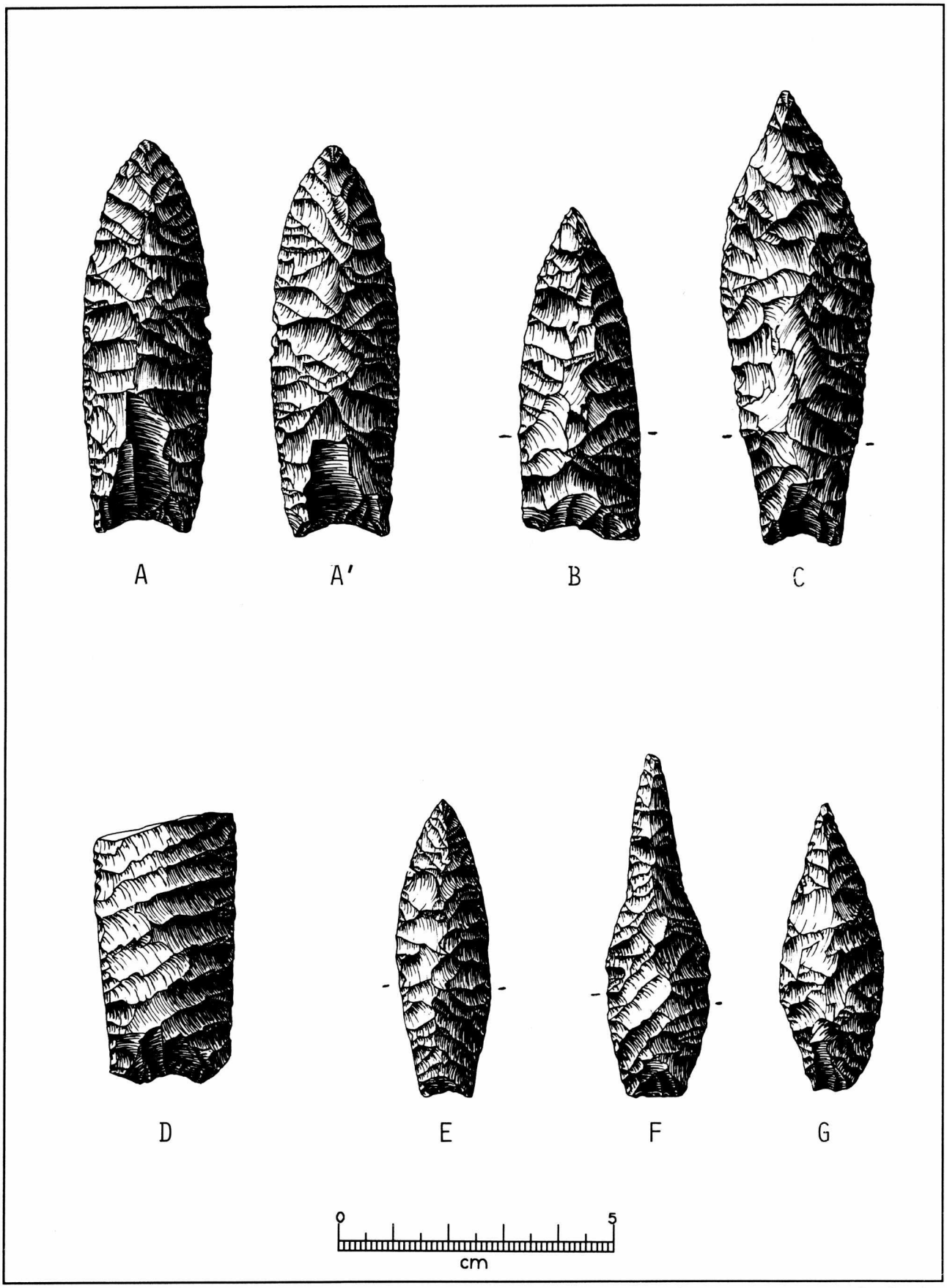


Figure 3. Paleo-Indian projectile points from Olmos Basin, San Antonio, Texas. Arthur S. Collier collection. A-A', Clovis; B, Plainview; C, Victoria; D, Golondrina; E, F, and G, Angostura.

mm; Base W, 9.7 mm; Basal concavity, 1 mm. Weight is 6.4 grams.

Figure 3, F, is a complete Angostura point reworked into a drill or perforator. All surfaces and edges are rounded and polished as if stream-rolled. Flaking is irregular to oblique parallel. Dimensions are: L, 60.5 mm; W, 19 mm; T, 6.3 mm; Base W, 11.5 mm. There is no basal concavity. Edges are ground. Weight is 7 grams.

Figure 3, G, is a reworked Angostura point with all edges and base reworked. There is no edge grinding. It is made of pale grayish white chert. Flaking is irregular. Dimensions are: L, 51.4 mm; W, 19 mm; T, 7.4 mm. Weight is 6.3 grams.

Figure 4, A-A', is a complete Plainview point made of excellent quality tannish gray chert with a glossy finish and waxy feel indicative of heat treatment. The distal end appears to have had an impact fracture and this end has been reworked. Flaking on both faces is oblique parallel. The base is virtually straight having a concavity of less than 1 mm. Base width is 16.5 mm and the basal edges expand slightly to 20 mm above the base where the edge grinding terminates. From there the lateral edges are virtually straight to the reworked distal end. Dimensions are: L, 70 mm; W, 19.8 mm; T, 6.3 mm. Weight is 11.1 grams.

Figure 4, B-B', is an unidentified fragment of a Paleo-Indian projectile point made of uniformly tan good quality chert. A small portion of the base is broken and the distal end has been broken and minimally reworked. One lateral edge has sustained some damage that made gaps in the edge grinding on one edge. The undamaged edge is ground for 21 mm and the damaged edge shows intermittent grinding for 20 mm. Lateral edges are virtually straight and nearly parallel. Flaking is oblique parallel on both faces. Dimensions are: L, 63.7 mm; W, 21 mm; T, 6.2 mm. Weight is 10.8 grams.

Figure 4, C-C', is an unidentified medial blade fragment of a Paleo-Indian projectile point made of light gray excellent quality chert. Both the distal and proximal ends are broken by snap fractures. Flaking is oblique parallel but is not as neatly done as the other specimens in this collection with similar workmanship. Edge grinding 15 mm long survives on both edges. Present dimensions are: L, 53 mm; W, 20 mm; T, 6 mm. Weight is 8.4 grams.

A Folsom Point from St. Mary's Hall, Salado Creek

Figure 4, D-D', is a fragmentary Folsom point from the St. Mary's Hall site, 41BX229 on Salado Creek in northeast San Antonio. It has been previously documented by Hester (1979). The basal corners are broken and the platform nipple for discharging the flutes is missing. The basal concavity has been finely retouched. The distal end is broken by an impact fracture that extends for 9 mm down one face. It is fluted on both faces and the flutes extend full length. Flute widths are 11 mm on the obverse and 10 mm on the reverse. All surfaces are heavily coated with patina. The parent material appears to be light tan chert. Maximum dimensions are: L, 28.4 mm; W, 20 mm; T, 3.3 mm. Thickness in the fluted area is 2.8 mm.

Kit Corbin Collection, Olmos Basin

Figure 5, A, B, and C are Angostura points surface-collected by Kit Corbin from the Bracken-ridge Park golf course in the Olmos Basin in San Antonio.

Figure 5, A, is a nearly complete Angostura point made of mottled grayish tan and red chert of good quality. The distal end is broken and shows minor evidence of efforts to rework. Flaking is irregular to parallel. Dimensions are: L, 68.4 mm; W, 27 mm; T, 9 mm; Base W, 16 mm. Weight is 18.7 grams. Edges are ground for 21 and 24 mm. It has a shallow basal concavity of less than 1 mm.

Figure 5, B, is a fragmentary portion of an Angostura point made of light grayish tan to brown good quality chert. The distal end is broken above midway of the blade and one blade edge has a long burin scar that may be from an impact fracture. Flaking is oblique parallel to irregular. The base also has some damage. Dimensions are: L, 52.4 mm, W, 21 mm; T, 8 mm; Base W, 11 mm. Weight is 8.1 grams. Edges are ground for 16 and 20 mm.

Figure 5, C, is a fragmentary portion of an Angostura point made of light grayish tan good quality chert. The distal end is broken by a snap fracture and exhibits two large scars which may be efforts to rework this end to restore a point. The blade edges show to have been reworked at some prior time, probably due to a damaged distal tip. There is also some damage to the proximal end but this is very minor. Flaking is long oblique parallel to irregular.Edges are ground for 22 and 24 mm. Dimensions are: L, 55 mm; W, 20 mm; T, 8.5 mm; Base W, 11 mm. Basal concavity, 1 mm. Weight is 8.8 grams.

Kit Corbin Collection, Salado Creek

Figure 5, D-D', is a basal fragment of a Folsom preform. All surfaces are heavily coated with white patina. It is fluted on both faces and a portion of the basal nipple is present. It was broken during manufacture, probably in the process of discharging

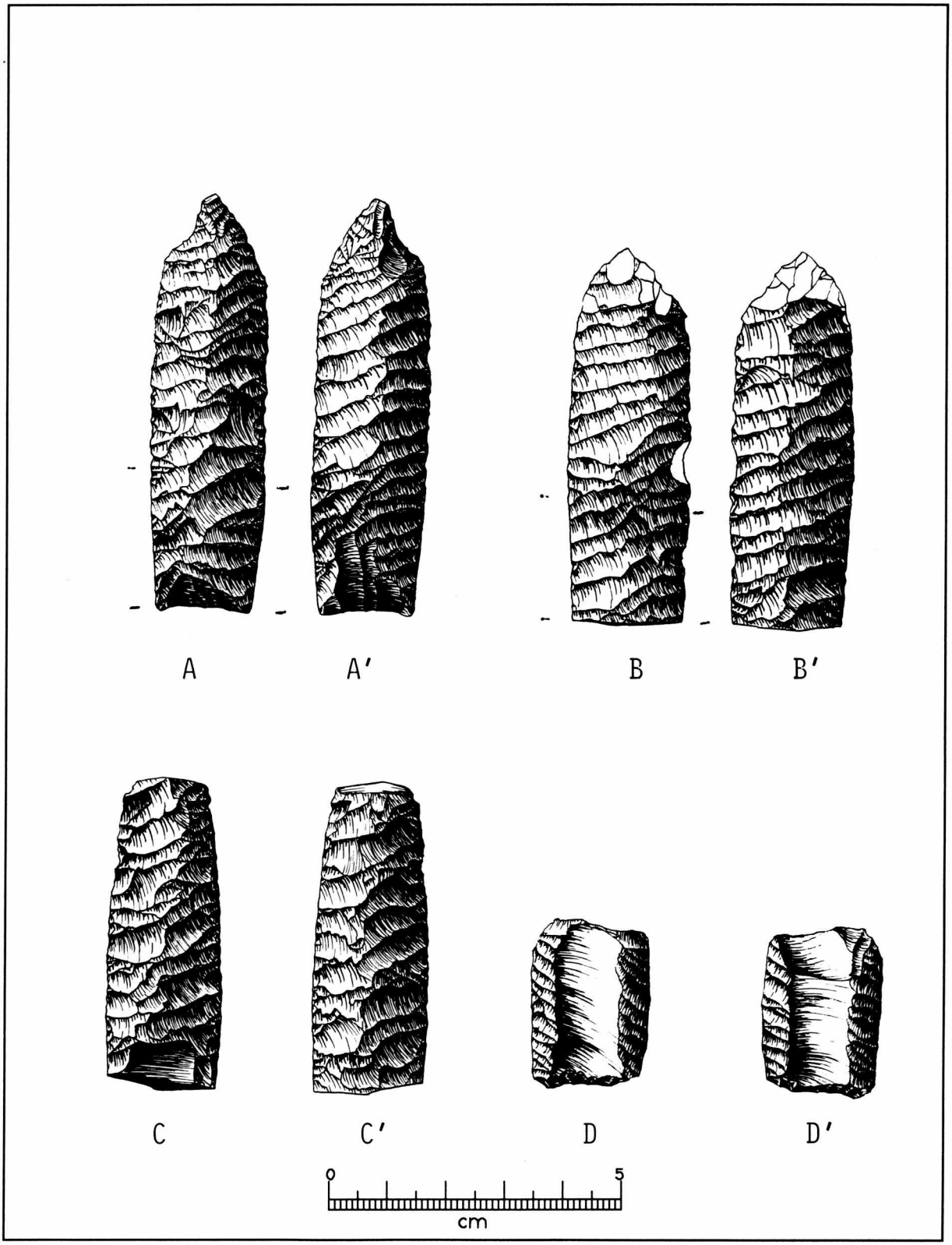


Figure 4. Paleo-Indian points from Olmos Basin, San Antonio, Texas, Arthur S. Collier Collection: A-A', Plainview; B-B', unidentified Paleo-Indian point; C, C', unidentified Paleo Indian point. From St. Mary's Hall site, Salado Creek: D-D', Folsom point.

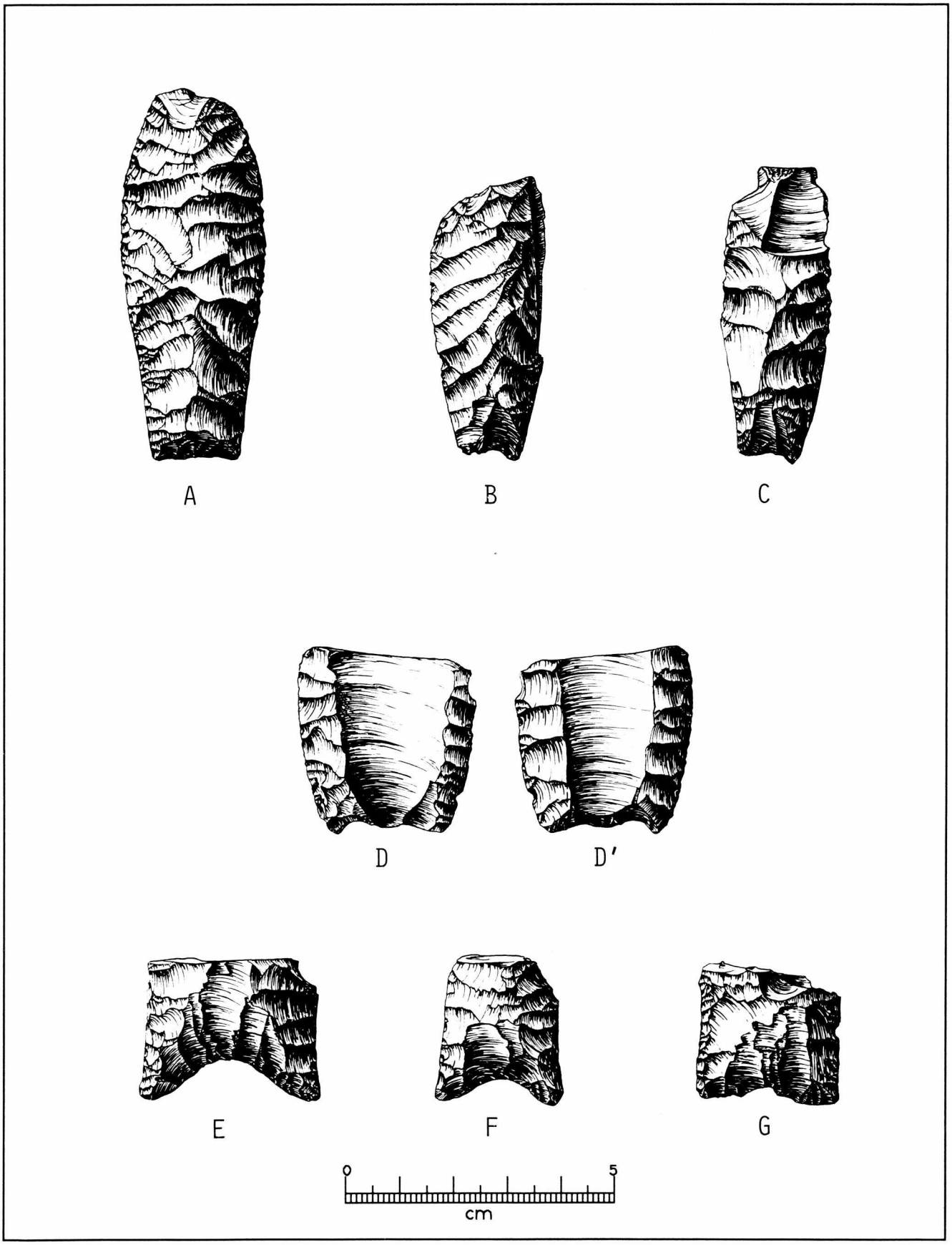


Figure 5. Paleo-Indian points, Kit Corbin collection. From Olmos Basin, San Antonio: A, B, C, Angostura; From Salado Creek, D-D', Folsom; E, F, Golondrina; G, Scottsbluff.

the second flute. Dimensions are: L, 34 mm; W, 32.8 mm; T, 4.9 mm; thickness in the fluted area is 3.6 mm. Base W is 22.4 mm; Weight, 6.9 grams. The quality and color of the material is undetermined due to the heavy surface patina but the material is almost certainly chert.

Figure 5, E, is a basal fragment of a Golondrina point made of good quality medium tan chert. Edges are ground for 20 and 22 mm. Flaking is irregular to parallel. Dimensions are: L, 26.5 mm; W, 31.6 mm; Base W, 33.4 mm; T, 4.6 mm; Basal concavity 8 mm. Weight is 5.4 grams.

Figure 5, F, is a basal fragment of a Golondrina point made of light tan good quality chert with a glossy finish and waxy feel indicative of heat treatment. It appears to have been broken and distally reworked prior to its more recent breakage. Flaking is irregular to parallel. Edges are ground for 19 and 24 mm and the base is ground. Dimensions are: L, 27 mm; W, 21 mm; T, 7 mm; Base W, 23.6 mm; Basal concavity, 6 mm. Weight is 5 grams.

Figure 5, G, is a basal fragment of a Scottsbluff point made of good quality brown chert having a glossy finish and waxy feel indicative of heat treatment. Flaking is irregular to parallel. The base is thinned by several large vertical thinning flakes. Basal concavity is undetermined due to a small broken area of the base edge. Dimensions are: L, 5.3 mm; W, 26.5 mm; T, 6 mm; Base W, 26.7 mm. Weight is 5 grams. Edges are ground for 20 and 20 mm. A small remnant of one shoulder survives.

The above four specimens were surface-collected by Kit Corbin from an unrecorded site on the bank of Salado Creek north of Highway 1604.

SUMMARY

A number of previously unknown Paleo-Indian projectile points from the Olmos Basin and others from Salado Creek in San Antonio and Bexar County have been illustrated and described. They include examples from earliest Paleo times in excess of 11,000 years ago (Clovis, Folsom) with evidence of continuing Paleo-Indian presence (Plainview, Scottsbluff, Barber, Golondrina, Victoria and Angostura) into Archaic times in the Olmos Basin and other areas of Bexar County.

ACKNOWLEDGEMENTS

I extend my sincere appreciation to Frank and Gloria Kennedy for the loan of their artifacts and their help in locating the other specimens from their collection. I also thank Arthur S. Collier for maintaining his collection intact over a great number of years and for his permission to redocument a collection that was previously recorded. I thank Kit Corbin for the loan of his specimens and am most grateful to Richard McReynolds for his preparation of the illustrations.

References Cited

Chandler, C. K.
1990 A Folsom Point from Bexar County. *La Tierra* 17(2):12-13.

Henderson, Jerry
1980 A Preliminary Report of Texas Highway Department Excavations at 41BX52: The Paleo Component. *Texas Acheology* 24:14-15.

Hester, Thomas R.
1975 Notes on the Collier Collection from the Southern Olmos Basin. An Appendix to *An Archaeological Assessment of the Southern Portion of the Olmos Basin, Bexar County, Texas* by Anne A. Fox. The Center for Archaeological Research, The University of Texas at San Antonio, Archaeological Survey Report 9.

1979 Early Populations in Texas. *Archaeology* 32(6):26-33.

Stothert, Karen E.
1989 *The Archaeology and Early History of the Head of the San Antonio River.* Southern Texas Archaeological Association, Special Publication No. 5, and Incarnate Word College Archaeology Series No. 3, San Antonio, Texas.

HARDING BLACK: POTTER AND EARLY EXCAVATOR AT SHUMLA AND EAGLE CAVES

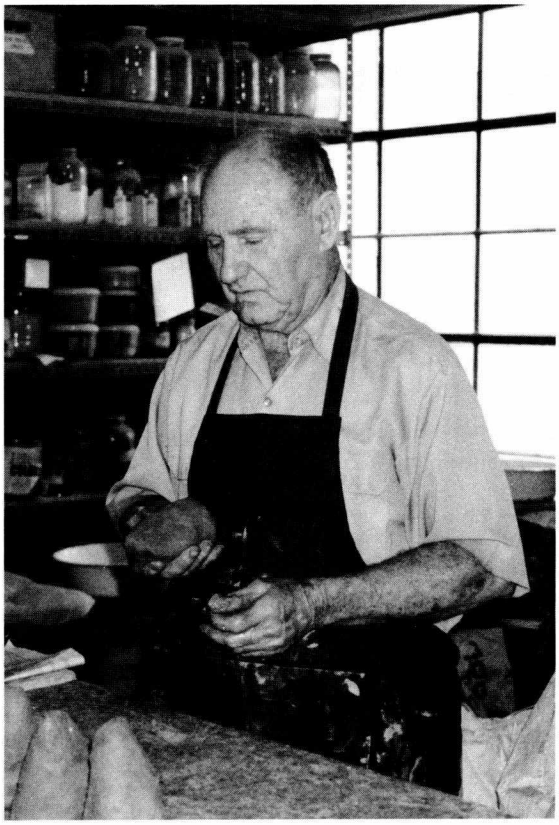
Ellen Sue Turner

March 13, 1994, the exhibition *Sixty Years of Pottery: The Private Collection of Harding Black* opened at the Center for Antiques, 8505 Broadway, in San Antonio. Some 150 pieces are in the exhibit, choices personally selected by Harding Black to demonstrate some of the beautiful and unusual glazes he has developed and perfected in the past 60 years. The Friends of Harding Black are raising money to finance a permanent home, hopefully in a local museum, to house the collection along with his test pieces and glaze formulas.

Michael W. Monroe, Curator-in-Charge of the Renwick Gallery of the National Museum of American Art, Smithsonian Institution, wrote to congratulate Black on the occasion of his show for the significant contribution he has made to the history of ceramic art in America. Monroe said:

> I have long admired your study and long commitment to perfecting the magic union of exquisitely wheel-thrown vessels with sensuously colored glazes. The many pieces you have created throughout your distinguished career speaks eloquently to beauty of classical forms enhanced by some of the most beautiful and compelling glazes known to contemporary ceramicists.

Octogenarian Black's archaeological experiences date back to the Depression years when he was one of the earliest participants in field work and archaeological research in the Lower Pecos region of Texas. During an informal interview, he told the author that he started collecting "arrowheads" along the Medina River in his Boy Scout days. In 1930



Harding Black

Mrs. Ellen Schultz Quillin, Witte Memorial Museum Director, hired Black fresh out of high school to conduct children's pottery classes at the museum. The Southwest Texas Archaeological Society had just been formed at the museum by Sam Woolford, editor of the San Antonio *Light*, and Black joined.

Scouting expeditions from universities and institutions in Texas and other parts of the country were going on in the Lower Pecos and Mrs. Quillin decided that the museum must act at once if they were to rescue anything from the area. She managed to finance the first expedition with food and money from the citizens of San Antonio who responded with donations of beans, coffee and $90.00 in cash (McGregor 1985). Between 1931 and 1936 Quuillin found sponsorship for several expeditions. She chose two full-time museum employees for key positions in the excavations: Jack Davenport, an artist, carpenter and mechanic; and Harding Black, a potter. Black was selected to be one of the pick-and-shovel men. The crew were all members of the newly formed Southwest Texas Archaeological Society and they uncovered a number of burials on that first trip. Black said:

> Fifteen minutes after I started digging, I found a burial. I just stood there yelling. The rest of the crew came running because they thought that I had been rattlesnake-bit.

In 1933 nine shelters, designated the Shumla Caves, were investigated in the vicinity of the junction of Milo Canyon with the Rio Grande, just below the town of Shumla in Val Verde County. The Shumla Caves produced an unsurpassed collection of basketry and perishable materials dating mainly to the Middle and Late Archaic (Schuetz 1956; McGregor 1985).

In 1935, Black and Davenport made the first test excavations at Eagle Cave (Davenport 1938). While the Shumla Caves produced mostly artifacts of basketry, Eagle Cave produced mostly flint (Schuetz 1956). Three hundred and sixty two Langtry points were found at Eagle Cave and 99 Langtry deviations–"sufficiently distinctive from 'typical' Langtry points to warrant, I feel, a new type name: Val Verde points, perhaps' (Schuetz 1956:141). The artifacts and reports that Black and Davenport brought back to the museum are of great value to students and researchers. M. Schuetz, R. McGregor and J. W. Davenport have covered stories of the expeditions and analysis of cave material in their 1956, 1985, and 1938 manuscripts.

Black conducted his first pottery classes in San Antonio's last street car, which was housed in the back yard of Witte Museum. The children were charged 10¢ a class. Soon, adults were asking for pottery classes but there wasnn't enough room in the old streetcar. Black said that "It took a hurricane to provide room for the adult classes." A hurricane blew the roof off the Ruiz house located on Military Plaza (once the homestead of José Francisco Ruiz, one of two native Texans who signed the Texas Declaration of Independence on March 2, 1836). Architect Henry Steinbomer took careful measurements before the house was turn down and rebuilt behind the Witte Museum. The total cost for moving and reconstructing the Ruiz house was $7,000 and it furnished room enough for a pottery workshop and classroom. Soon after adult pottery classes began under Harding Black, the Craft Guild of San Antonio was formed.

Louis Marshall and Bob Doyal, two of the founders of the Friends of Harding Black and currently pottery students of Black's, said, "Harding Black is truly a national treasure."

References Cited

Davenport, J. Walker
1938 Archaeological Exploration of Eagle Cave, Langtry, Texas. *Witte Memorial Museum, Bulletin* 4. San Antonio.

McGregor, Roberta
1985 Episodes in the History of Texas Archeology: Excavations at Shumla and Eagle Caves, Witte Memorial Museum. *Bulletin of the Texas Archeological Society* 56:128-142

Schuetz, Mardith K.
1956 An Analysis of Val Verde Cave Material: Part II. *Bulletin of the Texas Archeological Society* 31:167-205.

CHRONOLOGIES IN SOUTHEAST TEXAS: A RESPONSE TO RICKLIS

Leland W. Patterson

ABSTRACT

In reply to comments by Ricklis (1993) on data from SoutheastTexas, evidence is discussed for the concurrent use of the spear and bow and arrow during the Late Prehistoric period of inland Southeast Texas. Some comments are also given on the chronology of the Perdiz point in Southeast Texas, and on the possible technological origin of bone-tempered pottery in Central Texas.

INTRODUCTION

I have made some comments (Patterson 1993) on a paper by Ricklis (1992) in regard to the adoption of a Toyah Phase lithic tool kit by Indians of the Rockport Phase in the Corpus Christi Bay area. My comments were not directed at the main conclusions of Ricklis' generally well-done study, but rather at Ricklis' comments on the original sources of the Perdiz point and bone tempered pottery found in the Toyah Phase. Ricklis (1993) has responded to my comments with questions on the basis of the data for the chronology of the Perdiz point in Southeast Texas, and on the basis for the origin of bone tempered pottery in Central Texas being related to bone tempered pottery from Northeast Texas.

I do not wish to engage Ricklis in a prolonged debate on the relative merits of his ideas and mine. Ricklis (1993) has raised some questions on data from Southeast Texas, however, that may be of interest to readers of *La Tierra* who are not familiar with the archaeology of Southeast Texas. There are differences in the chronologies of certain artifact types in South, Central, and Southeast Texas. A good example is that Southeast Texas has an Early Ceramic period (A.D. 100-600), before the start of bifacial arrow points, that is not found in South or Central Texas.

CONCURRENT USE OF THE SPEAR AND BOW AND ARROW

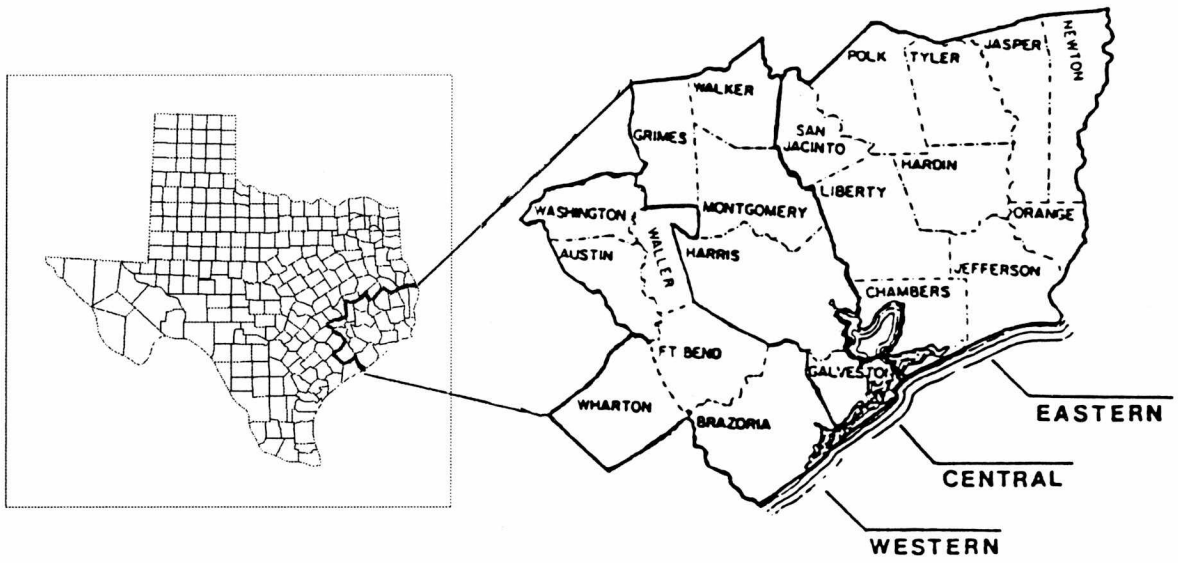
Ricklis (1993:34) has pointed to the occurrence of dart and arrow points in the same excavation levels at sites 41WH19 and 41HR315 as evidence of stratigraphic mixing. Actually, the occurrence of dart and arrow points together is normal for inland Southeast Texas. Aten (1983:306) notes that dart points are not found in the Late Prehistoric period (after A.D. 600) on the upper Texas coastal margin, but that dart points continued in use in inland Southeast Texas along with arrow points in the Late Prehistoric.

Most major excavations in inland Southeast Texas have evidence of the concurrent use of the spear and bow and arrow weapon systems in the Late Prehistoric. Examples are sites 41SJ160 (Keller and Weir 1979:Table 3), 41MQ6 (Shafer 1968: Table 4), 41PK8,89 (McClurkan 1968:Tables 4,23), 41HR273 (Ensor and Carlson 1991), 41HR5,7 (Wheat 1953:Table 5), 41LB2 (Aten 1967:Table 3), 41FB42 (Patterson et al. 1993), 41HR315 (Patterson 1980:Tables 3,6), and 41WH19 (Patterson et al. 1987:Table 2). It should also be noted that Southeast Texas is part of traditions of the greater Southeast Woodlands, and that there is ethnographic evidence for use of the spear and spear-thrower (atlatl) in historic time in the Southeast, not too far from Southeast Texas. In 1543, Spaniards were attacked by Indians using six-foot spears with spear-throwers on the Gulf Coast at the Mississippi River (Hudson 1976:116).

In summary, there is a large body of data supporting the concurrent use of the spear and bow and arrow in inland Southeast Texas during the Late Prehistoric. This situation does not seem to be widely recognized by archaeologists from outside of Southeast Texas.

CHRONOLOGY OF THE PERDIZ POINT IN SOUTHEAST TEXAS

There seems to be continuing problems with archaeologists from Central and South Texas recognizing that the Perdiz point started earlier in Southeast Texas than in Central Texas. A starting date of about A.D. 600 for the Perdiz point in Southeast Texas is taken from Aten's (1983:306) estimate for the starting date of arrow points in the Galveston Bay area, and the fact that Perdiz is the



Texas maps showing area of discussion.

most frequently used arrow point type during all portions of the Late Prehistoric period in Southeast Texas. Aten's chronological estimate for the start of arrow points on the upper Texas coast is based on data from excavated shell middens, including radiocarbon dates. In the mid-1992 computerized data base that I maintain for the Southeastern Texas coastal margin, there is a total of 268 Perdiz points (80%), and 66 specimens of other arrow point types (20%). For the inland subregion data base, there are 824 (46.7%) Perdiz points, 128 (7.3%) Scallorn points, 228 (12.9%) Catahoula points, 316 (17.9%) Alba points, and 268 (15.2%) other arrow point types.

At site 41HR273 (Ensor and Carlson 1991: Tables 15,16) in inland Southeast Texas, the Perdiz point starts between A.D. 600 and A.D. 800, based on stratigraphy and radiocarbon dates. The site report authors seem to discount Perdiz specimens in strata dated earlier than A.D. 800 (Ensor and Carlson 1991:215), but there does not seem to be any compelling reason to do this. Even at the conservative estimate of A.D. 800, the Perdiz point is much earlier here than in Central Texas.

Based on radiocarbon dates of 1410±190 B.P. (A.D. 540) and 970±120 B.P. (A.D. 980), McClurkan (1968:11) estimates that the bow and arrow started at about A.D. 800 at site 41PK8 in Polk County. At this site, the Perdiz point occurs at the earliest stratigraphic level that contains arrow points.

There are several sites in Southeast Texas where the Perdiz point is, stratigraphically at least, as early as any other arrow point type (Patterson 1991), such as 41HR5 (Wheat 1953:Table 5). Aten's (1983:306) estimate for the starting time of bifacial arrow points at A.D. 600 in Southeast Texas has not received any significant challenge, and stratigraphy places the Perdiz point at several sites at the general arrow point starting date.

Ricklis (1993:34) questions the accuracy of a radiocarbon date on mussel shell from site 41WH12 (Patterson and Hudgins 1989). There is no correction factor established for mussel shell dating at this inland area. Randolph Widmer (personal communication) of the University of Houston feels that a correction factor would not be needed, based on his extensive experience on radiocarbon dating of shell in Florida. In any event, the radiocarbon date of A.D. 900±80 represents another possible example of the Perdiz point being earlier in Southeast Texas than in Central Texas. It should be noted that there was a Perdiz point in the stratum below the stratum with the radiocarbon date, which would give the Perdiz point a somewhat earlier placement than the radiocarbon date.

BONE TEMPERED POTTERY

In linking Leon Plain bone tempered pottery of Central Texas with an origin in Northeast Texas, I seem to have used an inappropriate example (Patterson 1993:28). As Ricklis (1993: 36) notes, bone tempered pottery of Central Texas is not well connected with the earliest bone tempered pottery of Central Texas, used in my previous example. Leon Plain pottery still seems to be linked to a technological origin in Northeast Texas, but the most appropriate relationship is with Caddo pottery, which started between A.D. 700 and A.D. 900 (Story 1990:247). Leon Plain pottery is sometimes found with Caddo pottery (Suhm and Jelks 1962: 95). At site 41WH12, some bone tempered pottery of the Leon Plain type has Caddo-like incised patterns (Patterson and Hudgins 1989).

SUMMARY

All available evidence places the start of the Perdiz point between A.D. 600 and A.D. 800 in Southeast Texas, which is earlier than the approximately A.D. 1200 start of the Perdiz point in Central Texas (Prewitt 1983). There is no basis for using Central Texas chronology in Southeast Texas for this point type. It has also been noted that archaeologists outside of Southeast Texas are generally not familiar with the concurrent use of the spear and bow and arrow in Southeast Texas.

My opinion is that bone tempered pottery of Central Texas is related technologically to the Late Prehistoric Caddo pottery of Northeast Texas. Future research may yield more data on this subject.

It is my view that critical debates form an essential part of the archaeological literature. The debate between Ricklis and Patterson noted here is a good example of discussions leading to more detailed examination of some subjects. Science in general follows the format of proposed models and interpretations being followed by critical debate.

References Cited

Aten, L.E.
1967 Excavations at the Jameson Site, Liberty County, Texas. *Houston Archeological Society, Report No.* 1.

1983 *Indians of the Upper Texas Coast.* Academic Press.

Ensor, H.B. and D.L. Carlson
1991 *Alabonson Road: Early Ceramic Period Adaptations to the Inland Coastal Prairie Zone, Harris County, Southeast Texas.* Archeological Research Laboratory, Texas A&M University, Reports of Investigations No. 8.

Hudson, C.
1976 *The Southeast Indians.* University of Tennessee Press.

Keller, J.E. and F.A. Weir
1979 *The Strawberry Hill Site.* Texas State Department of Highways and Public Transportation, Publications in Archeology, Report No. 13.

McClurkan, B.B.
1968 *Livingston Reservoir, 1965-66: Late Archaic and Neo-American Occupations.* Papers of the Texas Archeological Salvage Project, No. 12, Austin.

Patterson, L.W.
1980 The Owen Site, 41HR315: A Long Occupation Sequence in Harris County, Texas. *Houston Archeological Society, Report No.* 3.

1991 Arrow Point Chronologies in Southeast Texas. *Houston Archeological Society Journal* 101:6-11.

1993 Comments on Ricklis' Study of the Toyah Phase on the South-Central Texas Coast. *La Tierra* 20(1):27-30.

Patterson, L. W. and J. D. Hudgins
1989 Excavations at Site 41WH12, Wharton Co., Texas. *Houston Archeological Society Journal* 95:1-11.

Patterson, L. W., J. D. Hudgins, R .L. Gregg and W. L. McClure
1987 Excavations at Site 41WH19, Wharton County, Texas. *Houston Archeological Society, Report No.* 4.

Patterson, L. W., J. D. Hudgins, R. L. Gregg, S. M. Kindall, W. L. McClure and R. W. Neck
1993 Excavations at the Ferguson Site, 41FB42, Fort Bend County, Texas. *Houston Archeological Society, Report No.*10.

Prewitt, E.R.
1983 From Circleville to Toyah: Comments on Central Texas Chronology. *Bulletin of the Texas Archeological Society* 54:201-238.

Ricklis, R.A.
1992 The Spread of a Late Prehistoric Bison Hunting Complex: Evidence from the South-Central Coastal Prairie of Texas. *Plains Anthropologist* 37(140):261-273.

1993 Looking at the Data: A Response to Patterson. *La Tierra* 20(4):33-38.

Shafer, H.J.
1968 *Archeological Investigations in the San Jacinto River Basin, Montgomery County, Texas.* Papers of the Texas Archeological Salvage Project, No. 13, Austin.

Story, D.A.
1990 *Cultural History of the Native Americans.* In: Story et al., Archeology and Bioarcheology of the Gulf Coastal Plain, Arkansas Archeological Survey, Research Series No. 38.

Suhm, D.A. and E.B. Jelks
1962 *Handbook of Texas Archeology: Type Descriptions.* Texas Archeological Society, Special Publication No. 1.

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

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DISCOVER PROGRAMS AT BUTT-HOLDSWORTH MEMORIAL LIBRARY

In a return engagement to Butt-Holdsworth Memorial Library, Dr. Thomas Hester, Director of the Texas Archeological Research Laboratory, Balcones Research Center at the University of Texas at Austin, spoke to the DISCOVER program audience on Thursday evening, April 14, 1994. In a slide-illustrated lecture Dr. Hester reviewed the advances and the current problems in the archaeology of Central Texas in conjunction with Texas Archeology Awareness Week, April 9 - 16.

DISCOVER programs are designed for adults and older students, and are held each month on the second Thursday in the downstairs meeting room of the library, 7 - 8 p.m., at Butt-Holdsworth Memorial Library, 505 Water Street, Kerrville. There is no admission charge. Call the library at 210-257-8422 for more information.

REPORT FROM A 1993 SCHOLARSHIP RECIPIENT

Stephen Troell

Dear Association Members:

I deeply appreciate the $200 grant which allowed me to return to the Southwest Texas State University dig in Belize to complete the archaeological project we began in 1990. The grant paid for two-thirds of my living expenses there.

The project, conducted during the past four summers, was to map and excavate the Blackman Eddy site near San Ignacio. Our findings revealed a Maya site of moderate size--larger than expected. Our most significant find was a portion of a stele which is one of the oldest ever found. This find is mentioned in the Time-Life Books series, *Lost Civilizations*, in the book "The Magnificent Maya," pp. 12-13:

> "In 1991, for example, archaeologists working in Belize came across a stele bearing symbols that they thought might correspond to a date of 146 B.C, which would make it the oldest Maya stele ever found and the earliest evidence of any sort of historical record-keeping in Maya territory. The markings were badly eroded, however, and other scholars have disputed the interpretation; nevertheless, other recent discoveries tend to support the notion that Maya society rose to a sophisticated level far earlier than had been imagined."

Since that time, a cast was made of the eroded stele and while it is not quite as old as first thought, it is still one of the oldest ever found.

At the end of our dig in the summer of 1992, we discovered a *chultun*, or man-made cave. My purpose in returning in 1993 was to supervise its excavation (Figure 1). We were able to tell from artifacts recovered that it was used during the Late Classic period. Excavating one of the mounds in the *plazuela* (Figure 2) also revealed diagnostic artifacts of that period.

Figure 1. Stephen Troell, emerging from a *chultun*, a man-made cave in Belize, during excavations there in 1992.

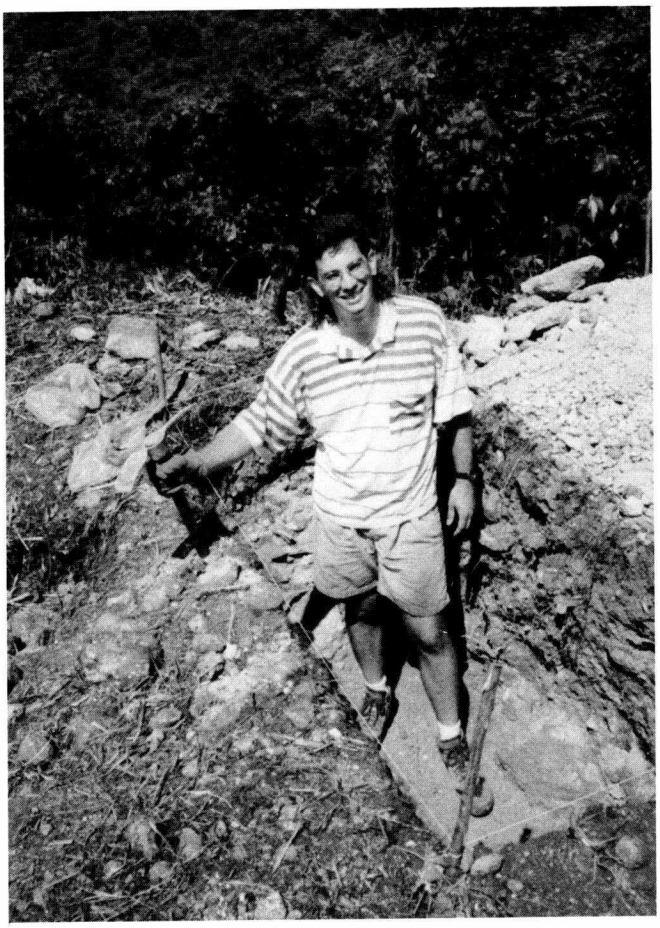


Figure 2. Steven standing in an excavation pit of one of the mounds in the *plazuela* during excavations in Belize in 1992.

The *chultun* had a center chamber with a chamber to the west, a niche to the east, and a sill to the south to keep out water. This led to the large southern chamber which yielded a surprise--steps leading down to what appeared to be an interior bench. The bottom of the floor contained darker gray soil. Samples were taken to try to determine what may have been stored there. Two lithic tools, currently unidentified, were also found.

I should add that while excavating the *chultun*, a large black snake, chasing a mouse, dove into the *chultun* between my legs and coiled up under my feet. I set a new record for exiting a *chultun*, which may appear in the Guiness Book of World Records.

Currently, I am enrolled in graduate school at Texas Tech and am working on the Mission Santa Cruz de San Sabá project.

Associations like yours, which are willing to provide funding, ensure the continuation of important archaeological and historical projects such as these.

Sincerely,

Stephen "Waldo" Troell

GROUND STONE ORNAMENTS OF THE LOWER RIO GRANDE

C. K. Chandler and Don Kumpe

ABSTRACT

A number of ground stone ornaments from the lower Rio Grande are reported and illustrated. Both rectangular and triangular forms are represented. These artifacts were recovered from sites in Starr and Zapata Counties in Texas and in northern Tamaulipas and northeastern Nuevo León, México.

THE ARTIFACTS

There are fifteen specimens in this group. Five are triangular in form and they are illustrated actual size in Figure 1. Two of these are complete. The other three are fragmentary.

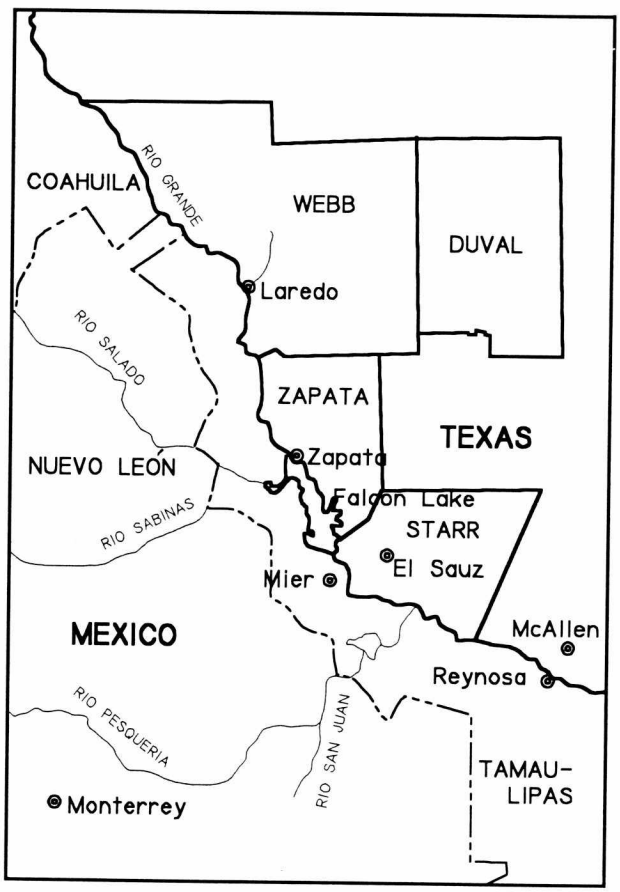
Figure 1, A is a large fragment of a triangular pendant with two drilled holes at the wide end. It is made of light grayish tan, fine-grained sandstone. It is from along the Río Alamo west of Mier in northern Tamaulipas, México. Its dimensions are: L (Length), 38 mm; W (Width), 34 mm; T (Thickness), 4.5 mm and Weight, 8.5 grams.

Figure 1, B is a complete triangular pendant made of light gray limestone. It has two drilled holes at the wide end. This stone is full of tiny cavities that are visible only under magnification. It is from along the shore of Falcon Lake about one mile north of the mouth of the Salado River in Tamaulipas, México. Dimensions are: L, 41 mm; W, 30 mm, T, 6 mm. It weighs 10 grams.

Figure 1, C is a complete triangular pendant made of very fine-grained, gray and tan sandstone (siltstone). There are two drilled holes near the wide end. It was found near El Sauz in Starr County about a week before hurricane Beulah struck on September 20, 1967. A return visit about a week after the hurricane found the site heavily silted over. Dimensions are: L, 79 mm; W, 28 mm; T, 6 mm. It weighs 21.7 grams.

Figure 1, D is a medial fragment of a triangular pendant made of light tan fine-grained sandstone. Both ends are broken and it appears to have been quite long. It is from along the shoreline of Falcon Lake in Zapata County. Dimensions are: L, 50 mm; W, 27 mm; T, 8.5 mm. It weighs 19.6 grams.

Figure 1, E is an end fragment of what appears to have been a triangular pendant. There are two drilled holes near the straight wide end. It is made of grayish brown sandstone. It was found about 33 miles south of Reynosa a few miles west of the Monterrey highway in northeastern Nuevo León, México. Dimensions are: L, 25 mm; W, 27 mm; T, 5 mm. It weighs 5.7 grams



Texas Lower Rio Grande River drainage system. Artifact distribution of this report is in this region.

The remaining ten specimens in this group of fifteen are rectangular in form. They are illustrated actual size in Figures 2 and 3.

Figure 2, A is a nearly complete rectangular ground stone gorget made of black, limy sandstone. It has had two drilled holes in each end that have broken out and shortened the original length slight-

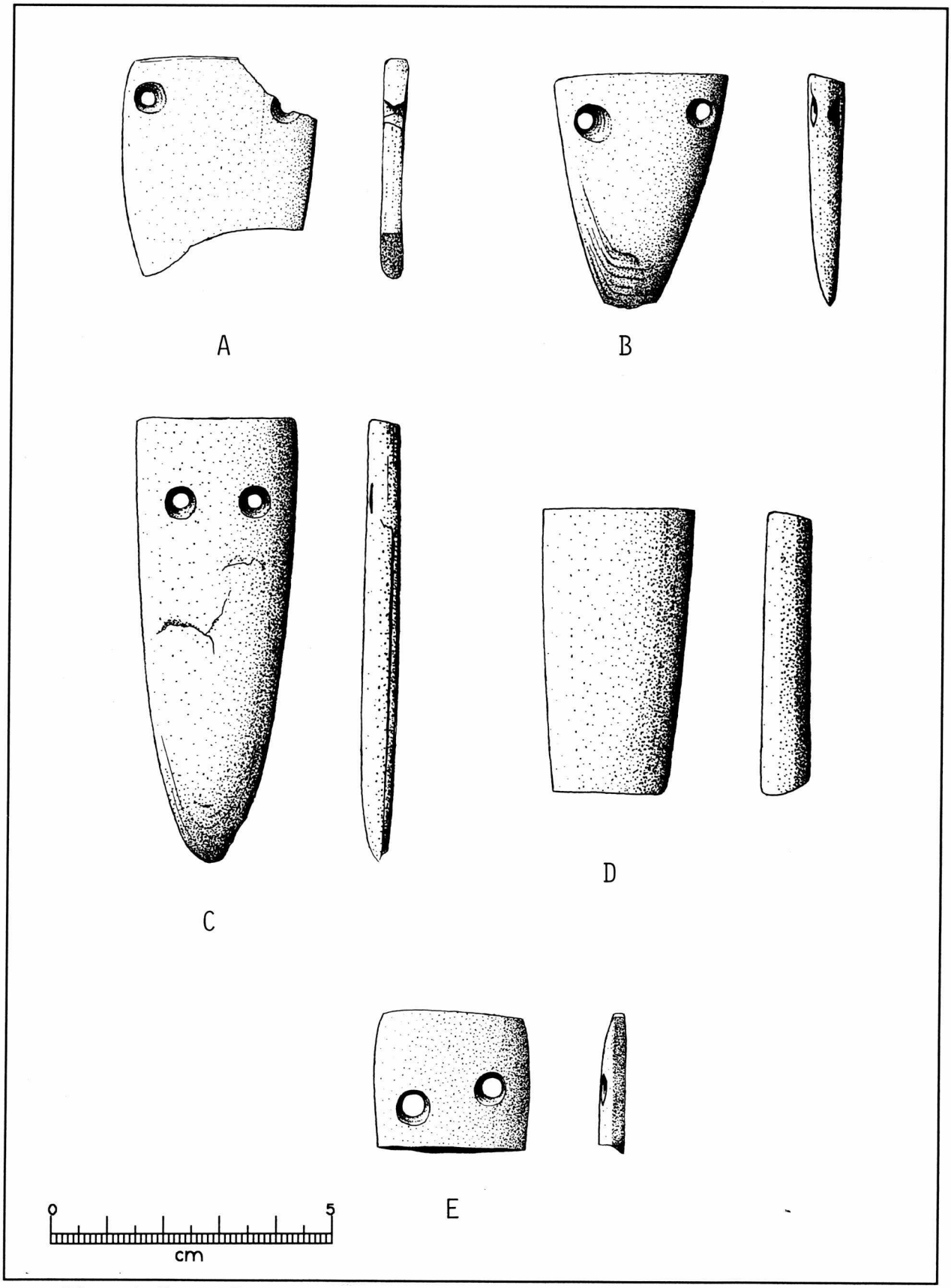


Figure 1. Ground Stone ornaments from Starr and Zapata Counties, Texas, and Northern Tamaulipas and Northeastern Nuevo León, México. A, Río Alamo near Mier, Tamaulipas; B, Salado River, Tamaulipas, México; C, near El Sauz, Starr County, Texas; D, Falcon Lake shoreline, Zapata County, Texas; E, Nuevo León, México 33 miles Southwest of Reynosa.

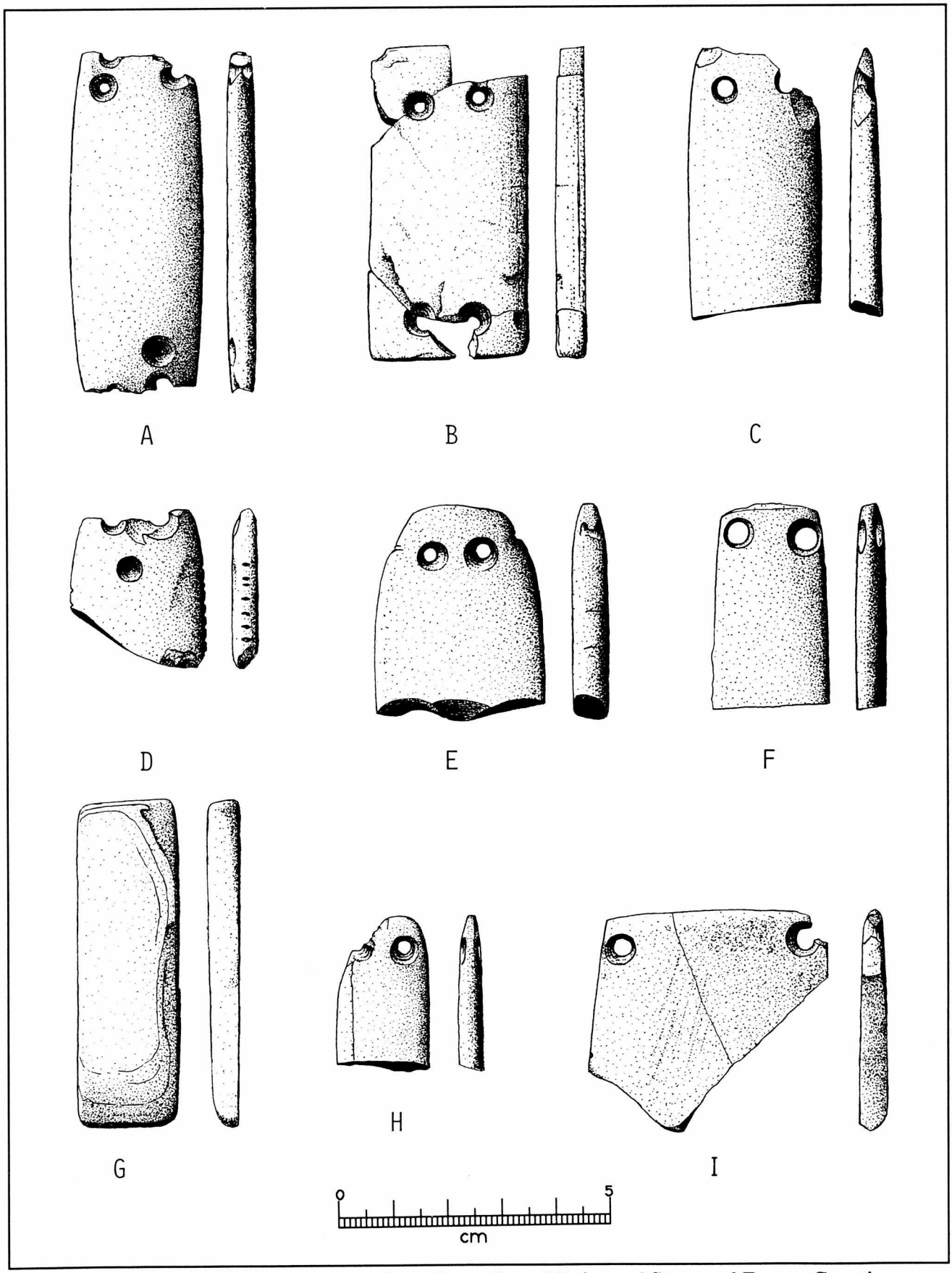


Figure 2. Ground Stone ornaments from Tamaulipas, México and Starr and Zapata Counties, Texas. See text for descriptions.

ly. One new hole has been drilled in one end and another started but not finished in the opposite end. This specimen was found along the Río Alamo south of Mier in northern Tamaulipas, México. Dimensions are: L, 49 mm; W, 24 mm, T, 6 mm; Weight is 12.7 grams.

Figure 2, B is a nearly complete rectangular ground stone gorget that has been reconstructed from four fragments. It is made of reddish, fine-grained sandstone (siltstone). All four corners have broken and torn out through three of the four holes. Replacement of three of the corner segments permits accurate measurements of original size. This specimen was found near El Sauz in Starr County about four feet from the complete triangular specimen illustrated in Figure 1, C. Dimensions are: L, 58 mm; W, 29 mm; T, 6 mm. Weight is 16.5 grams.

Figure 2, C is an end fragment of a rectangular ground stone gorget with two drilled holes in one end. One corner of this end is broken out through the hole. This specimen is presumed to have had two drilled holes in the opposite end. It is made of very fine dark gray sandstone (siltstone) and is from Arroyo San Pedro near Comales in northern Tamaulipas, México. Dimensions are: L, 49 mm: W, 26 mm; T, 6 mm. Weight is 12.7 grams.

Figure 2, D is an end fragment of a rectangular ground stone gorget made of fine-grained light gray siltstone. It originally had two drilled holes in one end that are now broken out. A single new hole has been started in this end but not finished. Both edges have a series of small notches. It is believed to have had two drilled holes in the missing end. It was found near the mouth of the Río Salado on the Tamaulipas side of Falcon Lake. Dimensions are: L, 29 mm, W, 24 mm; T, 5 mm.

Figure 2, E is an end fragment of a nearly rectangular ground stone gorget with two drilled holes near the end and a shallow notch on each edge near the holes. This specimen appears to be about one-half of the original size. It is made of light gray sedimentary sandstone and was found about one and one-half miles north of the mouth of the Salado River in northern Tamaulipas, México. Dimensions are: L, 39 mm; W, 32 mm; T, 7 mm. It weighs 14 grams.

Figure 2, F is an end fragment of a rectangular ground stone gorget with two drilled holes at the end. It is made of very fine-grained light gray to tan sandstone that feels grainy, like sandpaper. It was found about one mile north of the mouth of the Salado River on the Tamaulipas side of Falcon Lake. Dimensions are: L, 37 mm; W, 22 mm; T, 5 mm. Weight is 8.0 grams.

Figure 2, G is a rectangular ground stone gorget without holes. It appears to be an unfinished gorget in a late stage of production. It is made of gray and tan fine-grained sedimentary sandstone and was found on a small island in Falcon Lake when the water was low. This island is in Zapata County. Dimensions are: L, 60 mm; W, 18 mm; T, 6 mm. Weight is 11.8 grams.

Figure 2, H is an end fragment of a basically rectangular ground stone gorget. One of the two end holes is broken out and there is evidence of an attempt to salvage it. It is made of light gray fine-grained sandstone. It was found along a pipeline road between Mier and Miguel Alemán in northern Tamaulipas, México. Dimensions are: L, 27 mm; W, 17 mm; T, 5 mm. Weight is 4.0 grams.

Figure 2, I is an end fragment of a rectangular ground stone gorget made of light gray sandstone with a creamy tan coating much like patina. It has two drilled holes in the wide end. One of these is broken out through a corner. This specimen was found on high ground at the junction of Río Alamo and Río Sosa in northern Tamaulipas, México. Dimensions are: L, 42 mm; W, 40 mm; T, 5 mm. Weight is 12.6 grams.

Figure 3, A is a rectangular stone gorget/pendant with two drilled holes in one end. Under microscopic examination the opposite end shows to have been broken straight across and reground to round the corners and edges. The missing end probably had two drilled holes as do the rectangular specimens that are sufficiently complete to determine that. This specimen is from northeastern Nuevo León, México about 41 miles southwest of Reynosa. Dimensions are: L, 42 mm; W, 23 mm; T, 6.2 mm. Weight is 10 grams.

Figure 3, B is a nearly complete polished gorget of hard limestone with a series of 13 small notches along one long edge and 24 on the other. There are presently two holes in each end, one of which is broken out at a corner. The opposite end appears to have had two holes that broke out and were replaced by the two existing holes. This specimen is from the Royer site (78-B9-17) that was excavated during the building of Falcon Lake dam and photo-illustrated by Cason (1952). It is reproduced with line drawings for comparative purposes.

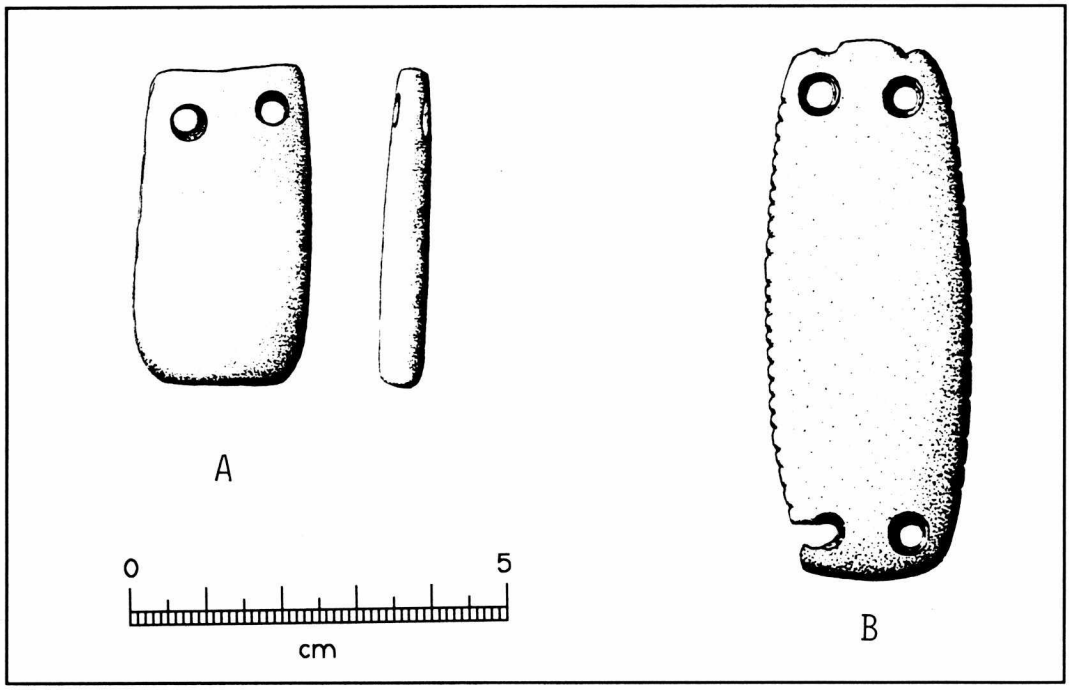


Figure 3. A, a ground stone gorget/pendant from northeastern Nuevo León, México. B, a ground stone gorget from the Royer Site in Zapata County, Texas.

DISCUSSION

Triangular stone pendants are nearly unknown in the literature, although one is pictured by Utberg (1969). This specimen is illustrated in Figure 1, C.

Mitchell (1975) reviewed the recent literature for reported ground stone artifacts in southern Texas and determined that ground stone pendants and gorgets did not occur south of a line running from Alazan Bay on the lower Texas coast westward through La Salle and Dimmit Counties to the Rio Grande on the west. It was suggested that this imaginary line identified a social or cultural change that did not include the use of ground stone tools or ornaments to the south. While that suggestion appeared valid at the time, the ground stone gorgets and pendants documented here firmly establish the presence of these types of artifacts over a fairly large area of the lower Rio Grande valley in far South Texas, northeastern Tamaulipas and into northeastern Nuevo León, México.

Other types of ground stone artifacts are known from deep south Texas: mano fragments from the sand sheet area (Mallouf, et al. 1977), end-notched and ground Waco sinker, Willacy County (Hester et al. 1978), and tubular stone and pumice pipes, Cameron County, A. E. Anderson collection now curated at the Texas Archeological Research Laboratory in Austin (see Anderson 1932 for related information).

The ground stone ornaments reported here exhibit what may be important differences with similar artifacts known in other areas of Texas.

Jackson (1941), reporting on stone pendants in Texas, determined that 70 percent of the known specimens were from Central Texas and ten percent were from southwest Texas. Only three percent were from South Texas, and none of these were known south of Aransas and Victoria Counties.

In categorizing these artifacts it seemed that size and shape were not of primary importance, though they were considered. The number and position of perforations were of first consideration. There were few primary shapes, most being oval with a single hole near one end. Triangular pendants usually had the hole in the small end, but occasionally the hole was in the center of the wide end. Rectangular ones usually had the hole in the center of one end. The rare round specimens

usually had one hole in the center. Specimens with two or more holes centered along the long axis are generally called gorgets. Multiple holes around edges were generally thought to be for attachment of decorative items such as feathers. The few rectangular specimens mentioned by Jackson have two central perforations while the complete Lower Rio Grande specimens have two holes in each end. Those with one broken end are believed to have had two holes in the missing end. The complete triangular specimens have two holes in the wide end at the corners and no perforations in the small end.

These differences in hole numbers and patterns of distribution may indicate some cultural significance regarding manner of securement and use.

These ground stone ornaments are from nine separate collections belonging to nine different individuals and have been surface collected over a period of many years. Nine are from Tamaulipas, two are from Nuevo León, two from Starr County and three are from Zapata County.

CONCLUSIONS

Many kinds of ground stone artifacts, including beads, earspools, discoidals, gorgets and plummets are found across Texas, but only rarely. The specimens reported here, together with Cason's rectangular gorget from Zapata County, establish the presence of both the triangular and rectangular types in both Starr and Zapata Counties and in northern Tamaulipas and northeastern Nuevo León, México. The known occurrence and distribution of ground stone ornaments is materially expanded for deep South Texas and northeastern Mexico.

ACKNOWLEDGEMENTS

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References Cited

Anderson, A. E.
1932 Artifacts of the Rio Grande Delta Region. *Bulletin of the Texas Archeological and Paleontological Society* 4: 29–31.

Cason, Joe F.
1952 Report on Archaeological Salvage in Falcon Reservoir, Season of 1952. *Bulletin of the Texas Archeological and Paleontological Society* 23: 218–259.

Hester, Thomas R., E. H. Schmiedlin and William W. Birmingham
1978 A Record of Several Ground Stone Artifacts from the Texas Coastal Plain. *La Tierra* 5(3).

Jackson, A. T.
1941 Pendants and Their Uses. *Bulletin of the Texas Archeological and Paleontological Society 13:9–45.*

Mallouf, Robert J., Barbara J. Baskin, and Kay L. Killen
1977 *A Predictive Assessment of Cultural Resources in Hidalgo and Willacy Counties, Texas.* Texas Historical Commission, Office of the State Archeologist.

Mitchell, Jimmy L.
1975 Ground Stone Ornaments in Southern Texas. *La Tierra* 2(1):8–14.

Utberg, Neil S.
1969 *The Indian Artifacts of Mexico and South Texas.* Privately printed, Edinburg, Texas.

AN EXPERIMENT FOR ACCIDENTAL EDGE DAMAGE OF LITHIC FLAKES

Leland W. Patterson

ABSTRACT

Results are given for an experiment to obtain edge damage on chert flakes by foot trampling. Comparisons are made between accidental edge damage and edge damage from functional uses of utilized flakes.

INTRODUCTION

This article describes the results of an experiment to obtain accidental edge damage on chert flakes by foot trampling, such as might occur at prehistoric campsites. Several layers of chert flakes from experimental replication of dart points were placed on a path in my backyard. After two months of foot traffic, flakes were randomly selected for study of edge damage. The flakes involved are of various types of chert from Central Texas, all of which have been heat treated as flake blanks for dart point manufacture.

Edge damage patterns from trampling are compared here with edge damage patterns from functional use of chert flakes for cutting, scraping, planing, and chopping. Some accidental edge damage, in the form of edge nibbling, is similar to initial edge damage patterns from using flakes with unretouched edges for functional tasks. It is not always possible to determine from an edge damage pattern if a flake has been used as a tool. In many experimental cases done by the author, a significant amount of functional use of a flake has been necessary to develop a distinctive edge damage pattern that is characteristic of the specific tool function.

Conclusions in this article apply to the edges of unretouched chert flakes. If a retouched edge is used as a tool, such as a biface, wear patterns and edge damage rates can be somewhat different (Patterson 1976).

FUNCTIONAL EDGE DAMAGE PATTERNS

Tringham et al. (1974) have demonstrated experimentally that there are distinctive edge damage patterns from use of lithic flakes for cutting, scraping, and planing. These edge damage patterns have been replicated by others, such as by Patterson (1975) for the cutting function in deer butchering. Patterson (1982) has also described the experimental edge damage pattern from using heavy chert flakes for chopping. Typical edge damage patterns from various types of functional use of chert flakes are as follows:

1. Edge wear Pattern from Cutting

Longitudinal action for cutting and whittling gives a fairly continuous series of flake scars on the edge that can be unifacial and/or bifacial (Tringham et al. 1974; Patterson 1975). A series of shallow scallops is formed on the edge, with polish on some scallop tips (ibid.:10). The distribution of flake scars on the edge is uneven, but not random, and flake scars can vary in size (Tringham et al. 1974:188).

2. Edge Wear from Scraping and Planing

Transverse action for scraping and planing results in a series of unifacial flake scars. These scars are generally densely distributed in a continuous line, with regular size and shape (Tringham et al. 1974: 189). Flake scars are generally smaller than when a scraper is made by deliberate retouching. Unifacial edge damage results from pressure being applied to only one surface of a flake.

3. Edge Wear from Chopping

Use of a large chert flake for chopping of wood and bone results in edge damage consisting of a wide variation in flake scar sizes, and many small step fracture terminations. The damage edge generally has a "chewed-up" appearance (Patterson 1982: 178). The larger fracture scars generally follow the contours of the tool faces, rather than being steep transverse fractures across the edge.

TOOL EDGE WEAR RATES

In the functional use of chert flakes as tools, edge wear rates can vary, depending on the task, the hardness of the material being worked, and the toughness of the tool materials. My experience has been that scraping gives a rapid wear rate. This rapid edge damage probably occurs because of the high angle of the tool edge to the material being worked, which maximizes the amount of transverse force that would cause tensile fractures. In contrast, edge damage from planing occurs at a slow rate. A planing tool edge is used with a low edge angle to the material being worked, which minimizes transverse force that would cause tensile fractures (Patterson 1981:12). In some experiments by the author, planing (draw knife) action on wood has resulted in only minute nibbling of the tool edge.

The edge wear rate from cutting can be highly variable. Cutting of meat gives little edge wear, even after long tool use (Patterson 1984; Odell 1980). In one experiment for deer butchering with a single chert flake, edge wear occurred at a slow rate, with the edge remaining fully functional after one hour at the end of the task (Patterson 1975). In some wood cutting experiments, the tool edge was completely exhausted in three to five minutes when cutting slots in hard ebony. In contrast, the tool edge remained fully functional when cutting slots in softer white pine for the same period of time (Patterson 1981:12). It can be concluded that in many cases, tool edge wear occurs at a slow rate, which often gives analytical difficulty in judging if a flake edge has had use as a tool.

EDGE DAMAGE FROM TRAMPLING

An experiment has been conducted to study flake edge damage from foot trampling, such as might occur at a campsite. Several layers of chert flakes were put on a path in my backyard. After two months of use of the path, 60 flakes were randomly selected for study. The specimens were selected as ones being large enough for convenient use as tools. Observations were made with a 10-power magnifier. Measurements of flake scar dimensions were made with a 7-power optical comparator with a metric scale reticle, with an accuracy of 0.1 mm.

Experimental edge damage results are tabulated in Table 1. Edge fractures from trampling were mainly in the forms of random, steep transverse fractures across flake edges or nibbling of edges. In only two cases (Specimens 59, 60) was there any continuous edge damage with regular flake scar sizes. In both cases, the length of uniform edge damage was short (5.7 mm for Specimen 59, 11.4 mm for Specimen 60). On both specimens, there were also random transverse fractures along the total flake edges.

Of the 60 specimens, 36 (60%) had random, steep transverse flake scars, 21 (35%) had nibbled edges only with flake scar depths under 0.5 mm, and 3 (5%) had no visible edge damage. Seven of the flakes with random transverse fractures also had some edge nibbling. For the specimens with random, steep transverse fractures, 41.7% had flake scars oriented to the dorsal surface, 8.3% of flake scars oriented to the ventral surface, and 50% with flake scars of bifacial orientation. It is not apparent why so few specimens had flake scars oriented only to the ventral surface.

Edge fracture types from this experiment are shown in Figure 1. Random, steep transverse fractures across the flake edge were usually notches, scallops, or linear edge sections. The depths of the fracture scars from undamaged edges were highly variable, within a range of 0.6 to 3.0 mm. Nibbled edges had depth of fracture scars less than 0.5 mm.

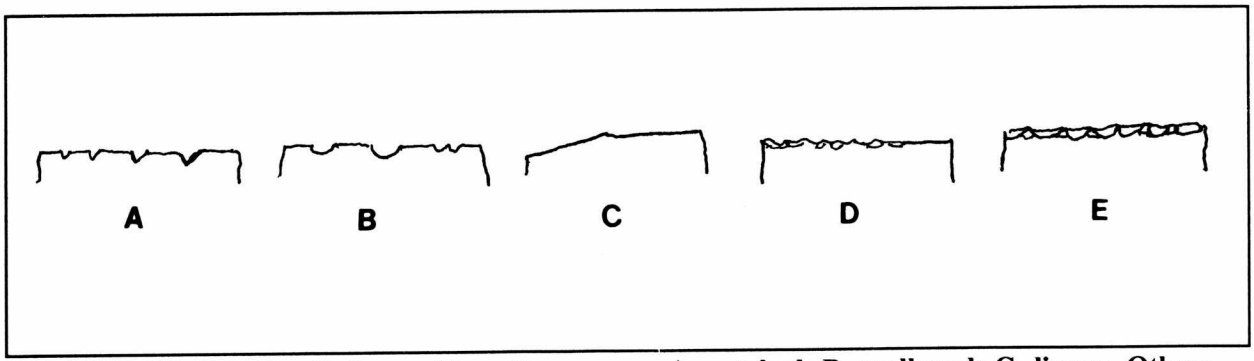


Figure 1. Edge Damage Patterns. Steep Transverse: A, notched; B, scalloped; C, linear. Other: D, nibbled edge, E, regular continuous.

Table 1. Results of Edge Damage Experiment - Page 1

	Edge Fracture			
	No. of Facets	Length on Edge, mm	Fracture Type	Fracture Orientation
1	7	16.1	Transverse	Dorsal
2	23	30.0	Transverse	Bifacial
3	5	26.8	Transverse	Ventral
4	6	19.0	Transverse and nibble	Dorsal
5	-	26.7	Edge nibble only	--
6	-	22.5	Edge nibble only	--
7	3	12.8	Transverse	Bifacial
8	7	30.0	Transverse and nibble	Dorsal
9	8	22.3	Transverse and nibble	Bifacial
10	7	21.5	Transverse	Bifacial
11	-	19.2	Edge nibble only	--
12	5	18.8	Transverse	Dorsal
13	7	21.1	Transverse	Dorsal
14	3	33.5	Transverse	Dorsal
15	-	24.5	Edge nibble only	--
16	4	23.6	Transverse and nibble	Dorsal
17	2	9.0	Transverse	Dorsal
18	4	15.6	Transverse	Bifacial
19	3	34.3	Transverse	Bifacial
20	-	22.7	Edge nibble only	--
21	-	19.1	Edge nibble only	--
22	2	15.3	Transverse	Ventral
23	4	17.6	Transverse	Ventral
24	3	19.1	Transverse	Bifacial
25	-	31.0	Edge nibble only	--
26	-	21.2	Edge nibble only	--
27	6	22.0	Transverse	Dorsal
28	4	16.4	Transverse	Bifacial
29	-	25.8	Edge nibble only	--
30	-	--	None	--
31	8	28.7	Transverse	Dorsal
32	7	26.4	Transverse	Bifacial
33	6	26.1	Transverse	Bifacial
34	-	33.7	Edge nibble only	--

(Table 1 continued on next page)

Table 1. Results of Edge Damage Experiment - Page 2

	Edge Fracture			
	No. of Facets	Length on Edge, mm	Fracture Type	Fracture Orientation
35	-	27.7	Edge nibble only	--
36	-	--	None	--
37	5	27.2	Transverse and nibble	Bifacial
38	7	27.8	Transverse	Dorsal
39	-	44.0	Edge nibble only	--
40	5	18.0	Transverse	Dorsal
41	-	21.7	Edge nibble only	--
42	4	7.2	Transverse and nibble	Bifacial
43	1	3.4	Transverse	Dorsal
44	-	23.2	Edge nibble only	--
45	-	29.4	Edge nibble only	--
46	-	20.0	Edge nibble only	--
47	6	19.3	Transverse	Dorsal
48	-	21.7	Edge nibble only	--
49	6	20.2	Transverse	Bifacial
50	-	26.8	Edge nibble only	--
51	6	17.7	Transverse and nibble	Bifacial
52	-	--	None	--
53	10	19.7	Transverse	Bifacial
54	-	23.7	Edge nibble only	--
55	-	19.8	Edge nibble only	--
56	4	24.3	Transverse	Bifacial
57	-	20.5	Edge nibble only	--
58	6	18.0	Transverse	Bifacial
59	3	36.8	Transverse (A)	Bifacial
60	4	13.5	Transverse (A)	Dorsal

(A) - also short section of continuous, regular scars

CONCLUSIONS

Conclusions can be made concerning the two principal types of edge fractures obtained in this experiment. Random, steep transverse edge fracture patterns can be distinguished without difficulty from distinctive edge wear patterns from use of chert flakes as tools. This conclusion is the same as made by Tringham et al. (1974:192) for a small experiment in edge damage by trampling. They conclude that deliberate use of a flake will result in edge damage with regular flake scar orientation and concentration of edge damage on a particular area or areas of a flake edge.

Distinctive edge wear patterns from functional use of flakes as tools must be fully developed, however, to have definitive analytic value. The initial edge wear pattern from most functional uses is generally in the form of minute nibbling. Where edge damage is only in the form of nibbling, it would be difficult in many cases to distinguish between functional use of a flake and accidental edge damage, such as from trampling. It is not always possible to determine if a flake has been used as a tool. It is likely on many archaeological sites that the quantities of utilized flakes are underidentified. It is also likely that more utilized flakes may be identified in locations where lithic resources are scarce, because utilized flakes would tend to be used for longer time periods which would fully develop wear patterns.

References Cited

Odell, G. H.

1980 Butchering with Stone Tools: Some Experimental Results. *Lithic Technology* 9(2):39-60.

Patterson, L. W.

1975 Lithic Wear Patterns in Deer Butchering. *Texas Archeology* 19(2):10-11.

1976 Deer Skinning with a Bifacial Tool. *Texas Archeology* 20(2):8-10.

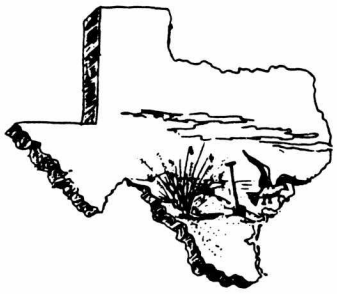
1981 Comments on Wear Rates of Lithic Tool Edges. *Lithic Technology* 10(1): 11-12.

1982 Experimental Edge Damage on Flint Chopping Tools. *Bulletin of the Texas Archeological Society* 53:175-183.

1984 Experimental Meat Cutting with Stone Tools. *La Tierra* 11(3):17-20.

Tringham, R., G. Cooper, G. Odell, B. Voytek, and A. Whitman

1974 Experimentation in the Formation of Edge Damage: A New Approach to Lithic Analysis. *Journal of Field Archaeology* 1(1/2):171-196.



COASTAL BEND ARCHEOLOGICAL SOCIETY

Another local archaeological society our readers may find interesting to participate in is the Coastal Bend Archeological Society, recently risen from a short functioning hiatus, and now a very active group.

A recent business meeting vote has returned their monthly meeting to 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 for further information.

INFORMATION FOR CONTRIBUTORS

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

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

Articles may be submitted in any form, although double-spaced typed copy is naturally preferred. However, we will review and work with material in any form to encourage those not comfortable with typewritten or other formal methods; WE ARE MORE CONCERNED THAT YOU SUBMIT YOUR IDEAS AND DOCUMENT YOUR MATERIALS THAN WE ARE WITH THE FORM OF MATERIALS WITH WHICH WE HAVE TO WORK. If you can supply a 5 1/4" or 3 1/2" disk, IBM or compatible, in Word Perfect, MS Word, AmiPro, Word Star or ASCII Text (DOS), it will be very helpful.

We are now incorporating a small Texas map with the county represented down in the lower right-hand corner of Page 1. This is not "Figure 1" and it may be all that you want in your paper. However, if you are being more precise as to your area of Texas, please submit a map showing the general region with rivers, streams, etc. This would be Figure 1. We are trying not to be too precise with locations of sites--unfortunately there are those who take advantage of this information to locate and ravage archaeological sites. Those sites already in the published material are sometimes shown again, however. Also, you MUST have the landowner's permission before entering his property. This small consideration can avoid misunderstanding and ill feeling toward archaeological research.

Other figures can be line drawings or photographs; line drawings are preferred if they are good quality —every photograph used costs an extra $50-$60 for a metal plate and set-up charges. If you need assistance with illustrations, please let us know— there are several STAA members who have volunteered to help with illustrations. For examples of good artifact and map illustrations, see those by Richard McReynolds and Ken Brown in previous issues.

When drawings or sketches of artifacts are included in your manuscript, please give the name of the artist responsible for the illustration(s). All figures should contain an appropriate caption and, where necessary, identification of each specimen (a, b, etc. or 1, 2, etc.) to aid referencing individual specimens in the text. The suggested procedure is to photocopy your original drawing and write in captions and identification letters on the photocopy. This saves the original for our use in final preparation of camera-ready copy.

PLEASE include a proper scale on all maps, diagrams, artifacts, etc. When any figure must be reduced, the scale must be in the original figure so that reduction will not change any proportions. Most of our artifact figures are drawn "actual size" but this is not proper publishing terminology. A scale is necessary, and may be reset in the picture through "cut and paste" —just so it is there. Remember that photocopied material very often slightly enlarges, and care must be taken that there is no change in the scale if done separately. For area (regional) maps, a small "rake scale" will help in our final copy--just so it is the proper dimension. Any site excavation map MUST have a good scale with it, again, IN the map so that reduction will not change the proportions.

Citations of references should be embodied in the text, giving the author, date, and page (e.g., Hester 1980:33). All references cited should be included in a References list using normal archaeological form (see articles in this issue for examples). The Reference list should not include publications not referred to in the text. Personal communications are cited in the text (e.g., Anne Fox, personal communication 1977) but need not be included in the Reference list.

Be sure to include a short (4-6 lines) biography for EACH author of the paper. The principal author and one co-author will receive two additional copies of *La Tierra*. Additional coauthors will receive one extra copy each. We will need each author's address for mailing purposes.

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

AUTHORS

C. K. CHANDLER, Documentation Chairman of STAA, is a retired railroad management official and engineering consultant with an insatiable interest in Texas archaeology. He is Past President of the Texas Archeological Society and a member of the Coastal Bend Archeological Society. C. K. was the 1985 Robert F. Heizer Award winner for his extensive work in south Texas archaeology (See Vol. 13, No. 1). Also, in 1985, he recorded more archaeological sites with the Texas Archeological Research Laboratory than any other individual. C. K. is a valued contributor of manuscripts to *La Tierra* and the *Bulletin of the Texas Archeological Society*, covering such varied subjects as metal points, rock art, and hearthfield sites in Terrell County. He has been honored by being named a TAS Fellow, and was also appointed as a steward for the Office of the State Archeologist. The Chandlers reside in northern San Antonio.

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THE SOUTHERN TEXAS ARCHAEOLOGICAL ASSOCIATION

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

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