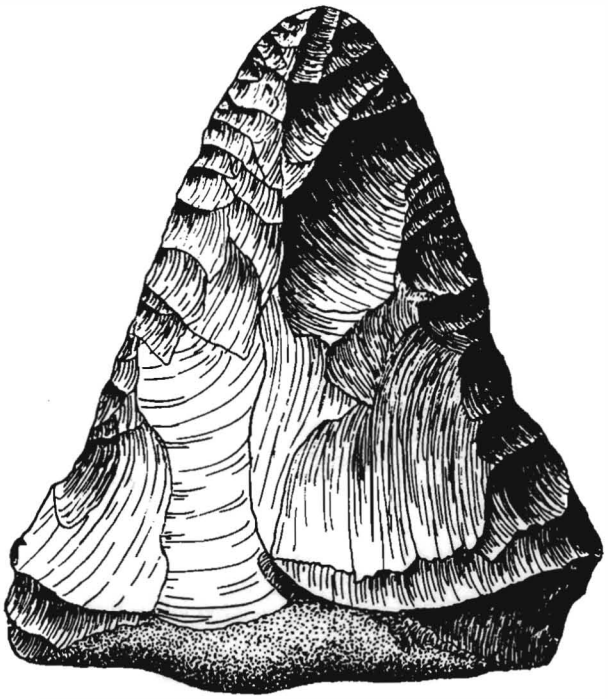
LA TIERRA



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LA TIERRA

Quarterly Journal of the Southern Texas Archaeological Association

Volume 14, Number 2 Jimmy L. Mitchell
April, 1987 Editor

Cover Illustration: Front and Back -- three views of a Butted Knife from the vicinity of Camp Wood, Texas. Illustration by Richard McReynolds.

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E D I T O R I A L

INDIVIDUAL EFFORTS

Often in past editorials, the efforts of various groups have been recognized (CBAS, HAS, Blue Bayou, etc.) and quite deservedly so. STAA also honors one individual each year with its Robert F. Heizer Memorial Award for outstanding contributions to the archaeology of southern Texas. Typically such recognition is based on a major excavation or a project of large scope.

Here, I would also like to speak out in honor of the smaller scale, individual projects which, while they may be limited in scope, are also making a meaningful contribution to southern Texas archaeology. In this issue, for instance, Don Priour of Kerrville reports the results of his study of "Butted Knives." He has summarized what was previously known of this type of artifact, collected additional information, and synthesized it all into a brief yet comprehensive report. Ken Brown of UTSA did the same recently with Guadalupe Tools (1985 **Bulletin of the Texas Archeological Society**). Tom Kelly has similarly studied a variety of Paleo-Indian artifacts and has published a whole series of articles in this journal. C. K. Chandler has been documenting and analyzing a variety of unusual artifacts, metal points, corner tangs, etc.

The point here is to understand the contribution which individuals can and are making to archaeology as a science and a body of knowledge. Such efforts are very special in that they are motivated not by desire for prestige or academic status, but rather by a pure love of knowledge. This to me is the true spirit of archaeology as a science.

The Editor

NOTES ON SOUTH TEXAS ARCHAEOLOGY: 1987-2

Early Texas Geologists as Observers of Archaeological Phenomena

Thomas R. Hester

My colleague, E. Mott Davis, has recently authored several papers on the history of Texas archaeology. These are fascinating accounts and brought to mind a series of notes that I had made some years ago while perusing some of the early publications in Texas geology. In these volumes, dating from the 1860s-1890s, I ran across a number of references to archaeological remains. This was long before any organized archaeological research had been done in the state. While most of these accounts lie outside the boundaries of greater South Texas, they do provide an interesting series of observations that are part of the historical background of Texas archaeology.

Mammoths, mastodons and men. After the Civil War, concerted geological studies began to be carried out over much of Texas. This early research was done by personnel attached to the Geological and Agricultural Survey of Texas. During the course of their fieldwork, these pioneer geologists, especially S. B. Buckley (the State Geologist of Texas; Buckley 1866, 1874, 1876) noted the occurrence of mammoth and mastodon remains in various parts of the State. For example, Buckley (1876:29) mentions the discovery of an "ancient elephant" in an Austin cellar. No artifacts were in association, but Buckley did offer these perceptive comments:

> Bones of the mastodon and elephant have been found in nearly every part of the State, showing that these huge animals were quite numerous in the olden time, say a few thousand years ago, when man was living.

I have emphasized those last four words because such claims for human coexistence with extinct fauna were indeed rare at that time. Proof that man in the Old World had lived with animals now extinct had only recently been provided by Edward Lartet in 1860 (reprinted in Heizer 1971:121-131).

Prehistoric rock art. Buckley (1876) and Cummins (1892) published brief accounts of rock art encountered during their explorations. Buckley (1876:29) provides a detailed account of the rock art of the Hueco Tanks site in West Texas (see Kirkland and Newcomb 1967):

> At the Cerro Hueco, or Waco Tanks, about thirty miles a little north of east from Isleta, are painted rocks and caves. The Cerro Hueco is a small group of granite mountains, abounding in caves and precipices. Some rocks have perpendicular faces from three hundred to four hundred feet high, and one, Blanchard's Tower, has a height of more than five hundred feet above the plain. On the perpendicular sides of some of these, and in cave-like hollows beneath overhanging rocks, are numerous rude paintings of men, women and various animals, including birds and serpents. In one place there is a conspicuous figure of the sun facing the east and sending forth his rays. The paintings were made with red, blue and black and white paints, with little or no regard to perspective. Mr. Blanchard of Isleta, who accompanied us, stated that about sixteen miles southeast of this locality, there are also similar paintings in an excellent state of preservation on rocks.

In this same account, Buckley also alludes to what he considered to be similar rock art (although today we would not likely agree) in Val Verde County in the lower Pecos:

> At a place called Painted Caves, near the lower crossing of the Devils River, are also a few paintings of similar character (Buckley 1876:29).

Cummins (1892:151) noted a petroglyph site in the Texas panhandle — "Indian carvings...crude figures in the sandstone" -- on Rocky Dell Creek in the Tascosa vicinity.

Shell mounds. Several references (Buckley 1874; Dumble 1892; Kennedy [redacted] mention large accumulations of brackish water clams and oyster shells along the upper Texas coast. Buckley (1876:30) noted "...numerous artificial shell mounds in the southeastern part of the State. Charcoal beds where fires were made are also there at and near the surface." These are the **Rangia** shell middens of that region, many of which have been studied in recent years by Texas archaeologists (Aten 1983).

Pottery and obsidian. Items of material culture are rarely singled out in the reports that I have read. Perhaps one of the earliest detailed descriptions of an aboriginal pottery vessel was provided, however, by Buckley (1876:30):

> In the State collection is a vase about fourteen inches high and eight in diameter at the top. It is of dark brown pottery and has some rude carvings or marks on the outside. It was found beneath a ledge of rocks by Mr. Wm. Ditto, near Graham, in Young County. It had been slightly covered with earth, and some animal had dug and partly uncovered it.

Also of interest was Buckley's (1876:21) note of obsidian outcrops, described by him as "large massive veins," in Presidio County, six miles west of Muerto Springs. I have asked Texas geologists about this account and they could not verify it, or felt that it was obsidian-like material that was not of artifact quality.

And other interesting notes. R. T. Hill (1890:125) presaged later lithic studies in Texas with these observations:

> It was from them [chert zones in Cretaceous deposits] that the Indians made most of their flint implements and the ease of their lithologic identity will be of value to the anthropologist in tracing the extent of the intercourse and depredations of former Indian tribes inhabiting this region.

Buckley (1876:88) noted that thousands of buffalo were pasturing in the winter in the upper valleys of the Concho River in Tom Green County, reported prairie dog towns in San Saba County in central Texas, and, fittingly enough, describes the good qualities of mesquite "...southward beyond San Antonio:

> Its wood is very durable, makes good fuel and has large tanning properties. A decoction of its roots is said to be a good remedy for bowel complaints."

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A PRELIMINARY REPORT ON THE "BUTTED KNIFE" BIFACE SURVEY

Donald James Priour

ABSTRACT

This is a preliminary report on the "butted knife" biface type of artifact. Data were collected in a survey form sent to members of the Texas Archeological Society and the Southern Texas Archaeological Association. Results are presented regarding dimensions, blade configuration, distribution, and archaeological associations. A descriptive term, "Narrow Angled Butted Biface," is suggested to better describe the group of specimens with delicate blades; this term avoids the functional implications that the word "knife" suggests, and points out a characteristic which identifies a distinct homogeneous set of artifacts out of a larger heterogeneous group. A form is included to increase the data base on these specimens for further analysis.

INTRODUCTION

The purpose of this paper is to present a preliminary report on the information which has been gathered from a survey of "butted bifaces." It is hoped that this report will elicit more information, particularly in regard to distribution of this type of artifact.

The "butted knife" biface (Sorrow 1968; Turner and Hester 1985:203) has been described under many names: coup de poing, fist axe, hand axe, carcass cleaver, "Kerrville knife," and the "butted knife" (Goldschmidt 1934; Hester 1985; Pearce and Jackson 1933; Sollberger 1968; Sorrow 1968). A description of this artifact type is given in Turner and Hester's, **A Field Guide to Stone Artifacts of Texas Indians.** The "butted knife" biface is described as having a rounded unaltered cobble surface on one end, usually with the stone's natural cortex surface intact. On the other end, a delicate edge is present which may exhibit a glossy polish and which is too fragile for heavy chopping (Turner and Hester 1985:203, Sollberger 1968). They are a consistent, though somewhat infrequent, component in artifact collections from south-central Texas.

The statement in the preceding paragraph which describes the "butted biface knife" as having a delicate edge which is too fragile for heavy chopping is crucial in the differentiation of this class of artifact from choppers, preforms, or other specimens which may retain unaltered cortex on one end.

The short term goal of the present study was to gather information regarding the cultural associations, physical characteristics, and distribution of "butted knife" bifaces. In particular, it was hoped that objective criteria could be derived to determine whether a specimen could be classified as being "classic," that is, with a delicate edge, or as nonclassic, not delicately edged. Long term goals, which are not addressed in this report, are: to characterize these specimens into subgroups if appropriate, evaluate edge wear, and, with replicative and use experiments, come to more solid conclusions as to the aboriginal use of these interesting artifacts.

DATA COLLECTION

The data was collected on specimen survey forms which were distributed in **The Southern Texas Archaeological Association Newsletter** and **Texas Archeology** and through personal communications. A literature search also produced usable data, especially regarding distribution and stratigraphic associations (Briggs 1971; Goldschmidt 1934; Jackson 1938; Johnson et al. 1962; Johnson 1964; Kelly 1960; Pearce and Jackson 1933; Schuetz 1966; Shafer 1963; Suhm 1957; Taylor and

Rul 1960; Word and Douglas 1970). The material was logged into a PFS file designed for the Apple II personal computer, and the data was handled with software designed for use with that system. This allowed summations, averages, means, etc. to be easily ascertained at any point during the current project, as well as for future updating.

The specimen survey form was designed to define the distribution, cultural associations, dimensions, and possible local variations in butted knife biface specimens. The contributor was asked to submit the name of the county in which the specimen was collected, the nature of the site, and particularly if the specimen was found on, in, or near a burned rock midden. The particular associations that the butted biface had at the site with Pedernales, Castroville, and Montell points was inquired into. Some associations with these points which are known markers for the Middle and Late Archaic periods have been noted by previous investigators. The dimensions as to length, width at several points along the blade, and the shape of the blade were asked. It was requested that a drawing of both sides and a lateral profile be included, so that the specimen could be scrutinized as to whether or not it fit into the "classic" type. From this information, the range of sizes could be collected and analyzed. At first, whether a specimen was classified as a "classic" type or nonclassic depended on the rather subjective estimation as to the delicacy of the blade edge, and its form which was evaluated from the drawings. It was hoped that through study of a large number of specimens, an objective set of criteria could be determined. The forms also surveyed: the material of manufacture, if polish was present or absent, and an evaluation of workmanship. The contributor was also asked to comment on any particular associations which might be of importance.

The primary weakness of this collection effort is the bias produced by lack of reports which might significantly increase the known distribution for these specimens. Another problem is that measurements and drawings were made by more than one investigator. This produced less uniformity with the dimensions which were investigated, but it allowed data to be obtained from a larger number of sources.

Where possible, a direct study of the specimen was carried out, and data were compiled concerning the weights, microscopic wear, flaking, and gross and microscopic photography was done. It is hoped that in the future, reports of microscopic study, replicative, and use experiments can be made.

TABULATION OF THE PRESENT SURVEY

In the following tabulations, specimens were divided into classical and nonclassical groups based primarily on a subjective evaluation of the form and delicacy of the blade. It was suspected that a significant difference between specimens with delicate versus less delicate blades would emerge which would lead to more objective criteria for classification of butted bifaces. The total number of specimens evaluated is given to allow the reader to conclude how valid the measurements are, as based on sample size.

Blade Length:

Blade lengths were measured, in millimeters, from where the proximal blade edge began to the apex of the distal end of the blade. There is not always a distinct point of reference as to the beginning and end of the blade. The beginning point was usually the point along the blade edge where the cortex and flaked surfaces met, as this was generally the point where blade flaking began.

Specimen Type	Shortest	Longest	Average	Total Sample
Classical	78 mm	145 mm	107 mm	43
Nonclassical	86 mm	151 mm	113.5 mm	14
Average of both			108.6 mm	57

Blade Width:

The width measurements were chosen to give some idea of specimen contour and possibly help identify subgroups of specimens.

Distance of the widest point from the apex:

This measurement was chosen to identify the point along the specimen where the widest point is located in respect to the apex of the blade.

Specimen Type	Shortest	Longest	Average	Total Sample
Classical	54 mm	122 mm	76.9 mm	42
Nonclassical	30 mm	121 mm	69.3 mm	14
Average			75.0 mm	56

Width at the broadest point:

Specimen Type	Most Narrow	Most Broad	Average	Total Sample
Classical	48 mm	106 mm	79 mm	46
Nonclassical	35 mm	120 mm	84 mm	15
Average			80 mm	61

Width 3 centimeters from the distal apex:

Specimen Type	Most Narrow	Most Broad	Average	Total Sample
Classical	25.5 mm	70 mm	44.6 mm	40
Nonclassical	38 mm	110 mm	67.0 mm	15
Average			50.4 mm	55

Width 6 centimeters from the distal apex:

Specimen Type	Most Narrow	Most Broad	Average	Total Sample
Classical	48.0 mm	89.0 mm	68.9 mm	42
Nonclassical	53.0 mm	112.0 mm	78.4 mm	14
Average			70.8 mm	56

Weight:

Artifact weights were measured only on specimens examined by myself. At present the sample is small, but a significant difference is present in the two groups. The measurement is in grams. The measurements were made on a triple beam balance which was accurate to 0.05 grams. Only complete specimens were tabulated.

Specimen Type	Smallest	Largest	Average	Total Sample
Classical	146.7 g	368.6 g	263.3 g	11
Nonclassical	396.9 g	567 g	459 g	4
Average			351.5 g	15

Angle of the Lateral Profile of the Blade:

After examining many specimens and drawings of specimens, the observation was made that artifacts which had been judged subjectively as being "classic" could be separated from the "nonclassic" group by making measurements of the angle of the lateral blade profile. It was noted that in the classic specimens, this angle was more narrow than in nonclassic specimens. This is the characteristic which produces the delicate blade which would be unsuited for use as a chopper. This feature was evaluated by measuring the angle of the lateral blade profile subtended from the distal apex of the specimen to a point three centimeters proximal to the apex. This feature was determined by measurement with a protractor from specimen drawings, or where possible, a special device was used to calibrate this angle from bifaces which could be examined directly.

Blade Angle (in degrees):

Specimen Type	Smallest	Largest	Average	Total Sample
Classic	9	32	18	35
Nonclassical	26	70	43	8

Material of Manufacture:

Identification of the material the biface was manufactured from. It was hypothesized that most or all specimens would be chert. No differentiation was made between flint or chert. If specimens of chert were found away from the Edwards Plateau area, then trade might have been involved. If the item had been made of material other than chert, such as obsidian, it was to be logged into the computer as "other" and might indicate manufacture of butted bifaces away from south-central Texas. To date no classical butted bifaces have been reported as being manufactured from any material other than chert.

Specimen Type	Chert	Other	Total Sample
Classical	45	0	45
Nonclassical	15	0	15
Total			60

Polish:

Polished distal ends was recorded simply as being present or absent.

Specimen Type	Present	Absent	Total Sample
Classical	28	16	44
Nonclassical	0	14	14
Total	28	30	58

Workmanship:

Workmanship was graded as poor, fair, good, or excellent. A division was then drawn between poor to fair and good to excellent. This was tabulated as less than good, and good or better as follows:

Specimen Type	Less Than Good	Good or Better	Total Sample
Classical	4	23	27
Nonclassical	10	1	11
Total	14	24	38

Form of the Distal Apex:

This was to evaluate the possibility that if some specimens had sharply pointed distal ends versus rounded distal ends, these might represent two different artifact groups.

Specimen Type	Rounded Apex	Pointed Apex
Classical	39	0
Nonclassical	13	2

Blade Form:

It was observed that the blades of specimens might have convex, concave, or straight edges. The survey form requested a notation regarding this characteristic, to see if an indication of significant differences was present in the subgroups. It was hypothesized that if the recurved group was a more narrow and shorter subgroup, it was likely that resharpening had produced this characteristic. The following entries represent the average values of the specimens presently classified in each respective category.

Specimen Type	Blade Length	Width at 3 cm	6 cm	Total Sample
Convex	108.5 mm	63.7 mm	76.3 mm	18
Straight	113.3 mm	46.5 mm	69.7 mm	8
Recurved	107.5 mm	43.7 mm	67.6 mm	29
Average	108.6 mm	50.4 mm	70.8 mm	55

Specimen Type	Convex	Straight	Recurved	Total Sample
Classical	9	5	30	44
Nonclassical	9	4	2	15
Total numbers	18	9	32	59

Projectile Point Associations:

By Site:

For the most part, information was only available as to whether or not certain artifacts were present at an archaeological site. Unfortunately, rarely was information available as to the more direct association of a butted biface with a particular type of projectile point. The following data only indicate that Montell, Castroville, or Pedernales points were found at the same

site as a butted biface. This does not imply that a contemporaneous relationship existed.

Specimen Type	Montell	Castroville	Pedernales
Classical	33	33	34
Nonclassical	6	5	8
Total	39	38	42

Stratigraphic Association:

In this situation the stratigraphy indicates a probable association of butted biface specimens with other artifact types.

Specimen Type	Montell	Castroville	Pedernales
Classical	4	2	0
Nonclassical	0	0	0
Total	4	2	0

Possible Association With Burned Rock Middens:

This item tabulates the frequency that these bifaces were found on the surface of a burned rock midden, at the same site where a midden was also present, or at a site (other) where no known midden existed.

Specimen Type	Midden Surface	Midden Site	Other	Unknown
Classical	19	40	1	4
Nonclassical	1	7	0	1
Total	20	47	1	5

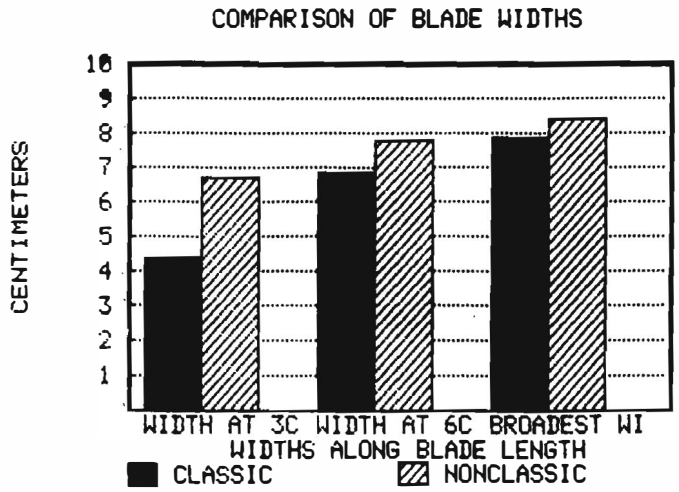
Distribution by County:

County	Classical	Nonclassical	Total Sample
Bandera	3		3
Bell		1	1
Kerr	11	3	14
Kimble	1		1
Kinney	4		4
McMullen		1	1
Menard	1		1
Pecos	1		1
Real	5		5
Travis		1	1
Uvalde	14	4	18
Val Verde	2	1	3
unknown	4		4
Totals	46	14	60

CONCLUSION

A survey form was circulated which allowed the collection of data on 60 butted biface specimens. This survey produced 46 specimens which were classified as "Classical," and 14 which were classified as "Nonclassical." Classification was originally by a subjective inspection as to whether or not the blade was too "delicate" to have functioned as a chopper.

The analysis revealed that both classical and nonclassical specimens were of about the same length, both ranged from 78 to 145 mm, and the average length for the classical group was 107 mm. There were some interesting disparities between the two groups: The widest point of the blade of the classical group was on an average 7 mm more proximal (towards the cortex end). The width of the classical specimens, as measured 3 cm from the distal apex, averaged 22.4 mm more narrow, and at 6 cm from the distal apex, they measured 10 mm more narrow. These measurements indicate an overall more narrow blade in the classical group.



The sample size was small for specimen weights, but classical specimens averaged 196 grams less than nonclassical specimens. When classical examples were examined for polish on the distal apex, 64% had some evidence of polish, while none of the nonclassical specimens demonstrated polish. There was a preponderance of recurved blades in the classical group, 68%, while in the nonclassical group only 13% had a recurved blade contour.

One of the most striking differences between the two groups was found on examination of the specimen's lateral profile. When a specimen is viewed in lateral profile, an angle is observed which is formed between the anterior and posterior surfaces of the biface with the artifact's distal end forming the apex of the angle (Figures 1 and 2). This angle was measured along the first three centimeters from the distal apex. It was found that 97% of specimens which had been subjectively judged as being "classical" had an angle which was 25° or less (Figure 1), while for "nonclassical" specimens 100% had angles measuring greater than 25°, and 88% were 30° or more (Figure 2). This characteristic is really the objective finding of what makes these blades "delicate and unsuitable for use as a chopper." This is the objective characteristic that subjectively leads one to identify the "classical" type from the "nonclassical." The difference in blade angles between these two groups seems to be the best criteria for their separation; I think the classical specimens would be better called Narrow Angled Butted Bifaces. This terminology characterizes these specimens descriptively in a way which would help separate them from choppers, preforms, other tools, and cores, all of which were

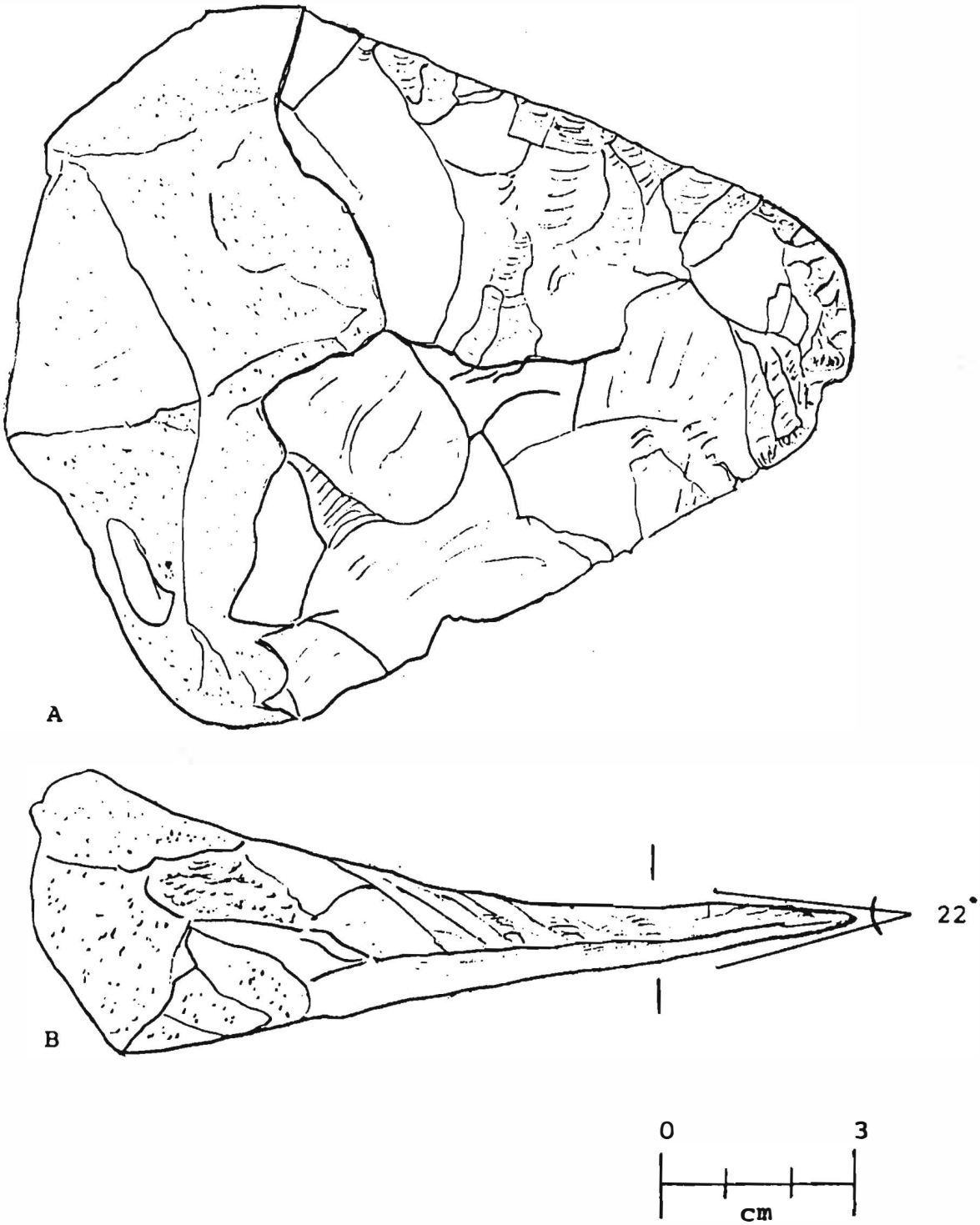


Figure 1. Narrow Angled Butted Biface. View B demonstrates the lateral profile of a butted biface which was subjectively considered a "classical" specimen. Note the narrow angle that the distal three centimeters of the blade subtends. Actual size.

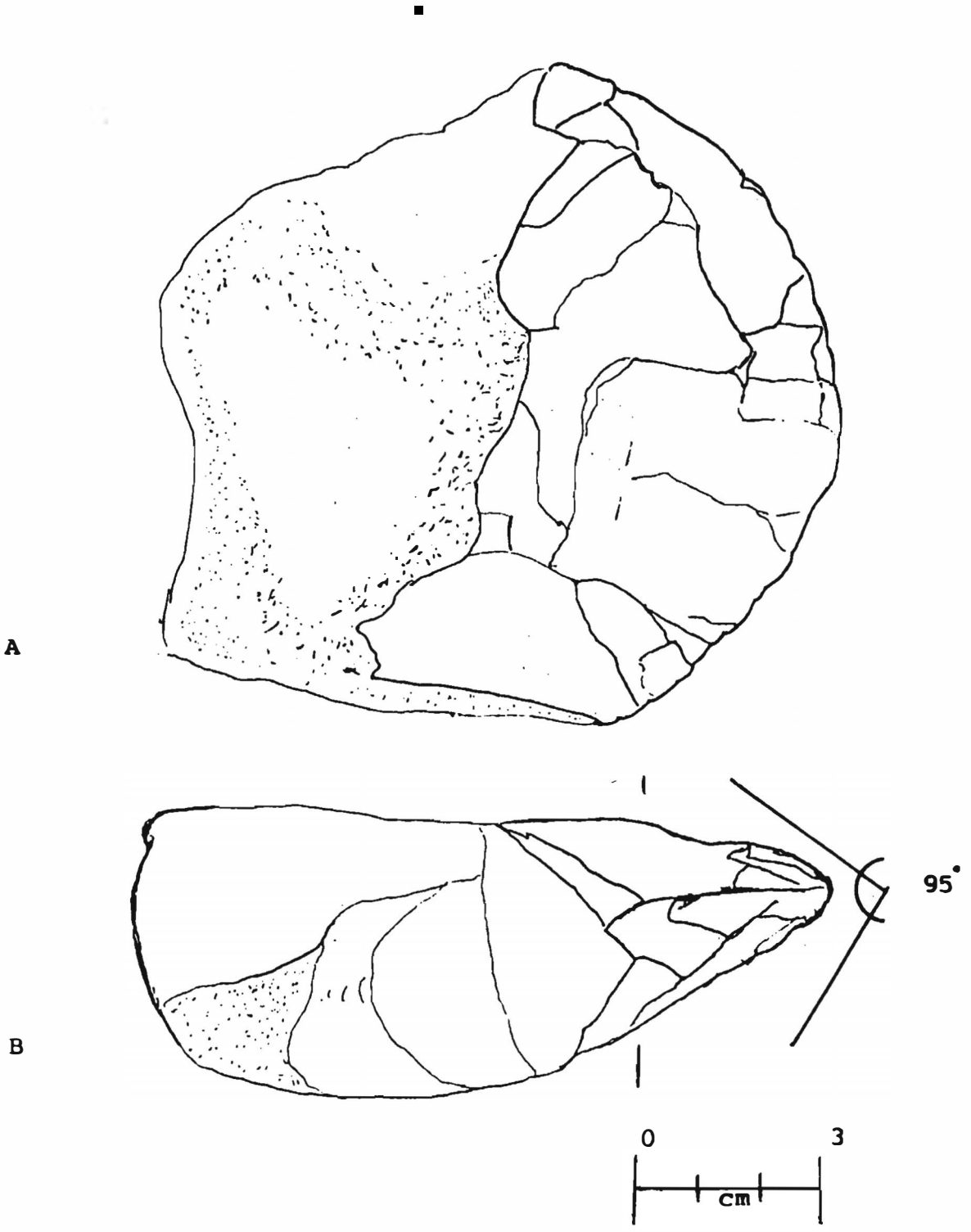


Figure 2. Wide Angled Butted Biface. View B demonstrates the lateral profile of a butted biface which was subjectively judged as being "nonclassical." Due to the convex curve of the distal apex, determination of the angle that the blade subtends is difficult to measure in a precise and repeatable manner. To attempt a standardized measurement between specimens, a special instrument was used.

submitted to the survey as butted bifaces, and which, when examined in profile, had wider angles than the delicately bladed classical specimens.

Finally, certain associations were looked at, to try to characterize the age, use, distribution, etc. of the narrow angled butted bifaces. There were not large enough numbers of butted bifaces stratigraphically linked to other artifact types to make an unequivocal association with the Middle or Late Archaic. There was no definite association with the Middle Archaic indicator, the Pedernales point. While there is some association with the Late Archaic Castroville and Montell points, this could only be found at two or three sites at present (Hester 1971; Hester 1985; Johnson 1964). The lack of good stratigraphic association is in part due to the prevalence of butted bifaces in or on the surface of burned rock middens where stratigraphy is notoriously poor (Sollberger 1968).

Most of the narrow angled butted bifaces, 97%, were found at a burned rock midden site, and 46% were in or on the surface of the midden. This may be biased, due to the fact that burned rock middens are such a prevalent site feature in the geographic area from which these specimens were reported. This artifact type has been suggested as possibly one used by groups of people specializing in bison hunting, and that this might be a specialized butchering tool. It may be significant that in the Bonfire Shelter, a bison kill site associated with Montell-Castroville type specimens, there were no reported butted bifaces (Dibble and Lorrain 1968; Hughes 1976; Suhm and Jelks 1962; Weir 1976). So many of the butted bifaces appear to be linked with burned rock midden sites, that a key to their function may be associated with the activities occurring at those locations.

The distribution that is presented in this report is probably biased by incomplete reporting, but nevertheless is interesting. Reports were sent in from all over the state, yet repeatedly the same Texas counties were represented. At present, the southwestern hill country area, particularly Kerr, Bandera, Uvalde, and Real Counties show the best representation in numbers of the narrow angled butted bifaces (Figure 3).

This report should increase our knowledge about these interesting artifacts. At present, they can be divided into two groups, narrow and wide angled. The narrow angled butted biface tends to have a narrow recurved blade which has an lateral profile angle of 30° or less. They frequently have polished blades. They seem to be found predominantly at burned rock midden sites and frequently have been found in or on the surface of these middens. They are probably associated with the Late Archaic period. Further information is needed to improve these statistics. Particularly, more reports expanding the distribution and better information regarding associations with other artifacts is needed. To increase the data base, a report form (Figure 4) has been included at the end of this paper. If more report forms are desired, please contact: Donald J. Priour, M.D., 1006 Monroe Dr., Kerrville, Texas 78028.

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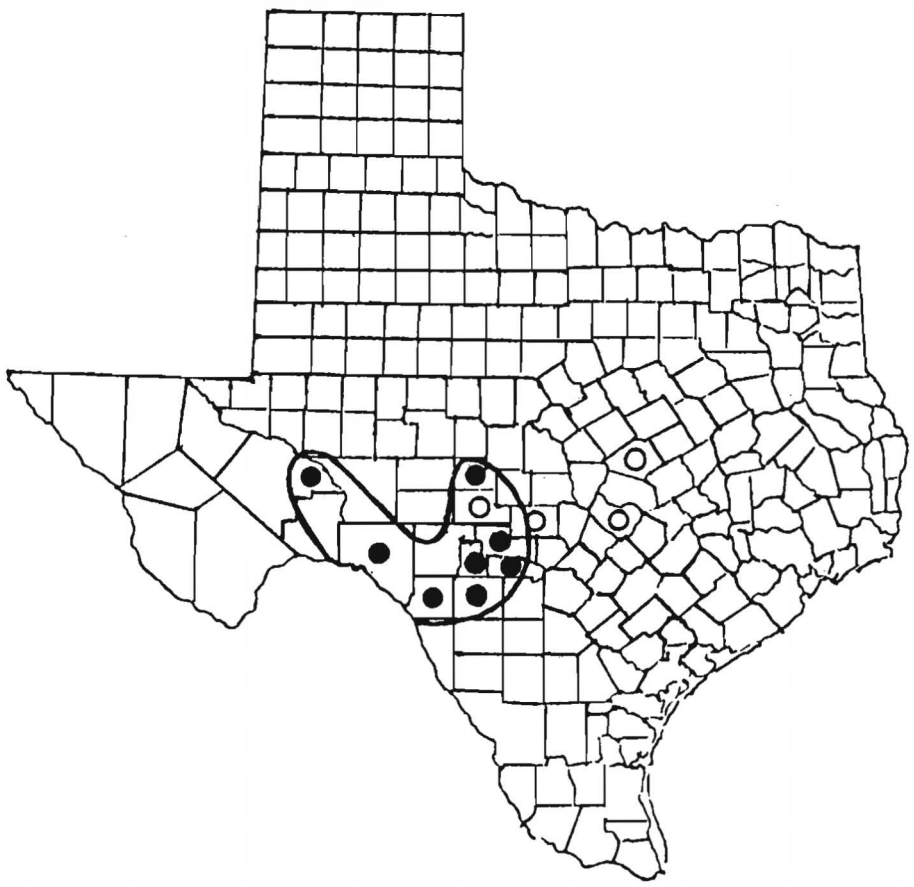

● Thin Bladed Butted Biface

O Others

Figure 3. Distribution of Narrow Angled (thin bladed) Butted Bifaces.

"FIST AXE" OR "BUTTED BIFACE" SURVEY FORM

1) Please trace the oufline of the biface on the back of this page. Please show both faces, and the lateral profile.
2) Total Length (cm. or in.) _____.
3) Blade edge length is estimated by measuring from where the cortex stops to the distal apex of the biface. Blade edge length: side 1:_____, side 2:_____.
4) Distance that the widest point is from the apex_____.
5) Width at the broadest point_____. 6) Width 3 cm from the distal apex _____. 7) Width 6 cm from the distal apex_____.
8) Polish: present_____ absent_____.
9) Distal apex: Rounded_____ Pointed_____.
10) Blade form: concave_____ straight_____ recurved_____.
11) Condition: complete_____ proximal fragment only_____ distal fragment only_____.
12) Material of manufacture:_____.
13) Associations: a. type of site:_____.
b. was a burned rock midden present_____.
c. was the artifact on or in a midden_____.
d. were Montell points found at the site_____.
e. were Castroville points found at the site_____.
f. were Pedernales points found at the site_____.
14) County of origin for the artifact_____.
15) Comments: (note such things as workmanship, edge grinding, obvious resharpening, etc)

Please print your name and address: Please mail the completed form to :

_____
_____
_____

Dr. Don Priour
1006 Monroe Drive
Kerrville, Texas 78028

The following diagrams are to assist in terminology:

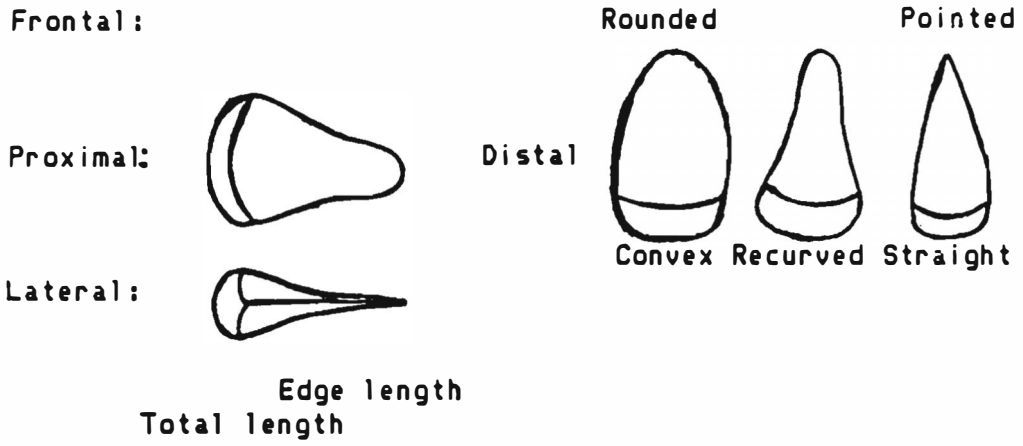

Figure 4. Butted Biface Survey Form.

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TRANSITIONAL ARCHAIC STRUCTURE AND ACTIVITY AREAS AT THE ZATOPEC SITE, SAN MARCOS, TEXAS

James F. Garber

ABSTRACT

During the summers of 1983-86, Southwest Texas State University conducted its Archaeology Field School at the Zatopec Site, 41 HY 163, Hays County, Texas. Several distinct activity areas were recognized including initial core reduction and preparation, tool finishing, cooking, butchering, and domestic activity. During the 1985-86 excavations, information on the formation of burned rock middens was obtained in addition to uncovering a Transitional Archaic posthole pattern.

INTRODUCTION

During the summers of 1983-86, archaeological excavations were carried out at the Zatopec Site, 41 HY 163. The excavations are a part of an ongoing investigation by Southwest Texas State University of the prehistoric settlement patterns and subsistence strategies of the San Marcos area (Garber 1983, 1984; Garber et al. 1983, 1984). The site is in Hays County and falls within the Central Texas prehistoric culture region as described by Weir (1976), and Prewitt (1981). As it is on the southern edge of the Edwards Plateau, it is peripheral to both the Central and South Texas prehistoric culture regions, and no doubt participated in and was influenced by both areas.

The site is approximately 75 meters north to south by 65 meters east to west (see Figure 1). Excavations have shown that it was occupied sporadically from the Middle Archaic (2500 B.C.) through the Late Prehistoric (A.D. 1600) with some evidence to suggest minor occupation in some portions of the Early Archaic (4000 B.C. to 2500 B.C.).

During the course of excavations numerous features, artifacts, and lithic materials were recovered which indicate the existence of several specific activity areas including initial core reduction and preparation, tool finishing, cooking, butchering, and domestic activity. Of special significance, information on the formation of burned rock middens was obtained and a posthole pattern in the domestic activity area was revealed. This structure has been dated by associated projectile points to the Transitional Archaic era (300 B.C. to A.D. 700).

ENVIRONMENT

The San Marcos area provided special opportunities to the prehistoric inhabitants in that it is located at the intersection of three major environmental zones, each with its own set of resources (Garber et al. 1983; Shiner 1983). These are the Edwards Plateau, or Hill Country, to the west, the Blackland Prairie to the east, and the San Marcos River in between. The San Marcos River is formed by numerous springs which emerge along the Balcones Escarpment. This escarpment, or fault line, is the dividing line between the prairie and Hill Country zones. The site is in the Blackland Prairie zone at the base of the Balcones Escarpment on a low terrace overlooking Purgatory Creek which is a tributary of the San Marcos River. Although today the creek is ephemeral, it probably flowed year round in prehistoric times. There has been a significant lowering of the water table during the historic period (Brune 1981). Purgatory Creek flows into the San Marcos River approximately 3.5 km downstream from the site.

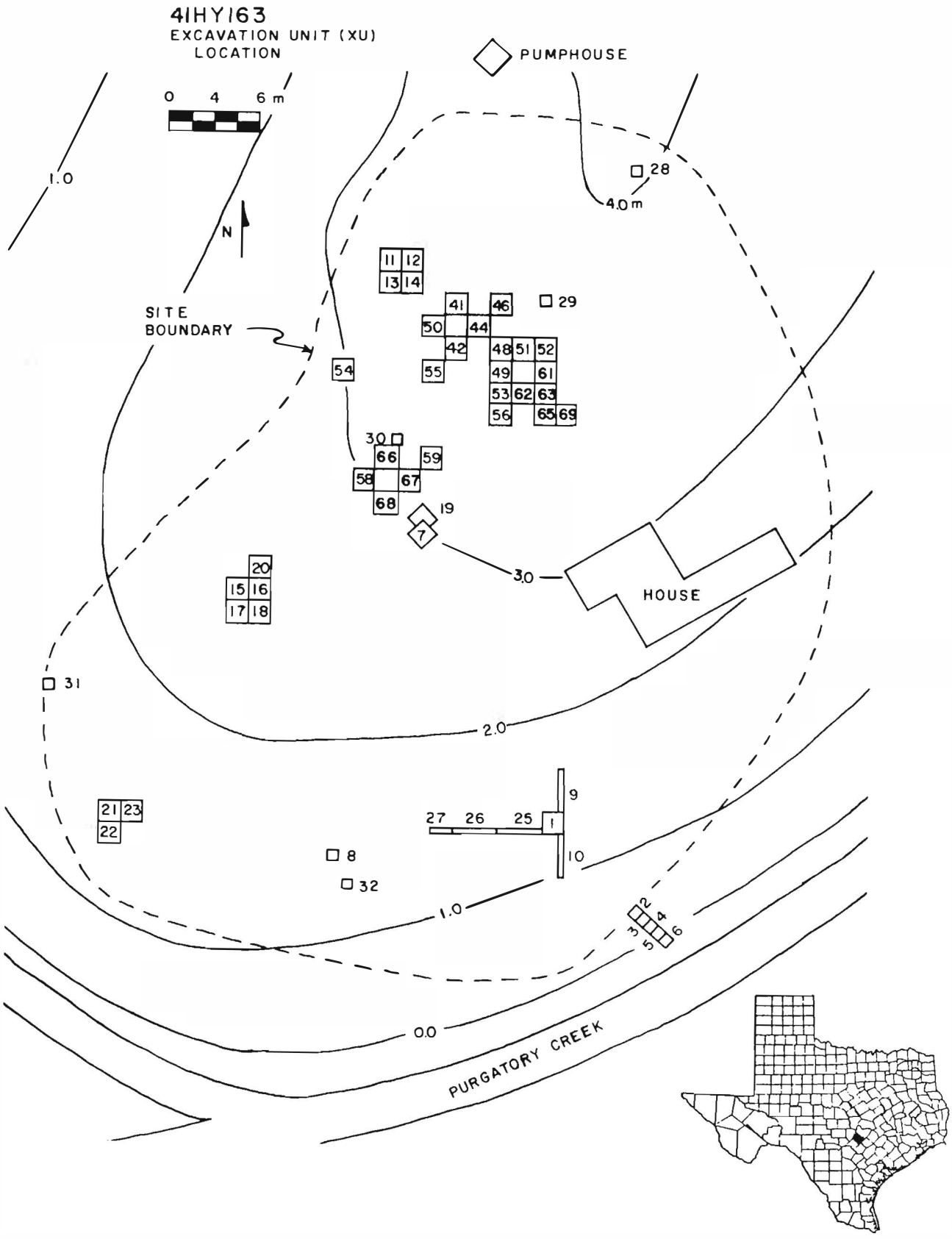

Figure 1. Site map of 41 HY 163 showing numbers and locations of excavation units. Note inset map indicating location of Hays County in Texas.

In addition to the plant and animal resources of the above-mentioned zones, there is a natural outcropping of good quality gray-brown chert immediately adjacent to the site (Garber 1983).

ACTIVITY AREAS

During the summers of 1983-86, 173 square meters were excavated to varying depths. The numbered squares and rectangles shown in Figure 1 indicate the location of each excavation unit (XU). In general, the cultural deposit extends from the surface to a depth of approximately 50 cm. All excavations were conducted in 10-cm levels unless natural levels could be observed and followed. In the course of the excavations several features were encountered; these are summarized in Table 1. An analysis of the features, in conjunction with an assessment of the artifacts and lithic debitage, led to the definition of several activity areas some of which are shown in Figure 2.

Cooking: Five distinct burned rock middens were recognized (F1, F3, F5, F13, and F16; see Table 1 and Figure 2). All five are defined by the presence of a dense, but relatively thin, layer (approximately 20 cm) of fist-sized fire-cracked limestone and all contained a high density of artifacts and lithic debris. The middens appeared to be round or oval in outline and are approximately 8 meters to 14 meters across. No discernable rise or dome could be observed with any of the middens. They would be classified as Type IV (Weir 1976). All were covered by a relatively rock-free zone of Late Prehistoric material. Pedernales points were recovered from F1 dating this feature to the Middle Archaic (Turner and Hester 1985) or Round Rock Phase (Weir 1976). Feature 3 has several components as evidenced by the presence of Pedernales, Lange, Fairland, and Ensor points (see Figure 3) found within the midden indicating the Middle, Late, and Transitional Archaic eras or the Round Rock, San Marcos, and Twin Sisters Phases. Martindale and Travis points of the Early Archaic or Clear Fork Phase were recovered at the base of the midden. The bulk of this midden was of the Round Rock Phase. Prewitt (1981) states that burned rock middens did not accumulate during the Uvalde Phase of the Late Archaic and are not mentioned for the succeeding Driftwood and Twin Sisters Phases; however, the presence of an Ensor point (Figure 3, a) in the bottom of a hearth pit at the top of the midden clearly indicates midden usage during Late or Transitional Archaic times. Additionally, in a thin portion of the midden in XU 46, a Fairland point was recovered immediately beneath the layer of burned rock, again indicating midden accumulation during these times. Feature 5 is of unknown date as no points were found within the midden. Within F13 a Marshall point was recovered indicating the Middle Archaic (Turner and Hester 1985), or San Marcos Phase (Weir 1976). Feature 16 contained a Montell point (Figure 3, h) indicating the San Marcos Phase (Weir 1976) or Late to Transitional Archaic (Turner and Hester 1985).

In the process of exposing and excavating the F3 burned rock midden, data were collected which shed light on the formation of burned rock middens. Several circular and oval rock-free pits were encountered within the midden. They ranged in size from 40 cm to 80 cm in diameter. Some of these were observed on the midden surface. These circular or oval blank spots in the top of the midden can be observed in Figure 4. Each of the excavated pits was basin shaped and had a bottom which extended into a reddish brown silt-clay matrix which is beneath the burned rock midden. Those pits designated as 1, 2, 3, and 4 on Figure 4 were recognized after the burned rocks were removed and the midden could be observed in profile. Pit 5 was observed in plan view after the midden had been removed. Feature 6 was dug into the silt-clay matrix and was lined with unburned limestone slabs. This, in all likelihood, represents a stone-lined cooking pit prior to use. After one of these pits had been used to the point that the slabs would be fire cracked, it would have to be cleaned

Table 1. Summary of Features

Feature	Excavation Unit	Date
F1 - Burned Rock Midden	1, 9, 10, 25, 26,27	Middle Archaic
F3 - Burned Rock Midden	11, 12, 13, 14, 41, 42, 44, 46, 50	Middle, Late, Trans., Archaic
F5 - Burned Rock Midden	21, 22, 23	Unknown
F13 - Burned Rock Midden	52	Middle Archaic
F16 - Burned Rock Midden	30, 58, 59	Late, Transitional, Archaic
F6 - Hearth Pit Beneath F3	46	Middle Archaic
F7 - Hearth Pit Beneath F3	46	Middle Archaic
F8 - Hearth Pit Within F3	50	Late, Transitional, Archaic
F10 - Hearth Pit Within F3	44	Late, Transitional, Archaic
F4 - Core Cache	15, 16, 20	Late Archaic
F2 - Storage/Trash Pit	7, 19	Late Prehistoric
F9 - Structure	48, 49, 51, 52, 53, 56	Transitional Archaic
F17 - Storage Pit Within F9	48	Transitional Archaic
F14 - Postholes	42	Unknown
F19 - Pit Within F9	63, 65	Transitional Archaic

NOTE: After excavation and analysis, it was determined that F11, F12, and F15 were not culturally significant and thus are not listed here.

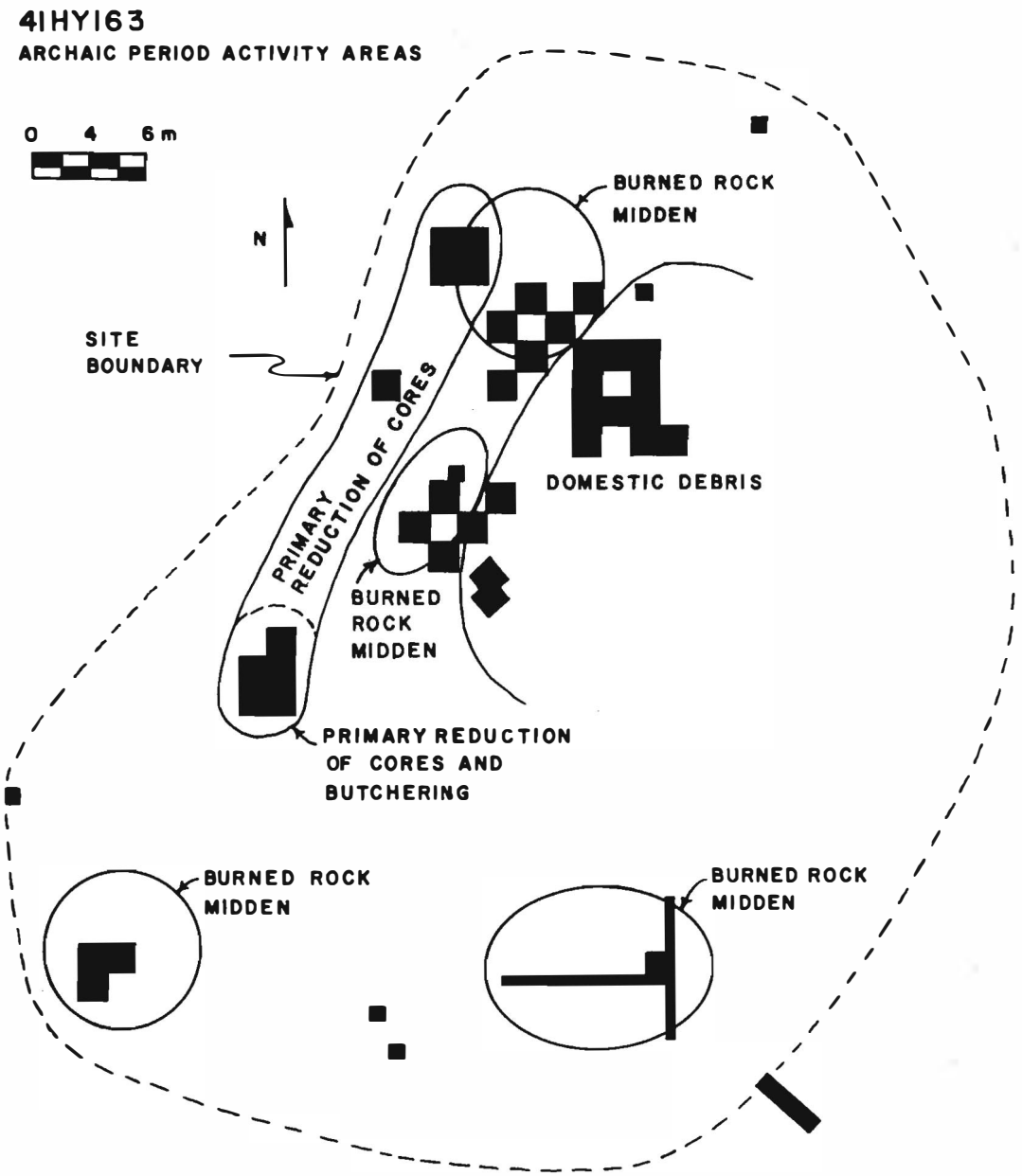

Figure 2. Site map of 41 HY 163 showing Archaic period activity centers.

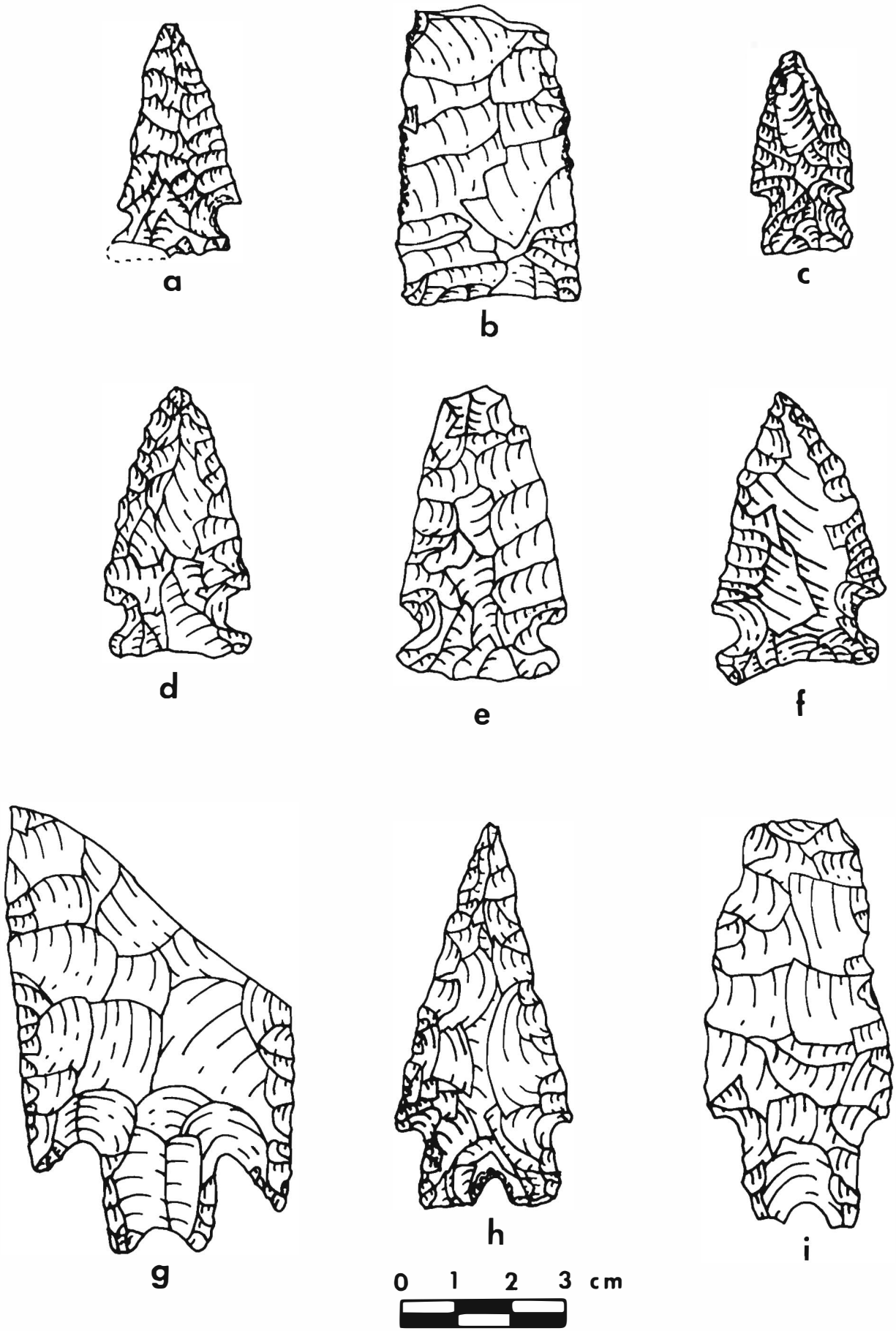

Figure 3. Projectile points found in association with features at 41HY 163. a, Ensor; b, Kinney; c, Darl; d, Ensor; e, Ensor; f, Fairland; g, Pedernales; h, Montell; i, Pedernales.

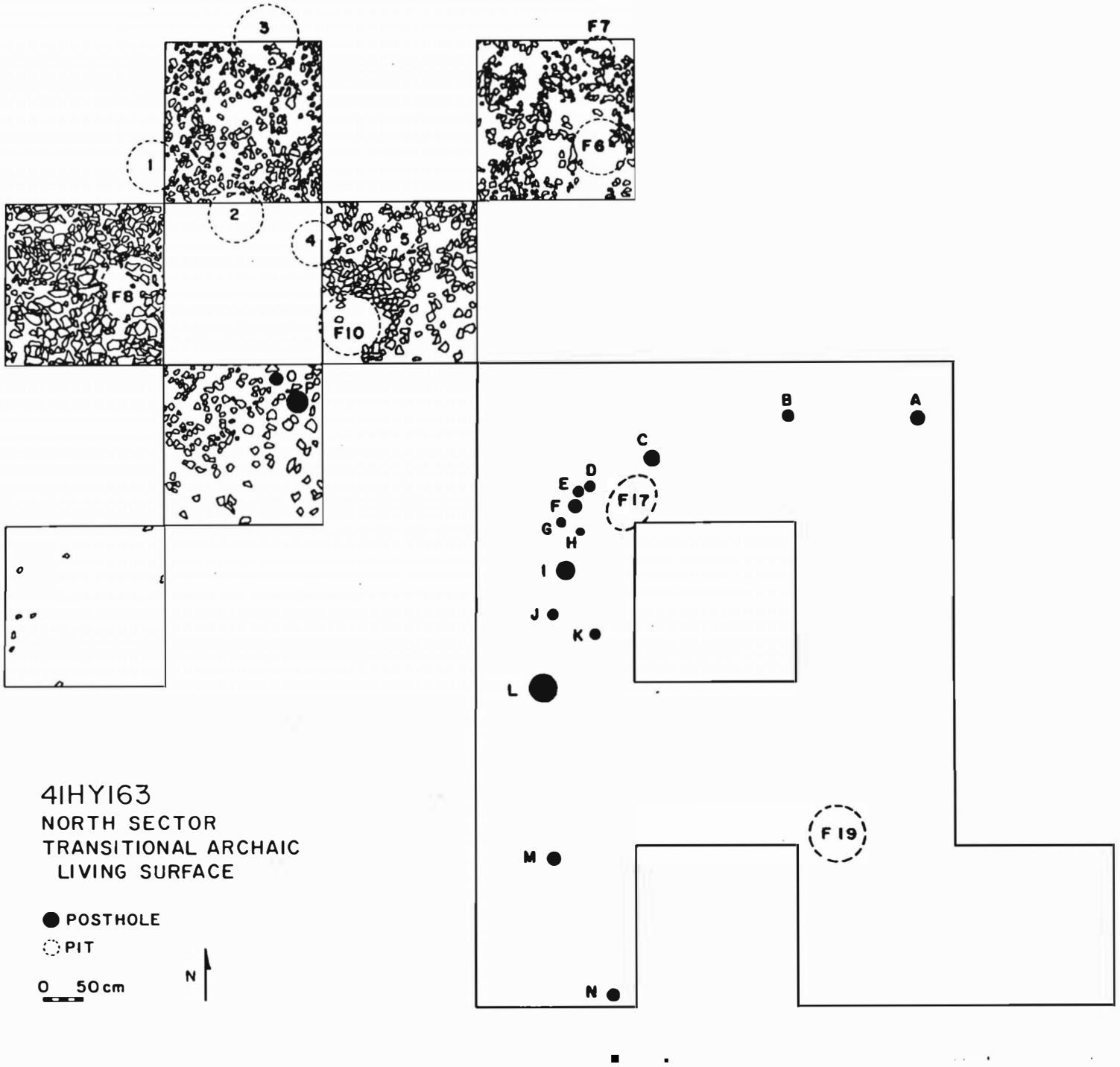

Figure 4. Burned rock midden (F3) and posthole pattern (A-N) at 41 HY 163.

out. Around F10 in Figure 4, an increased density of fire-cracked rock can be observed. In all likelihood, this represents a used cooking pit that was cleaned out by scooping out the fire-cracked rock and leaving them around the pit edges. The pit could then be reused by relining it with unburned slabs. Thus, the formation of this burned rock midden can best be explained by the overlapping hearth hypothesis proposed by Kelly and Campbell (1942).

The presence of an Ensor point (Figure 3, a) in the bottom of F8 clearly demonstrates that burned rock middens of this type were still accumulating during Late to Transitional Archaic times. No pits were observed in the limited horizontal exposure of F1; however, two ashy sections were observed in XU 26, a 50-cm-wide trench through F1. These may have been pits similar to those in F3. The F5 burned rock midden was relatively thin (10 cm) and not as dense as the others.

The depositional process of this midden is not clear. The extent of the F13 burned rock midden was not determined; however, the edges that were observed are quite clearly defined and may represent a cooking platform. This feature was present in the northeast corner of XU 52.

Primary Reduction of Cores: A major activity along the western edge of the site was the initial or primary reduction of cores. This was evident by the presence of F4, a Late Archaic core cache, and a high proportion of lithic debris with cortex. The core cache consisted of a concentration of approximately 350 partially worked cores and unworked cobbles arranged in a low pile 10 cm to 15 cm high. In the deposits associated with the core cache and in those along the westernmost edge of the site, the percentage of lithic debris with cortex ranges from 21% to 35%. This is approximately double the percentage for the deposits in other portions of the site and is a reflection of primary core reduction taking place at this location.

Butchering: In and around the above-mentioned core cache, several butchering and scraping tools were recovered. These included scrapers, butted knives and large flakes with carefully trimmed edges (Figure 5 a, b). Some bone material was recovered in this area; however, it was not present in abundance. In general, bone is poorly preserved at the site. Assuming the butchering and scraping tools were used at this location, these activities were conducted at a location where there was easy access to chert cobbles and cores.

Domestic Activity: The objective of the 1985 excavation was to define the southeast edge of the F3 burned rock midden and look for evidence of domestic activity. This evidence came in two forms including a posthole pattern and domestic midden debris.

The posthole pattern has been designated as F9 and can be observed in Figure 4. These postholes appeared as dark brown circular areas in a reddish-brown silt-clay matrix approximately 25 cm below surface. It was at this depth that the postholes were first recognized. The projectile points recovered from the 20 cm - 30 cm below surface zone associated with F9 include 1 Darl, 4 Ensor, and 3 Fairland points (Figure 3, c-f). This falls within the Transitional Archaic era. A Kinney point (Figure 3, b), a Pedernales point (Figure 3, i), and a Marshall point were recovered beneath this zone.

Several carbon samples were recovered from the 20 cm - 30 cm below surface zone in the area of the postholes. Six of these were sent to Beta Analytic Inc. in Coral Gables, Florida. Because of small sample size, all had to be lumped together and were determined to be of modern age: 109.8 0.6 %, modern BP (Beta-14153). The present landowner, David Zatopec, has stated that the previous landowner had done some brush burning in that general area of the site and in all likelihood, these carbon chunks are a result of that burning.

In all, 16 darkened stains were recognized, ranging in diameter from 27 cm to 9 cm. Hole F exhibited the greatest depth (28 cm). In profile, holes D, F,

H, I, and J had parallel sides and rounded bottoms. Holes A, B, C, E, G, L, M, and N were shallower (4 cm to 10 cm) and were basin shaped in profile. It should be noted that the postholes would not have been recognized had it not been for the contrasting color of the surrounding reddish-brown silty clay. If the postholes had been dug into a darker matrix, in all likelihood the pattern would have gone unrecognized. The deepest hole, hole F, is located in the sharpest portion of the arc and may represent a corner pole. The greater depth of the corner pole would have provided stability. The shallow holes probably represent the locations of poles that were not anchored. Some of the holes had straight sides that were vertically oriented and thus imply vertical walls, while others with straight sides were slightly angled toward the center of the arc and thus imply a lean-to or conically-shaped structure. The anchored poles could have been inserted vertically and later pulled into a dome or conical form during construction. It should be noted that the area opposite the arc of postholes showed some signs of disturbance and may also have once had postholes.

A sub-floor feature was encountered in what would have been the northwest corner of the structure. This pit, F17, is oval in outline and has a basin-shaped bottom. It is approximately 50 cm by 70 cm across and 26 cm deep. It contained a high density of lithic material in a dark loam matrix. Originally, it had been dug into the reddish silt-clay living surface. A portion of the pit extends into the underlying layer of chalky weathered bedrock. This pit probably functioned as a storage pit within the structure and was possibly converted into a trash pit, thus accounting for its contents.

An additional sub-floor feature was encountered in the central area of the structure. This pit, F19, is circular in outline and also has a basin-shaped bottom. It is approximately 90 cm in diameter and 30 cm deep. It was filled with several fist-sized rounded limestone cobbles within a matrix of soft weathered limestone. None of the cobbles showed any signs of use or wear. The function of this central pit is not clear, but may have once contained a post which could have served as a central upright to which the posts in the arc were attached. The rocks and weathered limestone may have been packed into the pit to secure this post.

Assuming symmetry, the overall dimensions of the structure would have been 8.2 m by 6.2 m. A very similar semicircular Archaic period structure approximately 3.8 meters in diameter was discovered at the Means Site (41 NU 184) in Nueces County (Gunter 1985; Ricklis and Gunter 1986). A circular or semicircular Late Prehistoric house 5.5 m in diameter has recently been documented at the McKinzie Site, 41 NU 221 (Ricklis 1986). There was evidence of both interior and exterior working hearths.

Prewitt (1981) discusses Transitional Archaic semi-circular arrangements of specialized cooking features and waste debris centered around large basin-shaped hearths at the Loeve-Fox Site (41 WM 230) in Williamson County. Five structures of probable Late to Transitional Archaic date have been identified at the Slab Site (41 LL 78) in Llano County. These consisted of central hearths and rock clusters (Patience Patterson, personal communication).

CONCLUSIONS

The excavations at 41 HY 163 have yielded significant information which will enhance our understanding of the prehistoric inhabitants of San Marcos. The site was occupied sporadically from the Early Archaic through the Late Prehistoric. A wide range of Archaic period activity areas was defined based on the excavation of several features and the analysis of lithic debris. These activities include cooking, primary reduction of cores, butchering, tool finishing, and domestic activity.

In the course of the excavations information was obtained on the formation process of thin burned rock middens. Hearth pits in various stages of use were

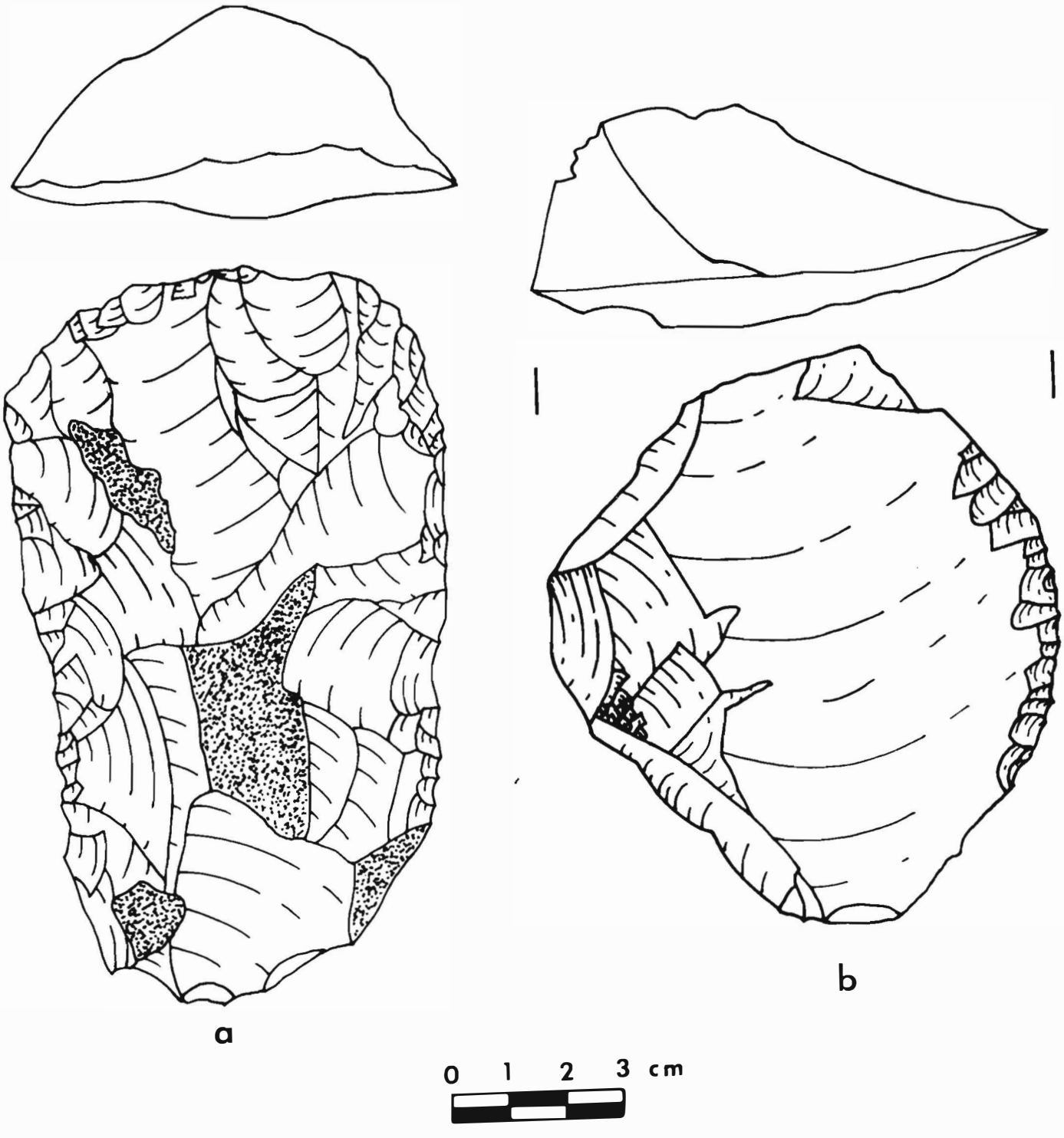

Figure 5. Tools recovered from butchering area at 41 HY 163. a, scraper; b, retouched flake.

observed in the F3 midden. It is suggested that thin middens of this sort result from repeated use and cleaning of hearth pits, lending support to the Kelly and Campbell (1942) intersecting hearth hypothesis. In addition, it was apparent that burned rock middens were still accumulating during Late to Transitional Archaic times.

Of special significance was the observation of a series of postholes forming a semicircular pattern that probably represents a domestic structure. It has been dated to the Transitional Archaic as indicated by the presence of Darl, Ensor, and Fairland points found in association.

ACKNOWLEDGEMENTS

I would like to thank the site owners, David J. Zatopek and Bud Hamilton, for their permission to excavate the site and for their enthusiasm and cooperation in assisting the Southwest Texas State University Archaeology Field School. I am indebted to the many Field School participants who made the collection of the data possible and offered keen insights and observations. Thanks are also extended to the Department of Sociology/Anthropology and the Office of Sponsored Projects of Southwest Texas State University for their financial support of this project.

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EDITOR'S NOTE

With this issue, some changes in format and style have been made so that **La Tierra** will conform with the 1988 **Style Guide** for the **Bulletin of the Texas Archeological Society**, adopted in April 1987. Projectile point names are no longer routinely emphasized or italicized, and some changes have been made in references and use of reference terms (ibid.; op. cit.; et al.; etc.).

Where the **Bulletin of the Texas Archeological Society** will use italics for book and journal names, **La Tierra** will continue to use boldface (emphasized) type; this minor difference is a function of the daisy wheel printer used in preparing camera ready copy for **La Tierra.**

AN INCISED STONE FROM BEXAR COUNTY, TEXAS

C. K. Chandler

ABSTRACT

Incised and/or grooved stones appear to be rare in archaeological sites, and their function and age continue to be open to considerable speculation. A single specimen from northwestern Bexar County is described and discussed.

THE ARTIFACT

The Bexar County (see Figure 1) incised stone reported here is a light gray, oblong, oval shape, fire fractured limestone cobble (Figure 2) with six closely spaced incised lines on one side. These lines are parallel to the long axis of the cobble and are along a curved portion of the stone. The stone is fractured along one side paralleling the lines and also on the face opposite the lines. Overall dimensions of the stone are: 88 mm long, 36 mm wide, and 38 mm thick. The incised lines vary in length from 36 mm to 40 mm and are 1 to 1.6 mm wide at their widest point. They are centered 2.5 mm to 3 mm apart, and depth varies to a maximum of 1.2 mm. The edges of the grooves are rounded and there is a light polish across the rock surface between the grooves. This specimen was recovered from a large burned rock midden (41 BX 708) in northwestern Bexar County in late 1986 by Jimmy Moos. A few sherds of bone tempered pottery with buff colored painted design and a few Edwards arrow points were also recovered from this site but not in direct association with this incised stone.

DISCUSSION

Incised and grooved stones have occasionally been reported over the last forty years or so (Kelley 1948; Watts 1965; Hill, House and Hester 1972; Warren 1975; Beasley 1980; Black and McGraw 1985) but never in large numbers. There has rarely been more than one specimen reported from a single site; however, five are reported from 41 BX 228 (Black and McGraw 1985). Some of these stones have one or more grooves along with several incised lines. The five specimens from 41 BX 228 and the single specimen reported here are without grooves.

Kelley speculated at length about the function of both the incised and grooved stones and suggested they may be tally stones, abrading stones, bark-beaters, pottery stamps, pigment stamps, or arrow shaft straighteners. He also states there is no evidence to support any of these suggestions. Black (Black and McGraw 1985), based on previously published reports, plotted the distribution of similar artifacts with incised lines, and this plotting indicates they

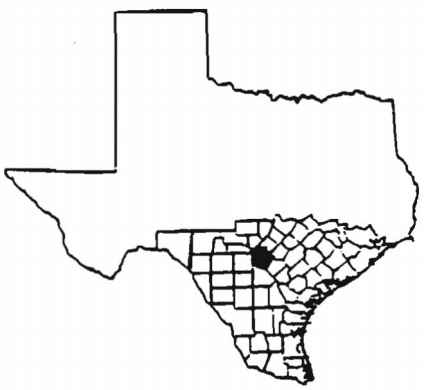

Figure 1. Map of Texas showing Bexar County (darkened area).

are primarily restricted to south, central and western Texas, with the greatest number from south-central Texas. He also suggests this distribution continues into northeastern Mexico.

Black (Black and McGraw 1985), with microscopic examination of the five BX 228 specimens, also observed: "Due to the soft nature of the limestone, all specimens showed considerable post-depositional damage from weathering, excavation tool retouch, and, to a lesser extent, from laboratory processing." Black (ibid.) states: "The narrow incised lines show little evidence of use. All visible wear occurs on the raised ridges between the lines. These ridges appear rounded, smoothed, and in some cases polished. Little evidence of striations (except recent damage) was noted. The absence of striations, lack of wear within the lines, and general rounded and somewhat polished nature of the ridges suggest that these artifacts were used to process some type of soft materials, perhaps wood, bark or leather.

Black (Black and McGraw 1985), at the suggestion of K. M. Brown, points out the similarity of the working surface formed by the parallel incised lines to that of Meso-American "bark beaters" and states: "The morphology of the cobble, combined with the wear pattern" leads him to hypothesize that these artifacts were used as "texture anvils."

Black (Black and McGraw 1985) recognizes these artifacts are subject to alteration during and after excavation and suggests more careful handling and processing. This author suggests that the surfaces of these fire fractured limestone artifacts are altered in their heating and subsequent weathering, and use wear evidence of polish may be removed in this process.

The single specimen from BX 708 was examined with a variable power binocular microscope for wear evidence. At the beginning of this examination, very little evidence of polish was noted. After handling, there was increased evidence of polish, though still faint. In an effort to determine the source of this increased polish, I rubbed a portion of the cobble surface (away from the lines) in the palm of my hand. What appeared to be use wear polish was immediately evident. This author also took note (as Black did) that the narrow incised lines showed very little evidence of use.

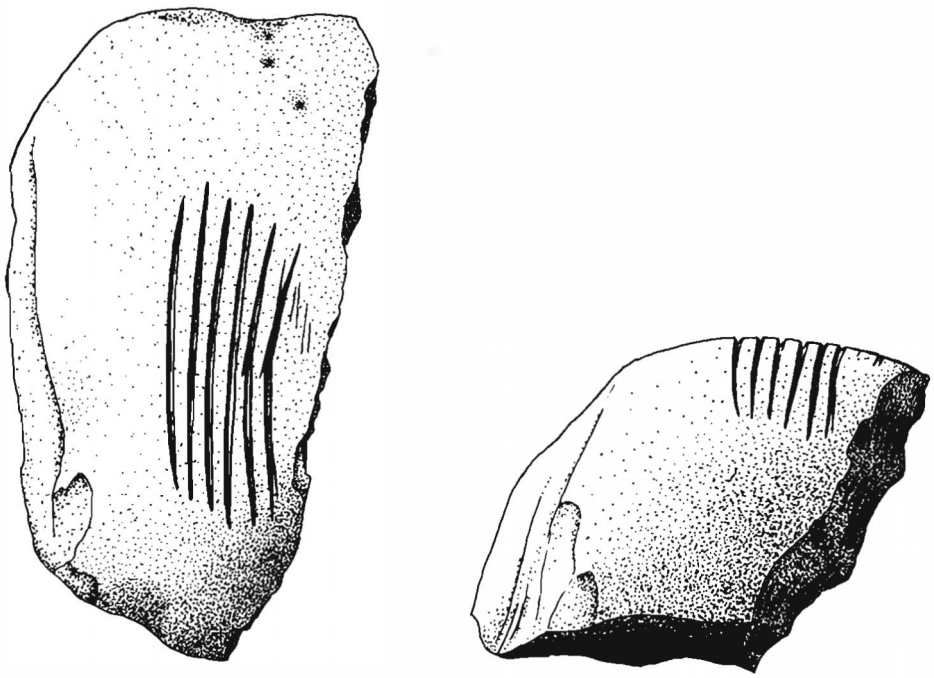

Figure 2. Grooved and Incised stone from 41 BX 708, Jimmy Moos Collection. Drawn to scale by Richard McReynolds.

SUMMARY

The reporting of this single incised limestone cobble adds to the growing information of the known occurrence and distribution of this little known and less understood artifact.

Kelley (1948), Hill, House and Hester (1972), Black and McGraw (1985) and possibly others, have speculated at length regarding their function, and Kelley has suggested possible dates for the grooved specimens as probably "Between 1000 and 1400 A.D." and "1200 - 1700" for the incised stones. Hill, House and Hester (1972) state: "It may be significant that four of the specimens come from sites with aboriginal pottery, and another comes from a site near which pottery has been found."

What little attention has been directed toward use wear analysis of these artifacts reveals a surprising lack of use wear evidence for an artifact suggested to have been used in any one of several very utilitarian activities. Their infrequent occurrence and questionable use wear evidence does not support their frequent use in any daily activity. It appears somewhat possible they may have had significance for some activity other than in day-to-day affairs. The near absence of use wear evidence may be due to yet unexplored changes in the artifact surface due to heat alteration and weathering.

The occurrence of Leon Plain pottery at BX 708 and an unidentified aboriginal pottery at four of the incised stone sites in southern and western Texas reported by Hill, House and Hester tend to support Kelley's (1948) suggestion of a Middle to Late Prehistoric time period for these artifacts.

ACKNOWLEDGEMENTS

I extend my sincere appreciation to Jimmy Moos for his loan of this artifact for study and documentation, and to Richard McReynolds for his excellent illustration of it.

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PALEO-INDIAN POINTS FROM THE CHOKE CANYON RESERVOIR AREA OF LIVE OAK AND MCMULLEN COUNTIES, SOUTHERN TEXAS

Thomas C. Kelly

ABSTRACT

Eight Paleo-Indian projectile point fragments, recovered during the UTSA-CAR project in the Choke Canyon Reservoir area, are reanalyzed and documented. Golondrina, Miniature Plainview, and the tentative "Levi" types are present in the collection.

INTRODUCTION

The 12 volumes of Choke Canyon Reservoir project reports (summarized in Hall, Hester and Black 1986) cover 15 years of intensive archaeological survey and excavations near the intersections of the Atascosa, Frio, and Nueces Rivers in Live Oak and McMullen Counties of southern Texas (see Figure 1). Seventy-two prehistoric sites were investigated with extensive Phase II excavations at 13 sites.

This epic project recovered volumes of data from significant Middle Archaic, Late Archaic, and Late Prehistoric components, rather scant Early Archaic components, and absolutely no subsurface Paleo-Indian components. This was despite a special effort (Hall, Hester and Black 1986:392) to investigate all localities with potential buried Paleo-Indian (or Early Archaic) components. Paleo-Indian points recovered were all surface finds from 12 sites. All were basal fragments and there was considerable doubt as to their classification (as expressed by the question marks; ibid.:393).

Because of my dissatisfaction with the photographs of these specimens, the points illustrated by Hall, Hester and Black 1986:277, Figure 78) and Hall, Black and Graves 1982:310, Figure 66), were borrowed from the Center for Archaeological Research, UTSA, for reanalysis. Richard McReynolds made line drawings, displayed in Figure 2, and Table 1 contains metric and observed data and classification findings.

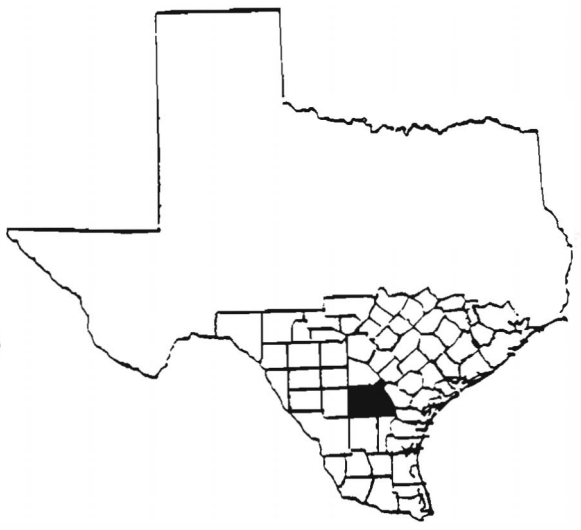

Figure 1. Map of Texas showing Live Oak and McMullen Counties (darkened area).

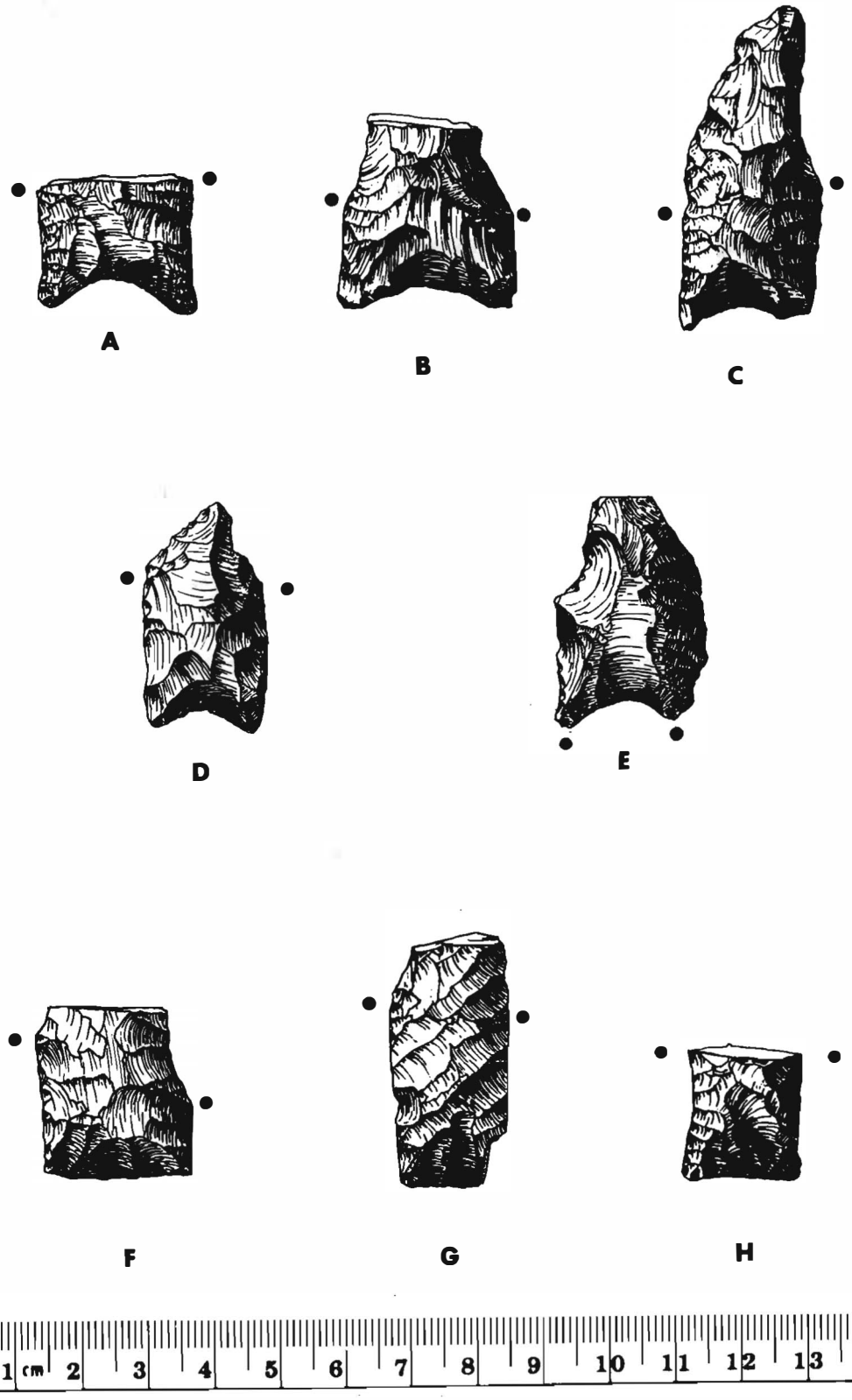

Figure 2. Paleo-Indian Artifacts Recovered from Choke Canyon Project. A, Golondrina; B, not classifiable; C and D, Miniature Plainview; E and F, unclassifiable; G, "Levi"; H, unclassifiable. Note concave scrapers, B, C, E, F. (Dots reflect extent of basal grinding.)

Table 1. Choke Canyon Paleo-Indian Point Data

FIGURE	LNGTH	THICK	TYPFL	BTHIN	WIDTH	HDIST	HPROX	BACON	CLASS
2, A	(22)	4	-	3	24	23	24	5	G
2, B	(29)	6	-	1	-	27	27	3	*
2, C	(48)	5	-	3	20	20	20	3	MP
2, D	(34)	6	-	3	18	18	18	3	MP
2, E	(36)	6	-	3	22	22	-	3	*
2, F	(20)	6	-	3	-	23	23	0	*
2, G	(39)	5	2	1	18	18	-	0	L
2, H	(19)	5	-	3	18	17	18	0	*

Note: See Kelly (1983) for variable definitions.

CLASSIFICATION:
G - Golondrina
L - "Levi"
MP - Miniature Plainview
* - Too altered for positive identification

All of the points are fragmentary, exhibiting impact or snap fractures. Four (Figure 2, B, C, E. and F) have been reworked with steep bitted concave scrapers flaked into a distal edge. This same type of scraper has been noted in the Paleo-Indian surface collection from Gamenthaler Creek (Gillispie County, north of Fredericksburg) but not in the excavated Paleo-Indian specimens from 41 GL 160 (Kelly 1987). The suggestion is that these points may have been curated and modified by Paleo-Indians or later people in both areas. Their probable use was as scrapers for shafts or foreshafts. Hafted scrapers would certainly be more efficient wood-working tools than hand-held ones. The specimen shown as Figure 2, C, displays a very heavy visual use-pattern with small step flakes from the dorsal side, suggesting wood scraping.

All points have ground basal edges except Figure 2, E, which has a lightly ground basal concavity. Breakage and reworked edges probably removed edge grinding.

POINT DESCRIPTION AND CLASSIFICATION

Figure 2, A (41 LK 199): Well-made point of high quality gray, slick chert. Deep impact flute from distal end on reverse side. The five millimeter basal concavity, one millimeter recurve of ground basal edges, short lunate basal thinning scars on reverse, and width dimensions, are all Golondrina attributes.

Figure 2, B (41 MC 194): Fair quality brown chert with small, lighter-colored inclusions. Right distal edge has unifacially flaked concave scraper with an edge angle of 58°. Left distal edge is crudely bifacially reworked. Long parallel basal thinning scars are on the reverse side, with short lunate scars on the obverse. The edges have been too badly damaged to tell if the edges were recurved or not. Basal concavity is only 3 mm, not a Golondrina attribute. Not enough of the original point remains for positive classification. Hall, Hester and Black (1986) classified it Golondrina; it should not be classified at all.

Figure 2, C (41 LK 8): Fine quality gray chert with white patina on one side. Twenty-five mm of right distal edge carefully reworked from uniface reverse side into steep bitted scraper with an edge angle of 85°. The sides

are straight and a consistent 20 mm wide. Some thin parallel basal flake thinning scars, heavily ground edges and a basal concavity of 3 mm, all fit into the Miniature Plainview classification, with close correspondence to the Brom Cooper Collection specimens from approximately eight miles west (Kelly 1983).

Figure 2, D (41 MC 10): Fair quality gray chert, with some light white patina both sides. The thick base was not well thinned nor is the workmanship very good. It was broken by distal impact fracture. Its narrowness (18 mm), parallel sides, long ground edges, and 3 mm basal concavity, fit the Miniature Plinview attributes. Editor's Note: This specimen was recovered from the surface of 41 MC 10 by Daniel Bayer, one of twenty Bexar County Gifted and Talented students who visited the TAS Field School at Choke Canyon for two days; these G&T students toured four excavated sites with Director Grant Hall, participated in afternoon classes, and surveyed three local sites not included in the TAS field school, which had been reported earlier by Curtis Dusek in **La Tierra** 7(3):39-41, 1980.

Figure 2, E (41 MC 75): Good quality tan-gray chert. Impact fracture and rework have damaged the point beyond any positive classification. Left distal edge has a steep bitted concave scraper 20 mm long. It has a 71° edge angle. Edge grinding is obliterated but light basal concavity grinding suggests the edges were also originally ground. The point appears to have a single 20 mm basal thinning scar or flute on obverse, and two 18 mm scars or flutes on reverse. Hall did not classify it and neither would I.

Figure 2, F (41 MC 84): Fair quality buff chert with purple inclusions. Right distal end has concave scraper flaked from reverse side with a 72° edge angle. Wear pattern is not conclusive. The basal edges are heavily ground and are parallel. There is no formal pattern to the base thinning scars which appear crude, but do form a wedge. Not enough remains for positive classification but the only Paleo-Indian type found commonly in South Texas, that is wide with parallel sides and a straight wedge-shaped base, is Scottsbluff. An exceptionally fine Scottsbluff base was found nearby in the Brom Cooper Collection (Kelly 1983). Typologically, it is better not to classify doubtful points such as this one.

Figure 2, G (41 MC 234): Exceptionally fine slick gray chert. Right proximal is a small impact scar. The distal end is a snap break. This was a long, narrow (18 mm) parallel-sided point with a straight base thinned on obverse by two long parallel flakes. A pop-out flake on the reverse side obscures any evidence of the thinning method. The flaking is an extremely fine example of oblique narrow parallel flaking without leaving a median ridge. The cross-section is lenticular and overall, it is an exceptionally fine example of the flint knapper's art.

It can be compared to three points from the Levi Rockshelter (Alexander 1963:Figure 2, d, h, i). These are part of a series of points that Alexander thought were a continuum and called them "Plainview-Angostura." The Levi points measure very close to the 18 mm width of the Choke Canyon point, and all have lenticular cross-sections, narrow oblique parallel flaking from lower left to upper right, nearly parallel edges, and straight to very slightly concave bases.

Weir (1979:25, Figure 9, G) found one of these points in the Greenhaw Site in Hays County which he labelled Angostura-Plainview and compared to the Levi Rockshelter points. Several of those points have been observed in collections from around Fredericksburg. Three points with identical features were the earliest points found in Paleo-Indian site 41 GL 160, north of Fredericksburg (Kelly 1987:Figure 9, a and b). These were given a name, tentatively "Levi,"

in the hope of securing data from more specimens. They are not members of the Plainview family, and thus are not "Plainview-Angostura" or Angostura-Plainview.

Figure 2, H (41 LK 51): Exceptionally fine slick semi-translucent honey-colored chert. This is another wedge-shaped straight base point with ground base and basal edges. The edges and base show exceptionally fine regular flaking. Unfortunately, the fragment is only 20 mm long and can not be classified with any degree of confidence. It is one millimeter wider at each end than at mid-point and with a width of 18 mm, there seem to be no Texas points to compare it to. Not classified.

CONCLUSIONS

One can argue whether these eight mutilated points are worth the expenditure of much analysis effort. As long as this paper and the artifacts are properly curated, someone is going to make comparisons that can only add to our rather scanty knowledge of the Paleo-Indians they represent. Eventually, this knowledge will reach a point that sophisticated theories can evolve and be tested. Something is always better than nothing.

A restricted sampling universe, small numbers of Paleo-Indian people, shortness of the Paleo-Indian period (3,000 years compared with 8,000 years for the Archaic and Late Prehistoric) and the great depth of alluvial and colluvial deposits, were the postulated reasons for the non-discovery of Paleo-Indian sites (Hall **et al.** 1986:394). Probably luck should be added as the final reason, as there is no question of the presence of Paleo-Indian people in the Choke Canyon area, evidenced by numerous Paleo-Indian points in many private collections from the area (Kelly 1983).

The failure to find buried Paleo-Indian components in the greatest archaeological effort ever expended in South Texas, the Choke Canyon project, is a great disappointment and should point out the importance of continued search for Paleo-Indian sites. When found, we must make a concentrated multi-disciplinary research effort, comparable to those expended at Choke Canyon, whether CRM (Contract Resources Management) funds are available or not. The presently bleak picture for funding such operations suggests that organizations like the Texas Archeological Society and the Southern Texas Archaeological Association will have to carry the ball.

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