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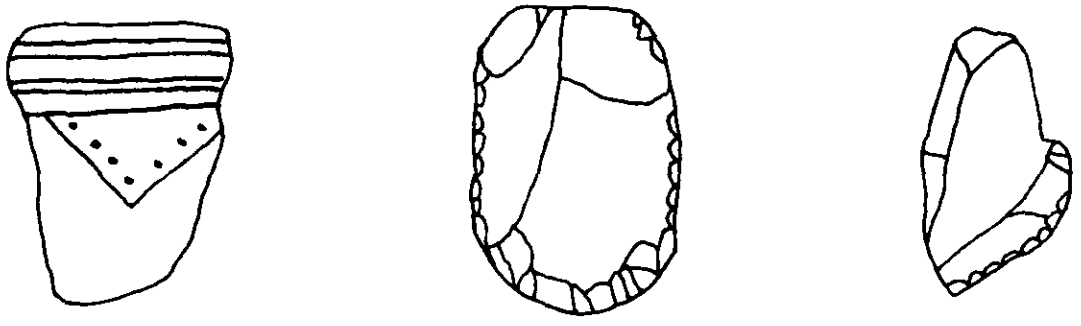
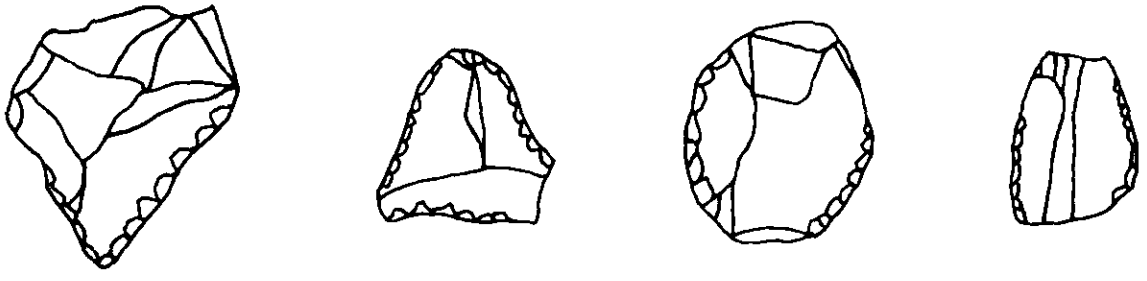


Incised Sherd and Scrapers from Site 41WH72



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Contents

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Excavations at Site 41WH72, Wharton Co., Texas

L. W. Patterson, J. D. Hudgins, S. M. Kindall, and W. L. McClure

Introduction

This paper summarizes the results of test excavations at prehistoric site 41WH72 in Wharton County, Texas. This site was discovered and recorded for state records by Joe Hudgins. Work by the Houston Archeological Society (HAS) was made possible through the courtesy of the landowner, Douglas Koehler.

Excavations at site 41WH72 were conducted by the HAS in the spring of 1994. This project is part of a research program on the prehistory of the lower San Bernard River drainage system. Excavation results for 13 sites along the river and its tributary streams have now been published, including sites in western Fort Bend County and eastern Wharton County.

Excavations at this site were directed by Joe Hudgins, HAS Field Director. Individuals who participated in excavation work include Karen Acker, Charles Boyle, Melissa Brown, Daniel Chu, Bill Csanyi, Cheryl Faber, Richey Ebersole, Richard Gregg, Joe Hudgins, Bill Just, Sheldon Kindall, Bernard Naman, Don McReynolds, Ray McCausland, Tommy Nuckols, Allen Oravetz, Etta Palmer, Tom Palmer, Lee Patterson, Lenore Psencik, Gary Ryman, Robert Shelby, Jeanette Siciliano, Dudgeon Walker, and Muriel Walker. Sheldon Kindall handled site records and mapping. Melissa May directed laboratory processing of artifacts. Bill McClure processed the fine screen samples and analyzed the biological materials.

Site 41WH72 has an occupation sequence that includes the Early Ceramic and Late Prehistoric time periods. Artifact types from this site are typical for sites in this general area during the time periods represented.

Site setting

Site 41WH72 is located on a gently sloping high terrace south of Boone's Branch, which is a tributary stream of the San Bernard River. This site is on the edge of the overall San Bernard River flood plain. Site 41WH73 (Patterson and Hudgins 1992) is the nearest other archeological site found so far on Boone's Branch.

The general area is a mixture of woodlands and coastal prairie. This area would have provided a variety of natural floral and faunal food resources. Nuts and acorns would have been among the available floral resources. Poor preservation of floral materials precludes description of much of the aboriginal diet. However, the range of faunal resources exploited is fairly well known for prehistoric sites in this area (McClure 1986,1987,1989; Patterson et al. 1987,1993). Deer and turtle are the most common faunal remains recovered at sites in inland Southeast Texas.

Excavation details

A total of seven 1-meter square pits were excavated at this location. A site excavation map made by Sheldon Kindall is shown in Figure 1. The area tested is 41 meters long and 13 meters wide. Since artifacts were found in all excavation pits, these are minimum dimensions for this site. All soil was processed through 1/4-inch screens. Excavations were done in a series of 5 cm levels, until culturally sterile soil was encountered. Samples were taken from Pit A for fine screen work.

The soil in the occupied excavation levels was a dark sandy loam, and natural soil stratification was obscured by this soil type. The soil color became lighter at depths of 45-50 cm, with a change

in soil type to sandy clay. Five of the excavation pits were terminated at a depth of 50 cm, and two pits were terminated at a depth of 55 cm.

The fine-screen samples from each level of Pit A were dried and then processed through 30-mesh screen (opening = 0.595 mm), with floating and sinking material saved for plant and small animal remains. These items were examined with a binocular microscope.

The soils at the site are not conducive to preservation of organic matter. The only bones that were unburned are of an armadillo. From the fine screen samples, unburned seeds were found only as deep as 20 cm. Some of the soil and bones from the fine screen samples have been burnt.

Site chronology

Site 41WH72 has an occupation sequence that includes the Early Ceramic (A.D. 100-600) and Late Prehistoric (A.D. 600-1500) time periods. When radiocarbon dates are not available, temporal placement of an excavated stratum is done by artifact types. Because of the low concentration of Indian artifacts, the 0-5 cm excavation stratum may represent a modern accumulation of soil. The Late Prehistoric period at this site is represented by the 5 to 35 cm excavation interval. Excavated strata below 35 cm represent the Early Ceramic period. Separation of the two time periods is discussed below in relation to lithic and ceramic artifact types. All excavation levels at this site contained pottery, and no earlier Archaic period component was detected. Site 41WH72 has the same occupation sequence as nearby site 41WH73 (Patterson and Hudgins 1992).

Projectile points

A summary of projectile points recovered at this site is given in Table 1, and points are illustrated in Figure 2. The Late Prehistoric period is represented by Perdiz and Scallorn arrow points. Perdiz points were found at excavation depths of 15-20 cm and 30-35 cm. Scallorn points were found at excavation depths of 10-15 cm and 15-20 cm. No arrow points were found below 35 cm, and this depth is judged to be the boundary between the Early Ceramic and Late Prehistoric periods at this site.

The Scallorn point found at 15-20 cm depth is not quite finished, and lacks some final retouch flaking on the blade section. It is estimated that this specimen would weigh about 3 gm after completion. A weight of 3 gm and a maximum thickness of 8 mm for this specimen is atypical for arrow points. In Southeast Texas, arrow points generally weigh less than 2.3 gm and have thicknesses under 5 mm (Patterson 1985). The atypical metric attributes of this specimen are probably related to the starting geometry of the flake blank and/or the skill of the knapper. The basal shape and size of this specimen are typical for Scallorn points from this general area. The stem neck width is 9 mm.

An unclassified arrow point found in the 20-25 cm stratum (Figure 2F) had been used as a perforator as well as an arrow point. The tip of this specimen is well smoothed. It appears that this specimen was first used as a perforator, without significant damage to the tip. Then the specimen was used as an arrow point, with severe impact damage occurring. Both shoulders are fractured and the stem is missing. It has been shown experimentally that hafted arrow points function well as perforators (Patterson 1995). The use of perforators with arrow point forms by Caddo Indians is well known (Baskin 1981: Figure 34).

In Southeast Texas, the use of dart points continues after the Early Ceramic period, into the Late Prehistoric period. At site 41WH72, only one dart point fragment (Figure 2G) was found at a depth less than 35 cm in the Late Prehistoric period, in the 25-30 cm stratum. All other dart points recovered in the excavations occurred below 35 cm in the Early Ceramic period. A Kent dart point

(Figure 2J) was found on the surface of this site, and a well-made Kent point was found in the 45-50 cm stratum. In Southeast Texas, Kent points were made from the Middle Archaic through the Late Prehistoric time periods (Patterson 1991a). Dart points tended to become smaller in later time periods. A dart point fragment (Figure 2H) and a dart point preform fragment (Figure 2K) were found in the 35-40 cm stratum.

The chronological placement of Perdiz and Scallorn arrow points at site 41WH72 is another demonstration that the Scallorn-Perdiz chronological sequence of Central Texas does not apply to Southeast Texas (Patterson 1991b). Prewitt (1981,1983) shows that the Scallorn point started about A.D. 600 in Central Texas and was replaced by the Perdiz point about A.D. 1200. In Southeast Texas, the Perdiz point starts as an indigenous development about A.D. 600. Unlike the situation in Central Texas, Perdiz and Scallorn arrow points were used concurrently through most of the Late Prehistoric period in Southeast Texas. The Perdiz point started earlier in Southeast Texas than in Central Texas, and the Scallorn point continued in use later in Southeast Texas than in Central Texas. At site 41WH72, two Perdiz points were found in the 30-35 cm stratum, while the deepest Scallorn point was in the 15-20 cm stratum. Many archeologists from Central Texas do not seem to understand, or want to accept, different chronologies for arrow point types in Central and Southeast Texas. This situation can be termed the "Austin syndrome."

General lithics

A summary of unifacial scrapers found at site 41WH72 is given in Table 2, and scrapers are illustrated in Figure 3. Scrapers shown in Figures 3C,E,G may have edge modification due to heavy use-wear rather than purposeful retouch. At prehistoric sites in Southeast Texas, a high proportion of stone tools are utilized flakes rather than purposefully made formal tool types.

A summary of lithic flake counts for each excavation unit is given in Table 3. There were no dense concentrations of flakes at any level in any of the excavation pits. It is concluded that only a low level of lithic manufacturing was being done at this site. Flake size distributions are given for each stratum in Table 4. There are no obvious trends in differences in flake size distributions between the various strata. Because only 9 flakes were found at 45-50 cm, the Kent dart point found in this stratum may have been manufactured at a different location.

Two cores made from chert cobbles were found at this site. One miscellaneous core is from Pit A, 40-45 cm, with a length of 70 mm and a diameter of 45 mm. The other core is from Pit C, 20-25 cm. This core has a triangular cross section with remaining cortex on one face, irregular flake scars on a second face, and parallel flake scars on a third face (Figure 3A). There is fine retouch on the striking platform edge. The dimensions of this core are: length 56 mm, width 40 mm, and thickness 30 mm. This core was used to produce prismatic blades and prismatic flakes. Prismatic flakes with dorsal ridges are stronger than flakes with flat surfaces, and less subject to breakage during the heavy pressure flaking that occurs in the making of arrow points. There is only one small prismatic blade in the flake collection from this site, 19 mm long and 9 mm wide. One small piece of quartzite (Pit G, 25-30 mm) may be from a hammerstone. Only 8 thick chert pieces were found at this site, which is another indication of the low level of lithic manufacturing activities here.

Chert flakes over 15 mm square in size include 6.3% primary flakes (covered with cortex), 24.6% secondary flakes (partially covered with cortex), and 69.1% interior flakes (no remaining cortex). Thus, only 30.9% of flakes have remaining cortex. Compared to results of experimental flaking of chert cobbles (Patterson 1981), this low percentage of flakes with remaining cortex shows that mainly flake blanks were being brought to this site for lithic manufacturing, with only a modest amount of primary reduction of chert cobbles at the site. This is consistent with the low number

of chert cores (2) found here.

Ceramics

A total of 497 sandy paste sherds were found in the excavations at this site. Sherd counts by excavation unit are given in Table 5. All of the sherds have coarse sand in the paste, which might lead to classification as O'Neal, variety Conway (Aten 1983:238). However, Aten states that this ceramic type has coarse sand added as temper. At site 41WH72, the coarse sand appears to occur naturally in the local clay. Fired clayballs at this site have the same sort of coarse sand. Therefore, all sherds at 41WH72 are classified as Goose Creek, where the sandy paste is not due to added sand temper. Also, some of the sherds at this site are incised. Aten (1983:238) classifies O'Neal as an undecorated pottery type. The Goose Creek pottery type was made throughout the Early Ceramic and Late Prehistoric time periods (Aten 1983).

The sherd collection has 19 (3.8%) rim sherds, and 6 (1.2%) incised sherds. Incised sherds are tabulated in Table 6, and 5 of the incised sherds are illustrated in Figure 4. Two of the sherds (Figures 4B,F) have pendant triangles with internal punctations. One rim sherd with a drilled lace hole was found in Pit B (25-30 cm) (Figure 4C). As noted above, there is no preceramic component at this site.

Miscellaneous artifacts

A few small pieces of sandstone were found that seem to have been used as abrading tools. A piece of sandstone 20 mm in diameter was found in Pit A (20-25 cm), a piece 17 mm in diameter was found in Pit B (20-25 cm), two pieces 25 mm in diameter were found in Pit A (30-35 cm), and a piece 40 mm long and 15 mm diameter was found in Pit E (50-55 cm). A piece of red ochre was found in Pit E (45-50 cm). Two small pieces of asphalt were found in Pit B (5-10 cm).

Fired clayballs

A total of 1145 fired clayballs were found at site 41WH72. A tabulation of numbers, weights, and size ranges of clayballs by excavation unit is given in Table 7. Clayballs ranged from 15 mm to 70 mm in diameter, with an average weight of 6.7 gm per clayball. About 18% of prehistoric sites in inland Southeast Texas have fired clayballs (Patterson 1989), and they are found in site components from the Late Paleo-Indian through the Late Prehistoric time periods. Clayballs were used for roasting food, though the range of food types processed has not yet been determined. Hudgins (1993) has experimentally demonstrated the use of heated clayballs for roasting meat, with clayballs retaining heat much longer than hot wood coals.

Several of the excavation units have significant numbers of iron concretions, some as large as 40 mm diameter, as shown in Table 8. Iron concretions at this site may have been used with clayballs for roasting, in the same manner that caliche pieces were used with clayballs at some sites in this region.

Bone tool

A bone tool was recovered from the 15-20 cm stratum of Pit E. A metapodial of a deer was modified by being split longitudinally and ground to a tapering point. It was probably discarded when it broke. Present length is 32 mm. It has scars from use so it could be either an awl or a projectile point. Three views are shown in Figure 4G.

Analysis of faunal and floral remains

The flotation material from the fine screens yielded 14 varieties of seeds from the 10-15 cm stratum. These include flatsedge (*Cyperus* sp.), hackberry (*Celtis* sp.), yaupon (*Ilex vomitoria*), cleavers (*Galium aparine*), sumpweed (*Iva* sp.), and nine unidentified plants. In the 15-20 cm stratum, seven varieties of seeds were recovered. These are flatsedge, hackberry, yaupon, mustang grape (*Vitis mustangensis*), and three unidentified plants. Some of the seeds still have traces of the pericarp and none are charred.

Remains of a small beetle were in the 10-15 cm stratum of Pit A.

One shell each of four tiny varieties of land snails was recovered with the fine screen material from the 10-15 cm stratum of Pit A. These are *Strobilops texasiana*, *Gastrocopta contracta*, *Gastrocopta pentodon*, and *Helicodiscus singleanus*. Three varieties of larger land snails were recovered from the screens in the field. Two *Olygyra orbiculata* shells were in the 0-5 cm stratum and 3 were in the 5-10 cm stratum of Pit B. One of these from the 5-10 cm stratum still includes its operculum. Another of the same species came from the 30-35 cm stratum of Pit G. In the 0-5 cm stratum of Pit B there were 2 *Praticolella berlanderiana* and 7 *Polygyra texasiana* shells. Another *Polygyra* shell came from the 5-10 cm stratum of Pit B. None of the shells had been subjected to fire.

From the surface and the 1/4-inch screens of seven pits, 622 bone fragments were recovered. Of that number, 482 (75%) could not be assigned to any particular vertebrate group. From the fine screens of Pit A, 1159 bone fragments were recovered. Of that number, 1003 (87%) could not be assigned to a taxon.

The vertebrates that were identified are tabulated below:

From the 1/4-inch screens:

Testudinata	unidentified turtle
Terrapene sp.	Box turtle
Aves	unidentified small bird
Mammalia	unidentified medium mammal
Mammalia	unidentified large mammal
Didelphis virginiana	Nine-banded armadillo
Procyon lotor	Raccoon
Odocoileus virginianus	White-tailed deer
cf. *Bison bison*	probable bison

From the fine screens:

Teleost	unidentified small fish
Teleost	unidentified medium fish
Lepisosteus sp.	Gar
Ictalurus sp.	Catfish
Aplodinotus grunniens	Freshwater drum
Anolis carolinensis	Green anole
Serpentes	unidentified snake
Mammalia	unidentified small mammal
Mammalia	unidentified medium mammal
Rodentia	unidentified small rodent
Reithrodontomys fulvescens	Fulvous harvest mouse
Sigmodon hispidus	Hispid cotton rat

Discussion Armadillo bones were found in Pit C from the surface to 15 cm. These 11 bones are unburned and include cranial fragments, vertebrae, scapula, pelvis, both femora, tibia, and calcaneus of a sub-adult individual. It is interesting that no dermal bones were recovered. Armadillos invaded the area east of the Colorado River after 1905 (Davis and Schmidly 1994:85). Land snail shells and seeds, none of which date to the prehistoric occupation, were found no lower than 15 cm except for one at 35 cm.

No other bones were recovered from Pit C. A fragment of a carpometacarpus of a small bird was at the 30-35 cm stratum in Pit A. A molar tooth of a raccoon came from the 10-15 cm stratum of Pit B. A nearly complete shaft of a radius of a large bovid (probably bison) came from 25 cm deep in Pit G. This item had been badly gnawed by rodents and carnivores and was substantially eroded due to weathering. Although bones were relatively scarce throughout the site, bones of deer (including probable deer as well as deer-sized mammals) and turtles, as well as unidentified bone fragments, were found in all pits other than Pit C at all levels from 10 to 45 cm. Most of the remains of deer and probable deer are teeth or tooth fragments, but there are a few identifiable pieces of humeri, radii, tibia, metapodials, lunar, tarsal, astragali, and calcaneus.

A completely different array of animals is reflected in the results of the fine screen examination from Pit A. Bones of at least three kinds of fish (gar, catfish, drum) were recovered from levels of 5 to 50 cm. Elements include scales, teeth, tooth-bearing bones, vertebrae, spines, ribs, and pterygiophores. Vertebrae of a lizard and a snake came from the 40-45 cm and 45-50 cm strata. Bones of small mammals including at least two kinds of rodents (harvest mouse and cotton rat) were in levels of 5 to 50 cm. Elements include teeth, vertebrae, femur, tibia, uncertain long bones, metapodials, phalanges, carpal, and astragalus.

All of the plants, snails, and vertebrates that are in the collection can be found near the site today.

Summary

Site 41WH72 is a seasonal campsite with occupation components in the Early Ceramic and Late Prehistoric time periods. The various excavation units generally do not have high numbers of artifacts, and excavation results show that occupations occurred over a fairly large area. Occupation events may have been by small groups of Indians who did not always camp on the same spot. The amount of pottery found at this site may indicate at least moderate length time intervals for some occupation events. Pottery is not easily transported by mobile hunter-gatherer groups. Artifact types at 41WH72 are typical for sites in this general area during the time periods represented. Data from this site demonstrate once again that chronologies for Perdiz and Scallorn arrow point types are not the same for Central and Southeast Texas.

The single weathered bone of a bison at a depth of 25 cm indicates that bison were present in the area during the early part of the Late Prehistoric time period.

The occupants consumed deer and turtle as the apparent primary source of protein, but also used small fish, small reptiles, and rodents on occasion. This added dietary data would have been overlooked if the fine screen material had not been included in the research design.

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Table 1. 41WH72 Projectile Points

type	pit	level, cm	dimensions, mm L	W	T	Fig. 2
Scallorn	A	10-15	20	15	3	A
Scallorn	E	15-20	40	14	8	B
Perdiz	D	15-20	38E	20	2	C
unclassified	A	20-25	29E	21E	4	F
dart point fragment	A	25-30		28	6	G
Perdiz	C	30-35	34E	21	4	D
Perdiz	E	30-35	28E	17E	3	E
dart point fragment	G	35-40			7	H
dart point preform	B	35-40		21	8	K
Kent		surface		20	6	J
Kent	E	45-50	61	20	7	I

E - estimated

Table 2. 41WH72 Scrapers

pit	level, cm	dimensions, mm L	W	T	Fig. 3
A	10-15	49	26	4	B
D	20-25	34	20	4	C
G	35-40	34	24	9	D
B	25-30	24	24	4	E
A	15-20	29	24	9	F
A	15-20	22	16	4	G

Table 3. 41WH72 Lithic Flake Counts

level, cm	excavation pit A	B	C	D	E	F	G	total
0-5	4		1			2		7
5-10	2	10		3	3	6	4	28
10-15	14	13	4	7	12	15	13	78
15-20	9	11	2	5	27	4	5	63
20-25	14	13	8	9	9	12	11	76
25-30	9	9	3	10	3	5	6	45
30-35	5	5	7	7	3	6	6	39
35-40	9	7	3	2	4	9	10	44
40-45	4	7	8		2	10	8	39
45-50	4		1		2		2	9
50-55			2					2
	74	75	39	43	65	69	65	430

Table 4. 41WH72 Flake Size Distributions
(in percent by level)

flake size, mm square	level, cm 5-10	10-15	15-20	20-25	25-30	30-35	35-40	40-45	45-50
under 15	60.7	61.5	58.7	51.3	55.6	59.0	50.0	64.1	77.8
15-20	21.4	28.2	25.4	21.1	31.1	20.6	31.8	17.9	22.2
20-25	10.7	9.0	9.5	19.7	11.1	12.8	13.6	10.3	0.0
25-30	3.6	1.3	1.6	6.6	2.2	5.1	4.6	0.0	0.0
30-35	3.6	0.0	4.8	1.3	0.0	2.5	0.0	7.7	0.0
no. of flakes	28	78	63	76	45	39	44	39	9

Table 5. 41WH72 Sherd Counts

level,cm	excavation pit A	B	C	D	E	F	G	total
0-5	1					1		2
5-10	6	6		6	6	9		33
10-15	9	7	1	12	7	21		57
15-20	23	1	1	11	42	11	2	91
20-25	22	7		7	33	17	8	94
25-30	26	6		19	13	11	4	79
30-35	18	1	1	8	17	8	8	61
35-40	10		1	2	13	11	7	44
40-45	1		1		7	6	6	21
45-50		1			2	2	3	8
50-55					7			7
	116	29	5	65	147	97	38	497

Table 6. 41WH72 Incised Sherds

pit	level, cm	type of decoration	Fig. 4
D	25-30	rim sherd, 3 parallel lines	A
F	10-15	rim, 5 parallel lines, pendant triangle with punctations	B
A	15-20	notched rim	D
E	20-25	thumb nail impressions	E
F	20-25	rim, 4 parallel lines, pendant triangle with punctations	F

Table 7. 41WH72 Clayballs (over 15 mm diameter)

level, cm	no.	wt., gm	size range diameter, mm	avg. wt., gm per clayball
0-5	1	4	20	4.0
5-10	13	53	15-30	4.1
10-15	43	142	15-50	3.3
15-20	56	258	15-50	4.6
20-25	89	474	15-50	5.3
25-30	174	917	15-60	5.3
30-35	133	715	15-60	5.4
35-40	239	1786	15-60	7.5
40-45	257	2373	15-70	9.2
45-50	125	824	15-60	6.6
50-55	15	85	15-35	5.7
total	1145	7631		6.7

Table 8. 41WH72 Iron Concretions (over 15 mm diameter)

level, cm	A	B	C	D	E	F	G	total
0-5								0
5-10		3						3
10-15		14	5					19
15-20		9	3				9	21
20-25	1	3	24					28
25-30	4	6	23	7	4			44
30-35		9	50	2				61
35-40	13	4	15	4	5			41
40-45	6	5	36		1			48
45-50		4	19					23
50-55			43					43
total	24	57	218	13	10	0	9	331

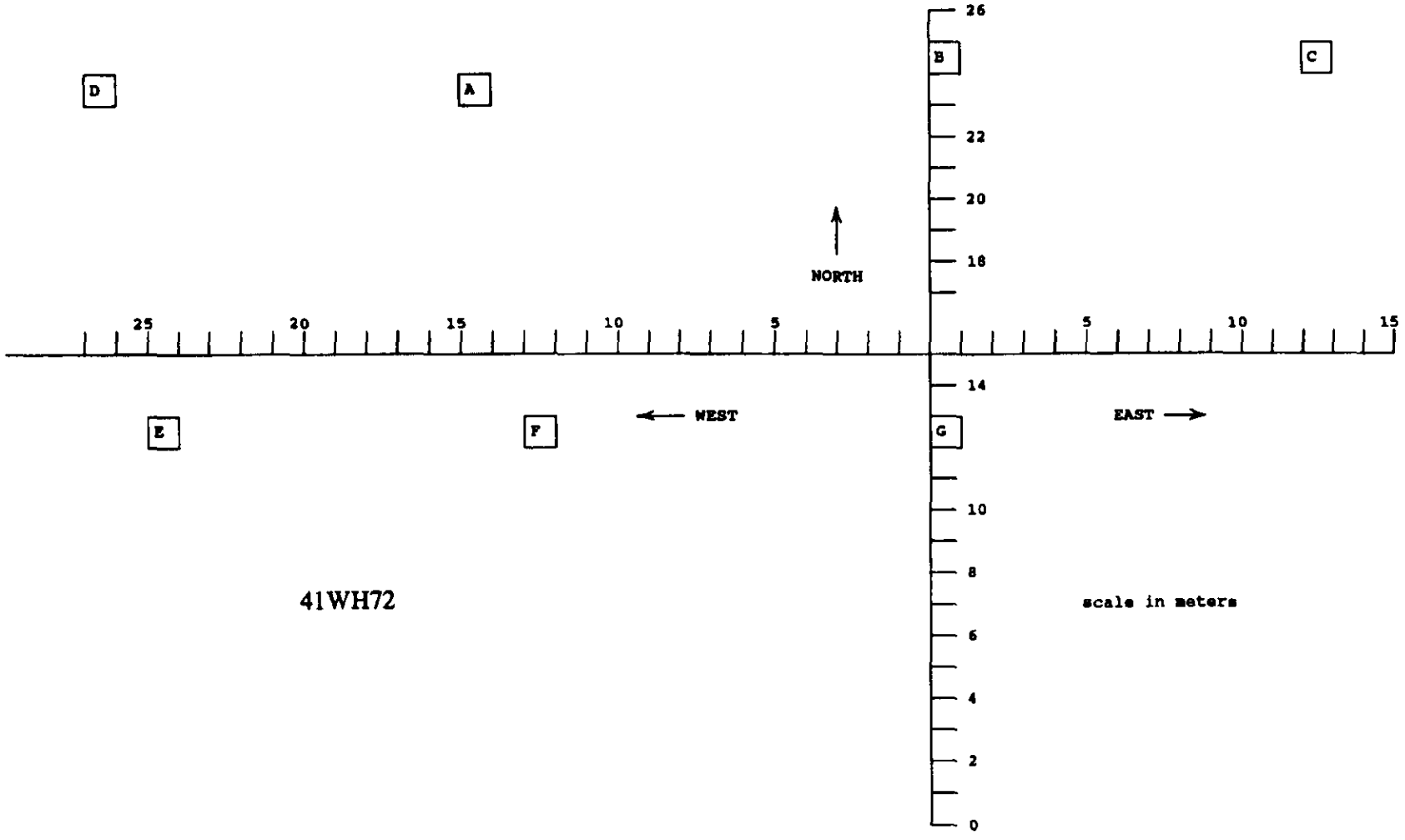
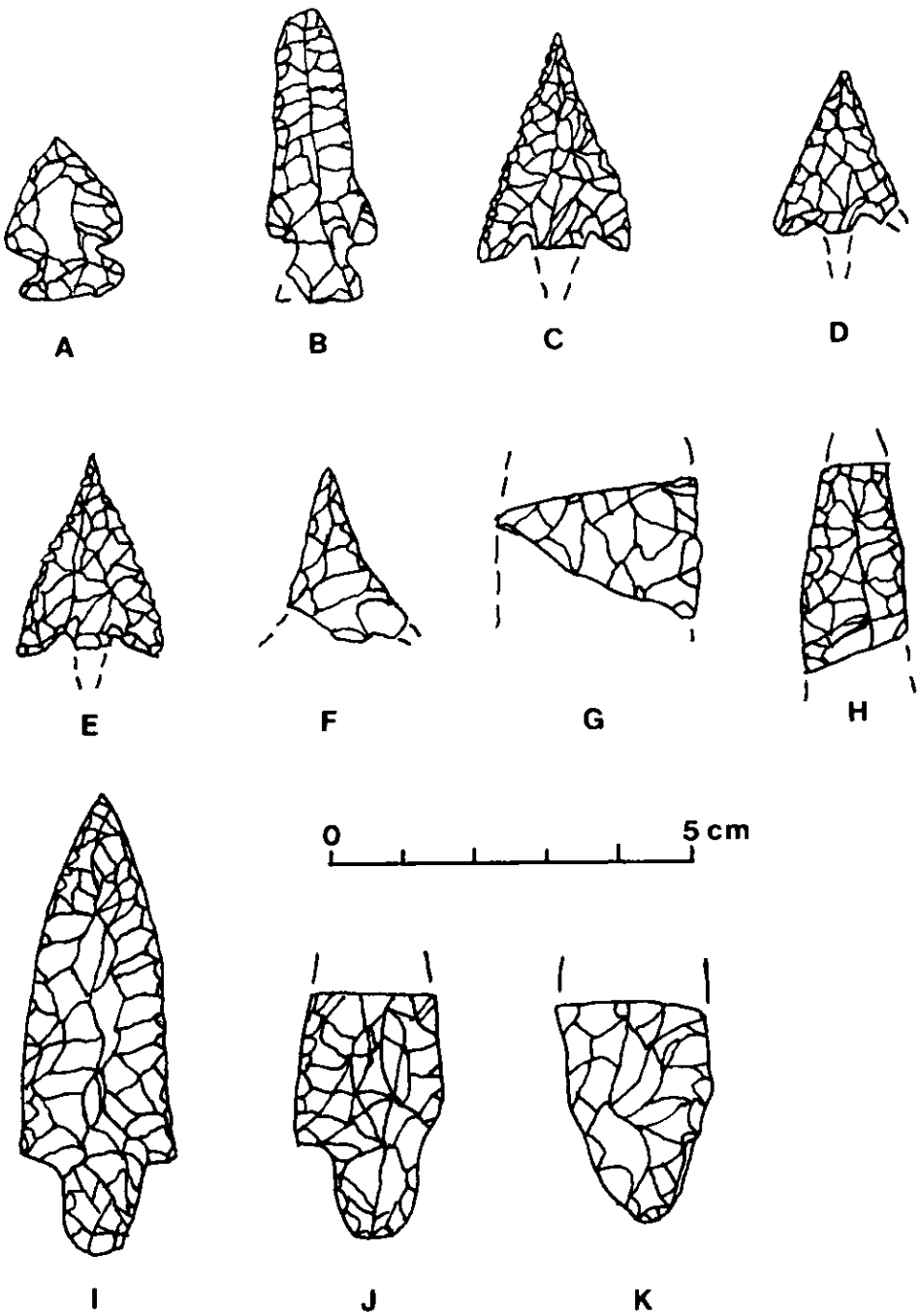
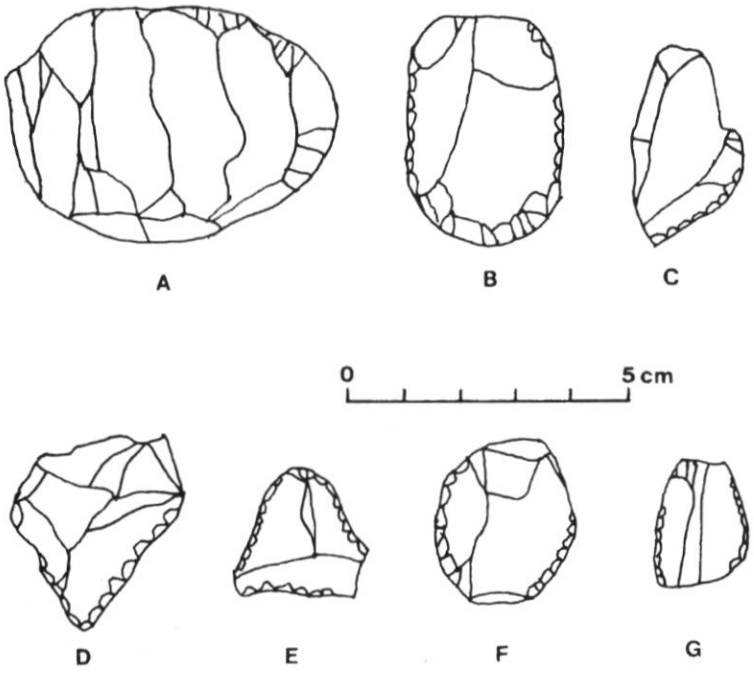


Figure 1. Excavation Layout



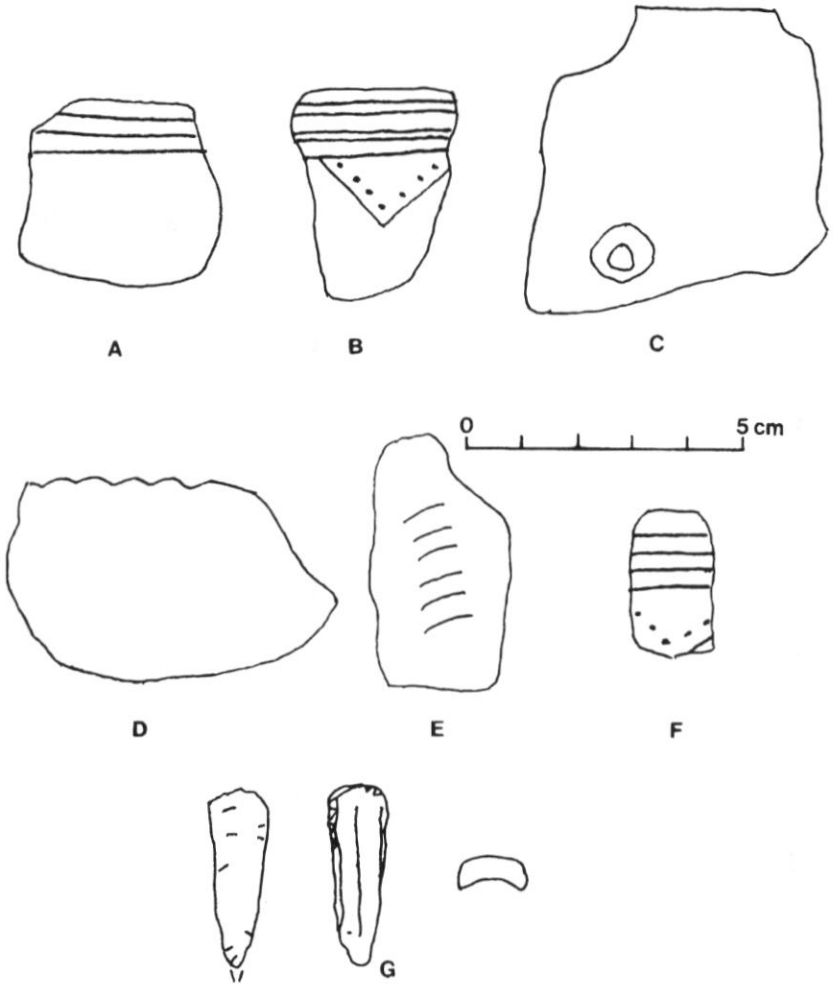
A,B – Scallorn; C,D,E – Perdiz; F – unclassified aro w point,
G,H – dart point fragments; I,J – Kent; K – preform

Figure 2. Projectile Points



A – core; B to G – scrapers

Figure 3. Lithic Artifacts



A,B,D,E,F – incised sherds; C – sherd with lace hole;
G – 3 views of bone tool

Figure 4. Potsherds and Bone Tool

A Paleo-Indian Point from Bolivar Peninsula

Richard L. Gregg and Christopher Simpson

On his birthday in 1993, Christopher Simpson of Houston, Texas, found a projectile point on the beach on the south side of Bolivar Peninsula in Galveston County, Texas. This point is shown in Figure 1.

The point has an overall lanceolate form, with a broad rectangular stem, very small shoulders, and slightly concave base. The flaking is irregular. The entire blade edge is somewhat smooth, as are the flake scar edges on both sides, apparently due to erosion in the shoreline environment. However, the stem edges and base are noticeably smoother, an indication of purposeful stem edge/base smoothing.

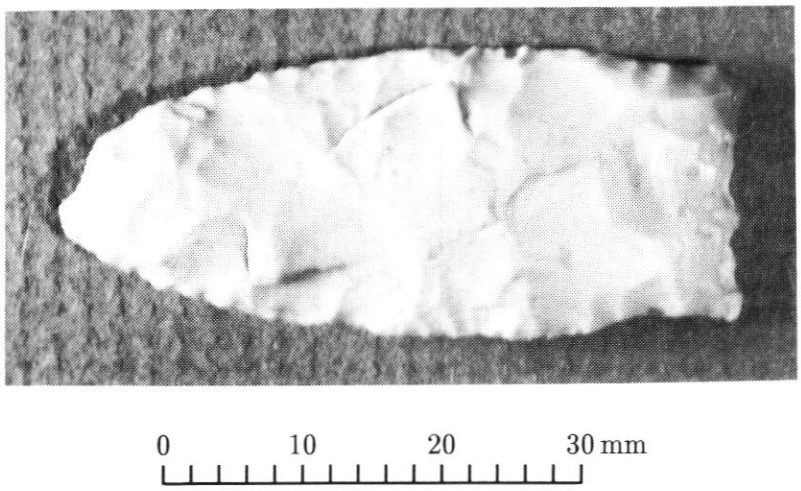


Figure 1. Point from Bolivar Peninsula

Selected metrics for the point are given below. It has what appears to be a patina that is several millimeters thick. The interior color, visible only via the fresh break on the tip, is decidedly different from that of the surface.

max thickness	7.1 mm	weight	9.0 gm
max length	48.7 mm		
max blade width	21.0 mm	color	
base width	18.2 mm	exterior	10 YR 6/6 (brownish yellow)
haft length	8.4 mm	interior	10 YR 4/4 (dark yellowish brown)

The point most closely resembles a Scottsbluff type of dart point, especially in stem and blade shape, and has the required stem edge/base smoothing (Turner and Hester 1993). However, a number of traits, such as the irregular flaking, small size, and concave base are minor or unusual for Scottsbluff (Suhm and Jelks 1962). Thus we choose to assign it as Scottsbluff-like.

Prewitt (1981: Figure 4; 1983: Figure 5) places Scottsbluff in the Circleville Phase at 8500–6800 B.P. in Central Texas, whereas Turner and Hester (1993:183) place it in the interval 7120–6650 B.C. (9070–8600 B.P.). In any case, Scottsbluff is a point of the Late Paleo-Indian period, which lasted approximately from 10,000 to 7000 B.P.

The Scottsbluff point occurs in a large, roughly triangular region delimited by South Texas, south-central Ontario, and west-central Alberta (Justice 1987: Map 16). Although found throughout much of Texas, it is most common in the northeast part of the state (Story 1990:209). Scottsbluff points are not common in Southeast Texas; the 1995 update of Patterson's data base (1994) shows only 20 specimens in Southeast Texas, 3 in the western part of the region, 4 in the central part, and 13 in the eastern part (none on Bolivar Peninsula).

Other Paleo-Indian points reported as found on Bolivar Peninsula include at least two Clovis points (Huebner 1988; Turner and Tanner 1994:319-20), and a Meserve point (Long 1977:12). Turner and Tanner (1994:319) state that artifacts similar to the types found at McFaddin Beach "have also been collected on the south side of Bolivar Peninsula, although they are not as numerous."

McFaddin Beach is just east of Bolivar Peninsula, stretching eastward about 25 kilometers from the Galveston-Jefferson County line. Over 2000 projectile points have been found there. Most are Archaic points, but Paleo-Indian points are also numerous, including more than 70 Clovis points (Long 1977; Aten 1983:152; Turner and Tanner 1994; Meltzer and Bever 1995). Long (1977:10-11) identifies 8 Scottsbluff points from McFaddin Beach, and Turner and Tanner (1994:328) discuss a collection of about 300 points that contains 12 Scottsbluff points.

According to Pearson et al. (1986:4), the points on McFaddin Beach, as well as faunal material also found there, apparently come from "several eroding late Pleistocene and early Holocene deposits which are exposed immediately offshore" (see also Aten 1983:152; Turner and Tanner 1994). For Bolivar Peninsula, source location is more enigmatic, because of much lower artifact concentration and somewhat different geological setting, particularly deeper or absent Paleo-Indian period geologic strata. It seems plausible that the Bolivar Peninsula artifacts may also have come from the McFaddin Beach area, transported westward by longshore and especially storm currents.

In considering source locations, one must keep in mind that the shoreline was as much as 70 kilometers farther south in Paleo-Indian times and that the extended Sabine River turned southwest and ran approximately parallel to and about 40 kilometers southeast of the current shoreline in this area, and then connected with the southwardly extended Trinity River. Pearson et al. (1986) and Pearson (1988) give strong evidence that archeological material can still be found in situ along the edges of this ancient Sabine channel.

Documentation on this point is being sent to the Texas Archeological Research Laboratory (TARL). Documentation and reporting of surface finds plays a vital role in increasing the archeological knowledge of this area.

Acknowledgement: We wish to thank Leland Patterson for several helpful suggestions.

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Prehistoric Earth Ovens in Southeast Texas

Leland W. Patterson

Introduction

The earth oven has long been recognized as a method of prehistoric cooking (Driver and Massey 1957:233). This cooking technique was widely distributed in North America and Mesoamerica (Driver and Massey 1957: Map 45), and used for processing both plant and animal foods. While earth ovens may vary in construction details, the basic idea is to cook various foods using heating elements (stone or clayballs) that retain heat for long periods, with earth covering the oven to further retain heat. Black et al. (1995:7) have noted that many of the clusters of burned and cracked rocks typically termed "hearths" may be more accurately characterized as "rock ovens."

There seem to be two basic configurations for an earth oven. In one case, heating elements are heated on a wood fire, with food to be cooked then placed on the heating elements (often with a protective covering of leaves), with a covering of earth then added. In the other case, a second layer of heating elements is placed on the food to be cooked before adding the earth covering. Hudgins (1993) has experimentally demonstrated that a single layer of heated clayballs is sufficient to cook a small animal, such as a chicken or rabbit.

This paper discusses prehistoric earth ovens in Southeast Texas. Several materials were used for heating elements, and a variety of food types may have been processed with this cooking technique.

Types of heating elements

A variety of materials were used for heating elements in prehistoric earth ovens. In Texas and farther west, the use of limestone for heating elements is well known from the wide distribution of burned rock middens (Hester 1991). Chert is not a good material for this purpose, because chert tends to disintegrate and explosively fragment when rapidly heated to a high temperature. Morse and Morse (1983:125) note the use of limestone, sandstone, and clayballs for heating elements of earth ovens in the middle Mississippi Valley. The best known use of clayballs for cooking is the elaborately formed "Poverty Point Object" (Webb 1982) in the Late Archaic of Louisiana and Mississippi. Driver and Massey (1957: Map 45) seem to have only considered earth ovens with rock heating elements. It can be noted that they show little use of earth ovens in the southeastern U.S., where later data have established the use of clayballs for earth ovens.

In Southeast Texas, four types of materials have now been identified for use as heating elements for earth ovens. The best known material for this purpose is the fired clayball (Patterson 1989). A list of published sites in this region that have clayballs is shown in Table 1, with quantities of clayballs per site varying from a few to many thousands. Clayballs were used most commonly in rock-poor areas. Lumps of caliche (a carbonate mineral) are often found mixed with concentrations of clayballs at sites in Southeast Texas. Natural concentrations of caliche occur at some locations in this region. Use of caliche for heating elements in earth ovens is equivalent to the use of limestone (another carbonate mineral) in other parts of Texas. There is an area at site 41HR206 in Harris County where caliche appears to have been used for an earth oven without clayballs (Patterson 1980a). Caliche and sandstone are found mixed in some hearth areas of the Allens Creek sites in Austin County (Hall 1981:281).

There are some outcrops of sandstone in the western part of Southeast Texas. At Wharton County site 41WH50 (Patterson and Hudgins 1988) and Austin County sites 41AU36,37,38 (Hall 1981), sandstone was found in hearth areas that probably represent earth ovens. In Wharton

County, unusual concentrations of iron concretions at sites 41WH38 (Patterson, Hudgins, Kindall, et al. 1994) and 41WH72 (Patterson et al. 1995) may indicate use of this material for heating elements in earth ovens.

Table 1. Clayballs at Sites in Southeast Texas

site	county	no. of clayballs
41AU1	Austin	1
41FB32	Fort Bend	100
41FB34	Fort Bend	688
41FB37	Fort Bend	100
41FB42	Fort Bend	15040
41FB43	Fort Bend	24
41FB95	Fort Bend	100
41FB223	Fort Bend	28842
41HR6	Harris	21
41HR89	Harris	50
41HR139	Harris	10
41HR184	Harris	572
41HR185	Harris	140
41HR206	Harris	113
41HR208	Harris	1
41HR210	Harris	8
41HR214	Harris	1
41HR215	Harris	5
41HR223	Harris	108
41HR226	Harris	10
41HR244	Harris	29
41HR246	Harris	3
41HR267	Harris	3
41HR273	Harris	5
41HR279	Harris	2
41HR315	Harris	1144
41LB2	Liberty	11000
41MQ6	Montgomery	not counted
41SJ16	San Jacinto	15
41SJ160	San Jacinto	16
41WH19	Wharton	4443
41WH20	Wharton	157
41WH25	Wharton	9
41WH36	Wharton	484
41WH50	Wharton	100
41WH72	Wharton	1145
41WH73	Wharton	4661
41WL15	Waller	20

Use of earth ovens

Prehistoric earth ovens were used in North America to process a variety of plant and animal foods (Driver and Massey 1957:Map 45). Black et al. (1995:9) note that rock ovens in Central Texas may have been reused in different seasons for different foods. Heat treatment of chert is another possible use for earth ovens. Because of poor preservation of floral and faunal remains, it is difficult to determine the type of food that may have been cooked in earth ovens in Southeast Texas. At site 41WH19 in Wharton County, a deer jaw was found on a large concentration of clayballs (Patterson et al. 1987:11). At site 41HR206 in Harris County, a turtle was apparently cooked in an earth oven with clayballs (Patterson 1994).

Because only about 18% of sites in inland Southeast Texas have fired clayballs, it has been proposed that at many sites clayballs may have been used seasonally to process certain plant foods (Patterson 1989). Fired clayballs do not occur at shell midden sites on the coastal margin of Southeast Texas. The large number of clayballs at site 41FB223 (Patterson, Hudgins, McClure, et al. 1994) in Fort Bend County is suggestive of specialized food processing. There were 28,842 clayballs recovered at this site in excavations, and the total site probably contains several hundred thousand clayballs. The low proportion of sites in Southeast Texas that have clayballs indicates that the earth oven was not the predominant cooking method, even though clayballs have a wide temporal and geographic distribution in this region. At some sites, if clayballs were being used in earth ovens for specialized plant food processing, clayballs may have also been used incidentally for cooking meat.

Chronology of fired clayballs

Fired clayballs were used over a very long time period in Southeast Texas, from the Late Paleo-Indian (8000-5000 B.C.) through Proto-Historic (A.D. 1500-1700) time periods. At site 41WH19 in Wharton County, the use of clayballs is bracketed by radiocarbon dates of 7970 $\pm$ 530 B.C. and A.D. 1585 $\pm$ 80 (Patterson et al. 1987). At site 41HR315 in Harris County, clayballs occur at all excavation levels, from the Late Paleo-Indian through the Late Prehistoric periods (Patterson 1980b:Table 5). There is a radiocarbon date of A.D. 1670 $\pm$ 80 associated with a clayball feature at site 41HR206 in Harris County (Patterson 1994). Fired clayballs were used for about 10,000 years in Southeast Texas, with a hunting and gathering lifestyle in all time periods. This is both the earliest and latest use of clayballs that I can find for North America. Clayball use seems to start in Louisiana before 3000 B.C. (Saunders and Allen 1994:485) in the Archaic period and end about A.D. 400 in the terminal Marksville period (Morse and Morse 1983:177) in Louisiana and farther north along the Mississippi Valley.

Summary

Available data indicate that the earth oven was in use in Southeast Texas for at least 10,000 years. The most common material used for heating elements was the fired clayball, mainly because other suitable materials were more difficult to find. The use of the earth oven has wide temporal and spatial distributions in North America and Mesoamerica. The details of the earliest development of this type of technology are not clear. Even though fired clayballs are dated very early in Southeast Texas, no claim is being made here that the earth oven was invented in this region. The long use of clayballs in Southeast Texas may be an indication of the conservative nature of hunter-gatherers, or that there was a continuing need for this type of technology for specialized food processing. Data

on the earth oven in this region have accumulated fairly rapidly in the last 30 years. Perhaps future research will give an even clearer picture of this subject.

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Book Review

Exploring Ancient Native America: An Archaeological Guide. By David Hurst Thomas. Published by MacMillan, 15 Columbus Circle, New York, NY 10023; 1994. xxii, 314 pp. Index, color and black-and-white plates, maps, charts. Hardback, $25.00.

David Hurst Thomas, the author of *Exploring Ancient Native America: An Archaeological Guide*, is both a practicing "dirt archeologist" and a curator at the American Museum of Natural History in New York City. His early field work at the sites at Gatecliff Shelter in Nevada and Mission Santa Catalina de Guale in the Sea Islands off Georgia is well known. He is also well known to thousands of archeology students as the author of *Archaeology* and *Archaeology: Down to Earth*, two highly readable introductory textbooks. Thomas is also the author or editor of many other books and professional papers. He has been highly quoted by other professional archeologists as well as featured in the popular press.

Dr. Thomas's current publication is not another textbook. It is, as he states it, "a personally guided tour through the first thousand generations of American history." He explains that he has traveled over 250,000 miles while visiting hundreds of roadside displays, museums, on-site displays, and rock art locations. Many of these are the most important places of Native American past. What sets this book apart is the way in which Thomas has explained the archeological story of the North American Indians "in terms of places and artifacts you can see for yourself."

Thomas employs a chronological format, beginning with the generally accepted view of a Bering Strait crossing of people from Asia into North America about 12,000 years ago. Readers who might believe in an earlier human habitation of this continent will be disappointed, for Thomas adheres to the view held by the majority of professional archeologists that there is no legitimate evidence supporting a presence earlier than Paleo-Indian. He devotes six pages to explaining his reasoning, using as a case in point the Calico Site in southern California, made famous by the renowned Louis Leakey in 1963. Where Leakey and the other supporters of Calico see artifacts in the form of rock tools, Thomas and most of the archeological community see geofacts. Thomas also finds that the 200,000-year-old date ascribed to the site by its promoters is much too early for human habitation in America. With these reservations in mind, Thomas gives directions to the site and invites readers to visit and decide for themselves. Also prominently mentioned in this chapter on the First Americans is the Lubbock Lake State and National Landmark, a Clovis and Folsom site well remembered by Houston Archeological Society members who attended the 1993 Texas Archeological Society field school at Lubbock.

Thomas continues his archeological tour through time and space, giving an overview of nearly 400 archeologically important places dating from Paleo times through the Archaic and succeeding cultures down to the living Native Americans. Thomas has scattered throughout this presentation commentaries that he calls *sidebars*, to allow Native Americans to speak on such varied topics as their origin beliefs and Custer's defeat at the Little Bighorn. It is interesting to note that the author is donating some of the royalties from book sales to the Native American Scholarship Fund of the Society for American Archaeology in order to foster greater cooperation between the archeological community and the descendants of the ancient Native Americans.

For the reader whose vacation would include archeological points of interest, Thomas has included an appendix listing the sites and museums by state. Also listed are telephone numbers and directions for finding each place of interest. Sites in this appendix are as varied as the Nanih Waiya Historical Site in Mississippi, the ancestral home of the Choctaw people, and the Casa Grande Ruins National Monument in Arizona.

Accompanying the text are over 100 maps, drawings, and photographs illustrating the locations and artifacts of the sites and cultures mentioned. Many of the photographs are from the collections of the American Museum, some of which have never been published before.

The influence of David Hurst Thomas on the field of American archeology is extensive and, while most of his writings are for the professional, this new book is aimed at the general public. While this book is not a comprehensive catalog of ancient American history or archeology, it is the only one of its kind, appealing especially to highly motivated people interested in the archeology of America, including many avocational archeologists.

Robert T. Shelby