



JOURNAL HOUSTON ARCHEOLOGICAL SOCIETY

Number 97

August 1990



Galveston Island Aboriginal

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ISSN-8756-8071

Excavations at the J. D. Wells Site (41HR639), Harris Co., Texas

Leland W. Patterson

Introduction

This paper describes results of excavations by the Houston Archeological Society at the J. D. Wells site, 41HR639, in eastern Harris County, Texas. This site was identified for potential field work by HAS member J. D. Wells. Mr. Wells then arranged for access to this site by the HAS. Work was made possible through the courtesy of the landowner, David Rogers.

Individuals who participated in field work for this project included Karen Acker, Dave Atherton, C. R. Ebersole, Dick Gregg, Joe Hudgins, Sheldon Kindall, Linda Moorrees, Mike Marshall, Lee Patterson, Howard Scott, Jerry Sadler, William Schurmann, Lavon Vaughn and J. D. Wells. Also, Fr. Edward Bader brought a class from St. Thomas University to participate in one of the field sessions. Field work was directed by Sheldon Kindall and laboratory work to clean and sort materials recovered was directed by C. R. Ebersole.

Site 41HR639 is located in a wooded area on a pimple mound near the west bank of Cedar Bayou, about 12 miles inland from the coast line of Galveston Bay at Baytown, Texas. Materials recovered from excavations at this site are typical of coastal margin sites in Southeast Texas. This is a multicomponent site with artifacts representing the Early Ceramic (A.D. 100 to 600) and Late Prehistoric (A.D. 600 to 1500) time periods. The bulk of materials recovered consisted of ceramics, Rangia shell and animal bones, with only a few lithic items.

Occupations at this site were probably for fairly short time periods, mainly during warmer months, but at least occasionally during the fall season. Sites of this type are important for defining the seasonal rounds of Indians of the coastal margin of Southeast Texas.

Site 41HR639 is located on a pimple mound that has a diameter of 11.8 meters and a height of 39 centimeters. Pimple mounds are rather common on the Gulf Coastal Plain, and some pimple mounds contain cultural remains (Aten and Bollich 1981). The geological processes involved in pimple mound formation are not well defined and may be varied. In the case of this site, the pimple mound formation process seems to be associated with the high volume of cultural remains, such as Rangia shell, bone and pottery that accumulated on fairly flat land.

Excavation details

A layout of the excavations is shown in Figure 1. Pits A to D are 1 meter square. Pit E is 0.75 square meters in area and is located adjacent to the southwest corner of Pit A. Pit E was made to recover a high concentration of cultural materials observed in the south wall of Pit A. All pits were made to depths where culturally sterile soil was encountered. Pit C had a depth of 25 cm, Pits A and E had depths of 35 cm, Pit D had a depth of 40 cm and Pit B had a depth of 45 cm. Excavations were made in 5-cm levels and all soil was put through 1/4-inch mesh screens.

Ceramics

Potsherds were found at all excavation levels as summarized in Table 1. In general, the ceramic type sequence follows that given by Aten (1983: Figure 14.1) for the Galveston Bay area. Goose Creek sandy paste pottery was found at all excavation depths. San Jacinto grog-tempered pottery was found at excavation depths of 0–15 cm. Tchefuncte contorted paste pottery was found at

excavation depths of 20–30 cm, and Conway coarse sand tempered pottery was found at excavation depths of 20–35 cm. Based on this ceramic type sequence and a dart point found in the 20–25 cm stratum, it is judged that depths of 0–20 cm represent the Late Prehistoric time period and depths below 20 cm represent the Early Ceramic period. No preceramic component is present. Analysis of pottery type was done using a fresh break on each sherd.

A total of 608 sherds of sizes over 15 mm square were recovered, with 183 of these in Early Ceramic period strata. This may indicate more intensive use of this site in the Late Prehistoric period. Thirty specimens were rim sherds and three specimens had lace holes. Four Goose Creek Plain specimens found at depths of 0–25 cm had lightly notched rims. Pottery at this site included conical and cylindrical vessel forms. Some specimens from 25 to 35 cm in Pit E represent a single cylindrical vessel with a diameter of 17 cm. The cylindrical vessel form started in the Early Ceramic time period. Four Goose Creek Plain specimens have brushed surfaces. Colors of sherd interiors are highly variable, from black to light tan. This seems to reflect differences in firing conditions and types of clay.

Incised patterns were found on 16 specimens (2.6%) of the sherd collection. The range of patterns is shown in Figure 2. Most incised sherds had parallel horizontal lines. Only 1 San Jacinto Incised specimen (Pit E, 0–5 cm) was found, with a converging line pattern (Figure 2J). One Goose Creek Interior Incised sherd was found (Pit C, 10–15 cm), with a crosshatched pattern (Figure 2G). Most of the incised pottery was found at excavation depths representing the Late Prehistoric.

Lithic materials

The small amount of lithic materials found at this site is typical of sites on the coastal margin of Southeast Texas. A bifacial perforator (Figure 2A) was found in Pit C, 0–10 cm. This specimen is made of petrified wood and is similar to the Catahoula perforator type (Patterson 1987). A Gary dart point (Figure 2B) made of heat-treated chert was found in Pit A, 20–25 cm. This specimen represents the Early Ceramic period. Aten (1983:306) has noted that dart points are not found on the coastal margin of Southeast Texas after A.D. 600, but continue to be found later in the Late Prehistoric period in adjacent inland areas.

A large point that may be a bifacial knife (Figure 2C) was found in Pit C, 5–10 cm. This specimen has no edge wear pattern representing the cutting function, but still is probably a knife since use of dart points had stopped during the Late Prehistoric period represented by this excavation level. It is not a typical artifact type for this area, and is probably a trade item. Lithic raw material of a size large enough to make this large biface can be found about 100 miles west of this site. This specimen was imported in finished form because there are no lithic flakes present that would indicate manufacture of this specimen at this site. A large chert knife would have been a highly prized item in this lithic-poor area.

Little lithic manufacturing was done at site 41HR639. This is typical for coastal margin sites in this region. As shown in Table 2, only 16 small flakes were recovered, at excavation depths of 0–30 cm. Aten (1983:262) has noted that usually only small flakes are found at coastal margin sites. These flakes may represent mainly maintenance of stone tools, rather than primary manufacturing. The Gary point found here is also probably a trade item from farther inland. A polished petrified-wood pebble, found in Pit B, 5–10 cm, may have been used as a pottery-smoothing tool.

Faunal materials

While this site is located somewhat inland on Cedar Bayou, tidal flow from the Gulf permitted *Rangia cuneata* brackish water shellfish to exist in this immediate area. Indians utilized *Rangia* as a

food source at this site, but not in the large quantities found at large shell midden sites nearer to the coastline. A summary of *Rangia* shell recovered is given in Table 3. Two freshwater mussel shells that were found may indicate lower water salinity at this location during times of high rainfall. This location is probably near the inland limit where salinity of the bayou is high enough to be a suitable environment for the existence of *Rangia*.

A summary of bone materials recovered is shown in Table 4. This collection will be analyzed in detail by W. L. McClure. Some of the more obvious animals represented include deer, turtle and alligator.

Five oyster shells were found at levels of 15–20, 20–25, 25–30, 30–35 and 40–45 cm. All of these specimens may have been used as cutting and/or scraping tools, as indicated by edge wear. Oyster shells appear to have been imported from the nearby coast for tool use because no lithic materials were locally available. An oyster shell tool from Pit A, 20–25 cm, is shown in Figure 2E. Three bone awls were found at levels of 10–15, 15–20 and 25–30 cm, with 2 specimens illustrated in Figure 2.

Seasonality studies

The season of *Rangia* utilization at this site was analyzed using the basic method given by Aten (1981) and a computer program for data fit by Carlson (1987). Samples were analyzed where right- or left-hand shells were available in quantities greater than 30. A summary is given in Table 5 of the most probable months of *Rangia* utilization. All indications are for warm weather months from May through August, similar to previous conclusions by Aten (1983:158) and Dillehay (1975:160) for shell midden sites on the coastal margin of this region.

Fully hardened pieces of antler, found in the deeper excavation levels, indicate additional use of this site during the fall months. Deer in this area would have had mature antlers from September through January. Antler loss occurs in January, and fully developed antlers are then in existence by the next fall. Two basal pieces of antler (Pit A, 30–35; Pit E, 25–30) appear to have been connected to the same deer skull when deposited; thus this represents a hunting kill. Other antler pieces were found in Pit B, 25–30 cm, and Pit D, 35–40 cm.

Baked clay material

Small amounts of burned clay lumps that were recovered are probably remains of fire hearths, as summarized in Table 6. The clay lumps have rough surfaces and are generally under 25 cm in diameter. There are no specimens with smooth, rounded surfaces or large diameters such as have been associated with purposefully made clayballs at other sites in this region (Patterson 1986, 1989).

Conclusions

Site 41HR639 is a small site with an occupation sequence in the Early Ceramic and Late Prehistoric time periods. Materials recovered here from excavations are typical of coastal margin sites during the time periods represented, with high concentrations of bone, *Rangia* shell and potsherds, but a low quantity of lithic materials. Data from site 41HR639 are important as an indication of seasonal activities of Indians at a location slightly inland from the more prominent large shell midden sites. There are data to indicate that this site was utilized at various times during spring, summer and fall seasons, possibly on a short-term basis. Data from this site may

show more movement of Indians on the coastal margin during summer months than is usually assumed for models of seasonal subsistence patterns in this area.

There are two examples at this site of trade with Indians from farther inland, a Gary dart point from the Early Ceramic period and a large bifacial chert knife from the Late Prehistoric period. Neither of these specimens were manufactured at this site.

Bone and shell tools were important at this location because of lack of local lithic raw materials. The fairly large bone collection from site 41HR639 should yield significant data on the faunal subsistence pattern of this area.

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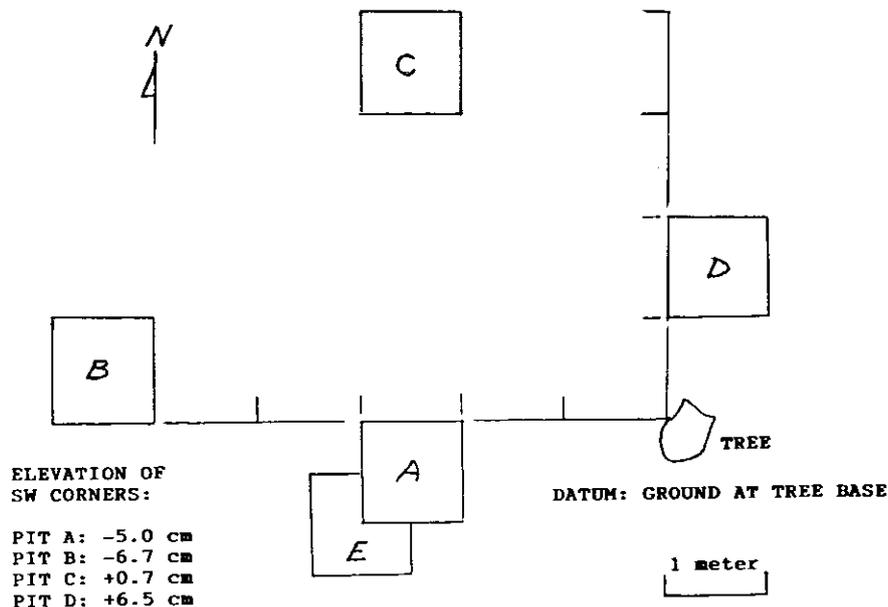
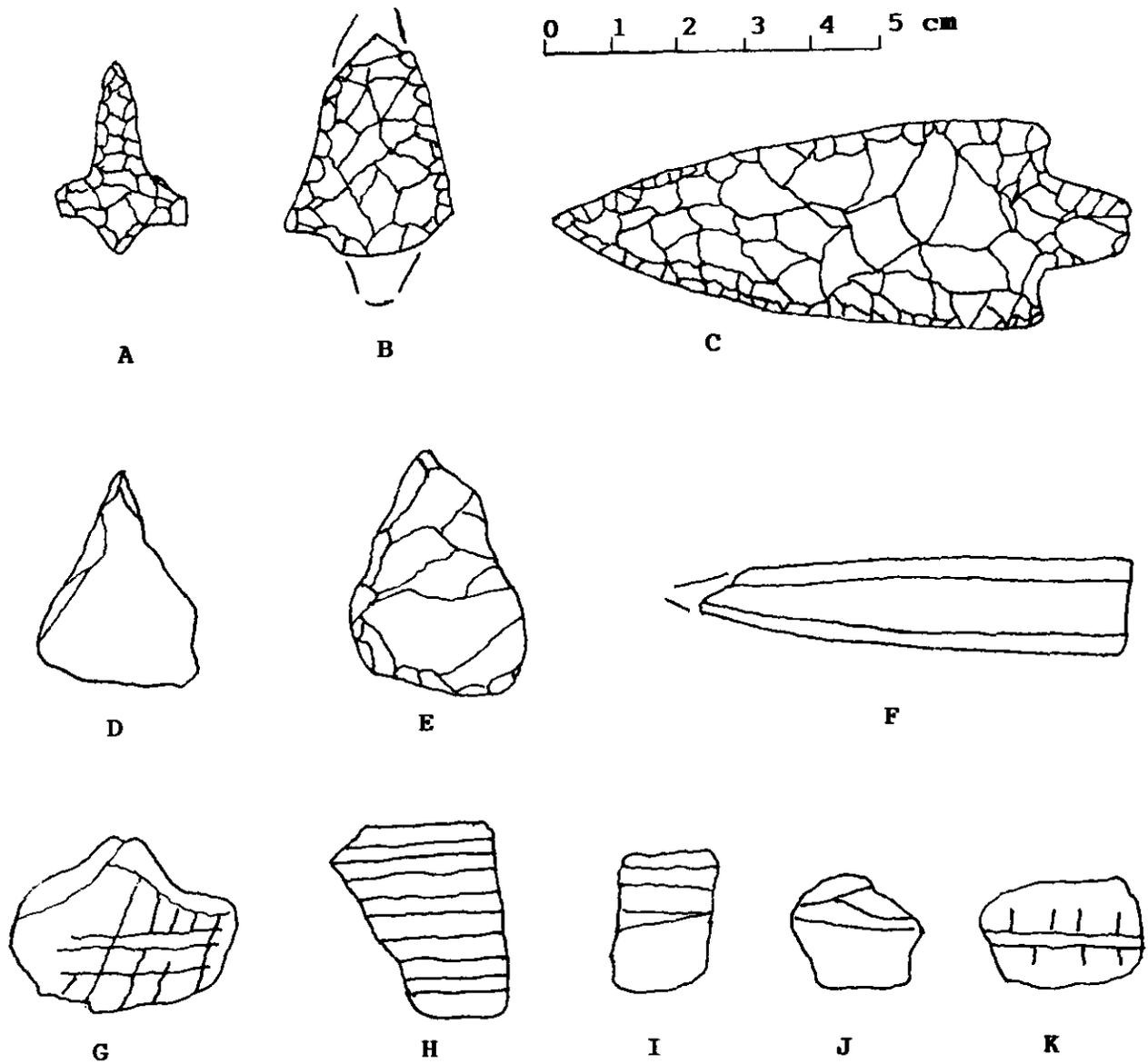


Figure 1. J. D. Wells site excavation layout



A - bifacial perforator; B - Gary point; C - bifacial knife; D,F - bone tools;
 E - oyster shell tool; G - interior incised sherd; H to K - exterior incised sherds

Figure 2. J. D. Wells site artifacts

Table 1. Summary of Potsherds

level,cm	Goose Creek		San Jacinto		Tchefuncte	Conway
	Plain	Incised	Plain	Incised		
0-5	38	2	4	1	0	0
5-10	116	4	5	0	0	0
10-15	145	6	1	0	0	0
15-20	102	1	0	0	0	0
20-25	66	2	0	0	2	1
25-30	67	0	0	0	4	2
30-35	33	0	0	0	0	1
35-40	3	0	0	0	0	0
40-45	2	0	0	0	0	0
total	572	15	10	1	6	4

Table 2. Summary of Lithic Flakes

pit	level	no. of flakes	material
E	5-10	1	petrified wood
B	5-10	2	1 chert, 1 petrified wood
C	0-10	1	chert
E	10-15	6	5 chert, 1 petrified wood
A	10-15	2	1 chert, 1 petrified wood
B	10-15	1	petrified wood
C	15-20	1	chert
A	25-30	1	petrified wood

Table 3. Summary of Rangia Shell
(weight in grams)

level,cm	Pit				
	A	B	C	D	E
0-5	616	13	(A)	44	123
5-10	503	19	416(A)	100	263
10-15	900	198	588	988	472
15-20	1230	560	946	752	654
20-25	1106	726	248	776	1536
25-30	1314	2620		641	1847
30-35	861	447		557	727
35-40		946		415	
40-45		447			

A - 0 to 10 cm

Table 4. Summary of Bone
(weight in grams)

level,cm	A	B	Pit		
			C	D	E
0-5	82	8	(A)	7	28
5-10	102	9	109(A)	16	74
10-15	220	19	202	140	285
15-20	192	10	118	121	158
20-25	246	31	10	85	423
25-30	153	21		48	457
30-35	55	6		31	176
35-40		21		4	
40-45		5			

A - 0 to 10 cm

Table 5. Summary of Rangia Seasonality Analyses
(most probable month of Rangia harvest)

level,cm	A	B	Pit		
			C	D	E
10-15	July			June	
15-20	July		June	August	July
20-25	May			June	July
25-30	June	June			July
30-35	July				
35-40		June			

Table 6. Summary of Baked Clay Lumps
(weight in grams)

level,cm	A	B	Pit		
			C	D	E
0-5	30	0	(A)	1	1
5-10	5	8	41(A)	20	0
10-15	131	5	164	125	2
15-20	60	4	172	110	27
20-25	85	27	42	181	11
25-30	82	12		90	20
30-35	108	6		57	74
35-40		12		27	
40-45		3			

A - 0 to 10 cm

Facial Reconstruction of A Galveston Island Aboriginal: Circa 1500

Joan Few, Betty Pat. Gatliff, Rebecca Storey

Abstract

In October 1988 Betty Pat. Gatliff, using the original skull, reconstructed in clay the face of a female aboriginal from archeological site 41GV5. Facial reconstruction is a process by which a sculptor trained in tissue morphology, working directly on a skull, translates tissue depths of bony landmarks into a three-dimensional portrait. The end product is not an artistic work but is a collaboration between an anthropologist, who examines the skull prior to reconstruction, and a sculptor, who reflects the individual anatomical features of the individual skull based on the underlying cranial architecture. The clay sculpture was cast in bronze and the clay was removed without damage to the skull. The bronze is on display at the museum of the Harris County Heritage Society, a respectful alternative to the display of human skeletal remains.

Background

KPRC-TV, Channel 2, the Houston Archeological Society, the Harris County Heritage Society, and the Houston Museum of Natural Science worked together to bring about the facial reconstruction on the skull of a female Indian who lived approximately A.D. 1500, and was buried on Galveston Island. The reconstruction was done by Betty Pat. Gatliff at the Harris County Heritage Society Museum during the Houston Archeological Society Exhibit, "Houston Archeology: Our Heritage Underground." Betty Pat. Gatliff "is a pioneer in the field of restoring physical appearance of skeletal materials" (McGregor 1985). Using skulls and casts, she has completed over 149 facial restorations in the past 24 years. Her facial reconstruction of Francisco Pizarro won a first-place award in three-dimensional media at the annual meeting of the Association of Medical Illustrators in 1988. Her outstanding facial reconstructions on three aboriginal Pecos River skulls at the Witte Museum in San Antonio promoted a Houston Archeological Society interest in this project.

Skull selection

To determine which aboriginal skull from the Texas Gulf Coast should be used by Betty Pat. Gatliff, three criteria were used: 1) a complete skull with mandible, 2) skull strength and durability, and 3) authenticity and documentation of the burial and its location. The skull from burial I, site 41GV5, met these criteria.

Site description

The skull from burial I (41GV5) was excavated in 1962 by members of the Houston Archeological Society under the direction of Dr. T. E. Pulley, Director of the Houston Museum of Natural Science. This site, an aboriginal burial ground, was exposed during development by the Jamaica Beach Corporation on their property on West Galveston Island. Nineteen individuals were found. Photographs of the 41GV5 excavations, housed at the Houston Museum of Natural Science, document this skull as Burial I (alphabetical letter I).

Skull analysis

The skull is of a female, 18-20 years of age. The third molars are erupted and these molars do not show evidence of much wear. The basular suture is not closed, an event which usually occurs by the age of 20 or 21. A gracile individual, her features would have been quite delicate. Muscle stress evident in a well-developed neck muscle attachment area on the skull could have been due to the use of the head and teeth as a vise for gripping. Her teeth are very worn for a person of this young age and is probably due to a gritty diet. The back of the skull is slightly flattened (possibly from being strapped to a board during infancy), but there is no evidence that the flattening was deliberate. The jaw of this individual sticks out, slightly prognathic, and the nose was fairly large. There is a break on the left side of the skull which is old and may possibly have been the cause of death; however, no clear impact marks are evident. There is no evidence of abnormal pathologies. There is evidence of anemia during childhood, though the individual recovered and the anemia was not particularly severe. Given the age and evident health of the individual, complications in childbirth is not an unreasonable supposition as the cause of death.

Reconstruction process

Each individual skull dictates the location, size, and shape of all of the features — mouth, eyes, nose and ears. A physical anthropologist examines the skull prior to reconstruction to determine the individual's sex and race. Depths of the soft tissue of the face are different in males and females of the three major racial groups. An estimate of the individual's age at death, as well as individual anatomical peculiarities, diseases, and injuries, influence the facial features of the person during life and must be considered during reconstruction. The shape of the face is based on tissue thickness. Skin depth measurements from 28 individuals were first used by W. His in 1895 (His 1895). In 1898, J. Kollmann and W. Buchly (1898) added additional measurements of 53 individuals. Skin depth measurements and comparative studies by Krogman (1962), Rhine and Campbell (1980), and Rhine and Moore (1982: revised 1984) have resulted in data useful on current forensic cases, particularly in America. It is helpful to have the tables divided by emaciated, normal, and obese, as well as by sex and race. There is no data on tissue thicknesses for prehistoric populations. For this reconstruction, Gatliff used the tissue thickness charts compiled by Kollmann and Buchly in 1898 (Figure 1) because the diet and physical lifeways of prehistoric Indians are more comparable to those of nineteenth century Europeans than to those of twentieth century Americans.

Before reconstruction begins, the mandible is firmly attached to the cranium. Clay and cotton are used to replace cartilage. The skull is mounted on a stand, maintaining the Frankfort horizontal.

Rubber cylinders are cut according to the appropriate tissue thickness from the facial thickness tissue charts for each of the 18 facial landmarks. Tissue thickness includes the size of the muscle, fatty tissue and the skin thickness in one measurement. These cut rubber cylinder markers are attached directly onto the skull (Figure 2). The markers are connected using modeling clay, sometimes called plasteline. The open spaces are then filled in to form the shape of the face.

The mouth is formed by the shape of the front teeth. Three dimensions are used:

1. The depth, tissue marker #7 (Figure 1), the upper lip margin.
2. The vertical thickness of the lips is measured gumline to gumline on the teeth.
3. The width of the mouth is approximately the distance between two lines radiating out from the junction of the canine and first premolar on each side. Basically the lips cover the front six teeth.

The mouth barrel is bent around the teeth and the parting line of the lips is creased horizontally, along the halfway line and to each edge to mark the width (or corners) of the mouth. Chin and cheek areas are connected to the mouth barrel. Lips are spread, rounded, and striated to give a life-like appearance and texture.

The eye is a ball, which is centered within the bony orbit. In the ball of clay, the iris and pupil are carved out to give the eye expression. The apex of the cornea is approximately tangent to a centrally located line drawn between the superior and inferior margins of the orbit. The eyelids bend around the eyeballs, which give them the proper three-dimensional quality. The lower lid comes up to the bottom of the iris. The pupil seems to hang from the upper lid. There seems to be no relationship between the shape of the orbit and the shape of the individual's eyelids. It is important to construct the eyes to be anatomically correct. A pleasant appearance can be given by closing the lids just slightly and forming a little puff under the eye, just as a person appears when starting to smile. The clay should be thin in the inner corner of the eye and over the nasal bone. A fatty pad lies above and toward the outer side of the eye and smooths into the brow.

The nose is based on two simple measurements — the width and the projection. With these, the length of the nose is established without measuring. The width is computed by measuring the bony nasal aperture at its widest points and increasing the dimension by 10 mm. The projection from subnasale to pronasale is three times the length of the nasal spine, which established the tip of the nose. The tip of the nose can then be connected with the bridge and built out to the width measurement. There seems to be a possible relationship between the shape of the bridge and also the nasal spine to the shape of the tip of the nose. The wings are rounded and the nares carved out to complete the nostrils.

Unfortunately, the skull gives no clues to the individual shape of the ear. A rule of thumb is that the ear and nose are approximately the same length. Ears are constructed in four steps:

1. A "C"-shaped bit of clay is formed to be the concha, and spreads at the top for the antihelix.
2. The helix is a long thin worm-like strip, rolled and pointed at one end. Starting with the pointed end, it is curved around and fastened to the antihelix and around the concha.
3. The lobule is flattened and added to the lower portion of the ear, under the concha. The ear is positioned on the sculpture so that the external auditory meatus is located at the top of the tragus. The ear is tipped back about 15°.
4. The tragus is constructed and attached, and then smoothed into the cheek to complete the ear.

At this point the facial sculpture is finished, as far as using all of the information that the skull alone reveals (Figures 2-3). The hair style is very difficult to ascertain in prehistoric cases. A records search revealed little about the hairstyles of early Texas Gulf Coast Indian women. Based on research done for the facial reconstructions by Betty Pat. Gatliff of Shumla Cave burials, it was decided to make the hair medium length, to fall below the earlobes on the sides (Martin 1933:22). Because the wind frequently blows on Galveston Island, the hair was given a wind-blown look. Three small carved shell beads on a thin leather strap were added. These beads are replicas of ones found in a different female burial on the Texas Gulf Coast and are not associated with this burial. This may or may not reflect the actual use of shell beads during this time period. The clay reconstruction was cast in bronze and the bronze is on display at the Harris County Heritage Society. A second bronze is housed with the skull at the Houston Museum of Natural Science.

Acknowledgements

The Houston Archeological Society and the Harris County Heritage Society would like to thank KPRC-TV, Channel 2, for sponsoring the reconstruction and the bronze casting of the sculpture, and the "Eyes of Texas" for the event's coverage. We appreciate all of the assistance given by Tom Reiff, President and General Manager of KPRC-TV, Channel 2, Ron Stone, Gary James, Red Koch, and Charles Jackson, all from Channel 2.

Our thanks to Continental Airlines for contributing Ms. Gatliff's airfare and to Cynthia Stevens for her assistance with arrangements.

The Harris County Heritage Society provided space for the reconstruction as well as space for the HAS exhibit, "Houston Archeology: Our Heritage Underground." Karen McGilvery, Betty Chapman, Jan Wyatt, and Jane Ellen Cable of the Heritage Society contributed many hours to help develop these events.

The Houston Museum of Natural Science loaned the skull for this reconstruction and shared all records and site information. Elisa Phelps, Curator of Anthropology at the Museum, was a major contributor in her assistance to this project.

The Texas Archeological Research Laboratory in Austin opened their files for research and loaned the Houston Archeological Society Exhibit the shell beads used in the reconstruction.

The Houston Archeological Society, the HAS Exhibit Committee (Joan Few, Texas Anderson, Margie Elliott, and Pam Wheat), and all contributors to the HAS exhibit, "Houston Archeology: Our Heritage Underground," deserve credit for an ambitious project successfully executed for the people of Harris County. Foundation, corporate, and individual contributors are too numerous to be listed here, but their hours, donations, and support have not gone unnoticed.

The bronze was done by Doug Clark of the Art Foundry of the Gulf Coast.

The authors

Joan Few received her B.S. degree in history from Southwestern University, in Georgetown, Texas, and her M.A. in archeology/anthropology from the University of Houston. As President of the Houston Archeological Society (1986-88), she orchestrated this facial reconstruction, as well as the HAS exhibit. Ms. Few is currently an Adjunct Professor at the University of Houston - Clear Lake.

Betty Pat. Gatliff received a B.A. in Art from the Oklahoma College for Women (University of Science Arts of Oklahoma). She worked for 27 years in the U. S. Civil Service as a medical and technical illustrator. She was appointed to the Alumni Hall of Fame for the University of Science and Arts of Oklahoma in 1978. Her numerous publications on forensic processes (see, for example, Gatliff 1984, 1986; Gatliff and Snow 1979; Glassman et al. 1989) and her many awards rank her as the foremost facial reconstructionist in North America.

Rebecca Storey received her PhD in anthropology from Pennsylvania State University. Currently Assistant Professor of Anthropology at the University of Houston, she is interested in prehistoric Native Americans through the study of their skeletal remains for information on health and lifestyle.

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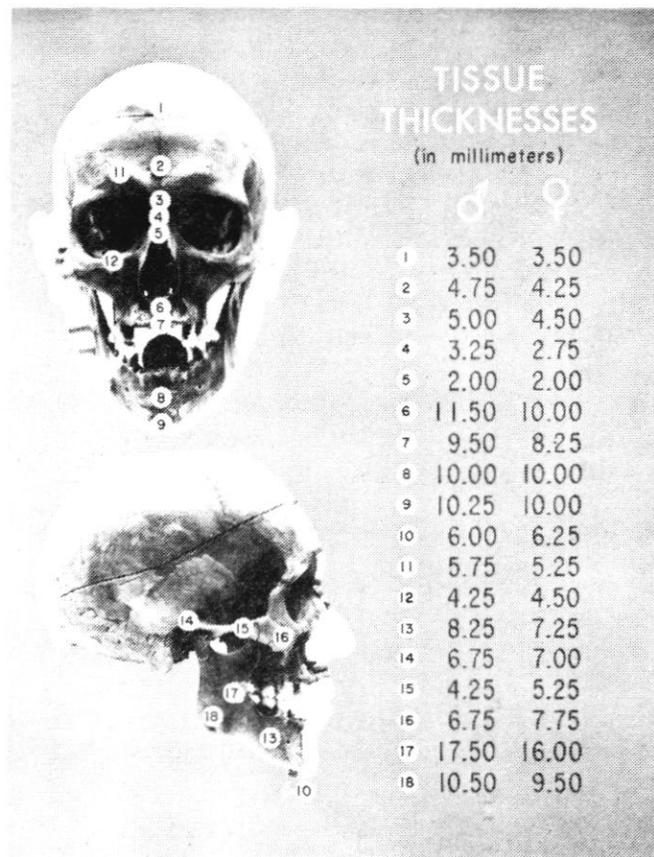


Figure 1. Tissue thickness chart

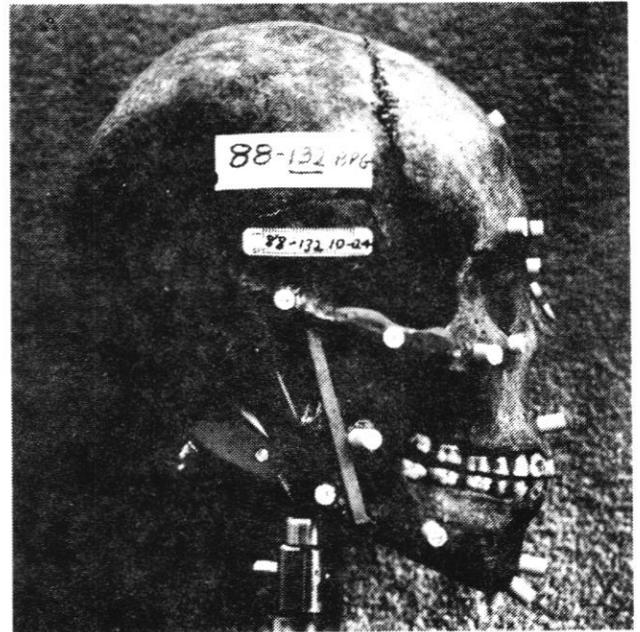
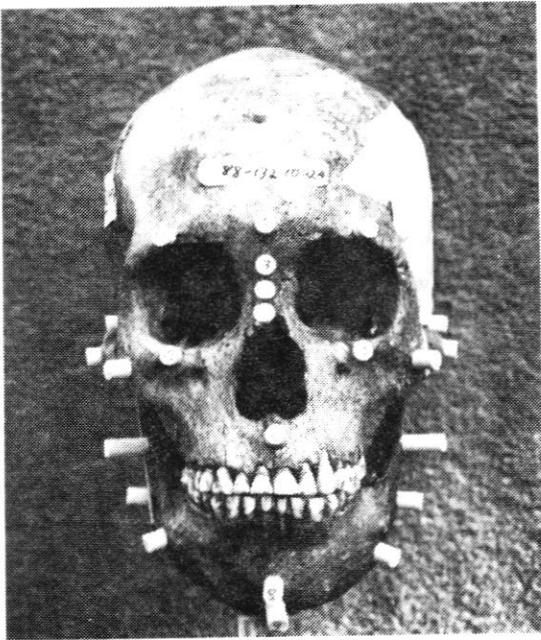


Figure 2. Skull and mandible – frontal and lateral views

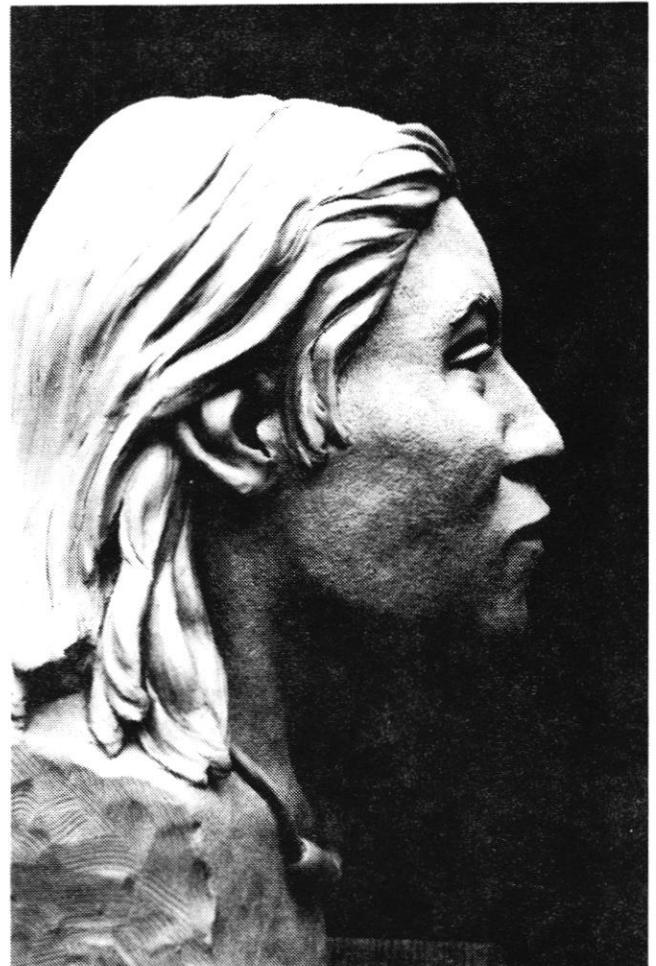
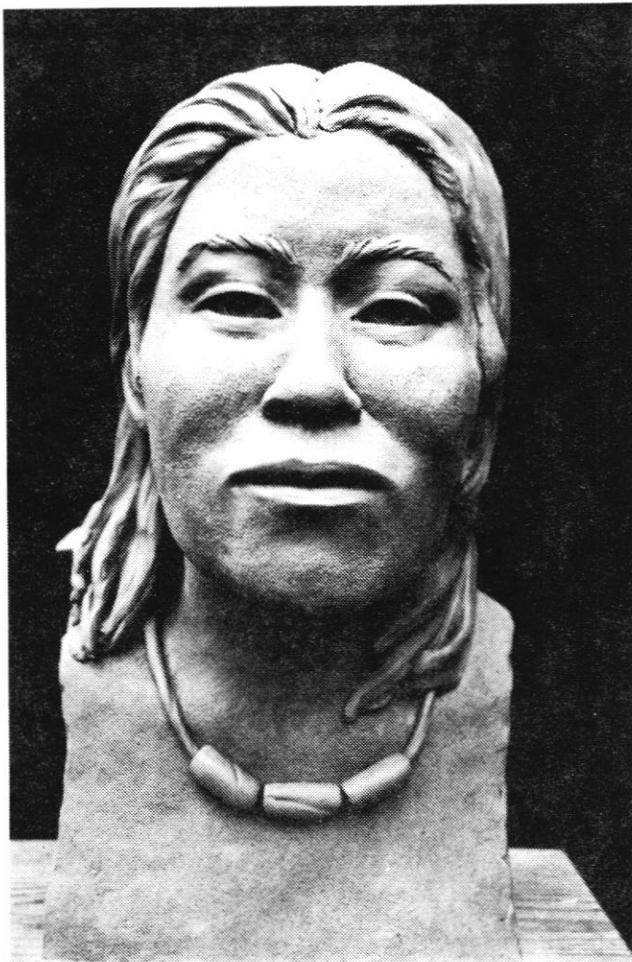


Figure 3. Completed reconstruction – frontal and lateral views

The Distribution of Coastal Margin Pottery Types in Southeast Texas

Leland. W. Patterson

Abstract

A discussion is given on the geographic distribution of certain pottery types as indications of seasonal movements of Late Prehistoric and Historic Indians of the coastal margin of Southeast Texas.

Introduction

A significant body of data on archeological sites in Southeast Texas now exists (Patterson 1989a, 1989b), but seasonal subsistence patterns of Indians in this region are still not well understood. It is difficult to identify the complete seasonal round of Indians from archeological data, either for inland or coastal margin cultural groups. There are some data available, however, that can be used to identify seasonal movements of coastal margin Indians.

Story (1985:48) states that Indians of the coastal margin of Southeast Texas exploited the brackish water clam, *Rangia cuneata*, during the warmer portions of the year, and the balance of the seasonal round was evidently spent a short distance inland, where the main economic activities were hunting and plant collecting. It now appears to be possible to refine Story's model of the seasonal round of Indians of the coastal margin, at least for the Late Prehistoric and Historic Indian time periods, based on the geographic distribution of certain pottery types. This paper examines the distribution of Rockport and grog-tempered pottery types that were manufactured mainly by Indians of the coastal margin of the central and upper Texas coast, respectively. These ceramic types were manufactured during the Late Prehistoric and Historic Indian time periods. A model is presented for seasonal subsistence patterns of Indians of the coastal margin of Southeast Texas.

Distribution of grog-tempered pottery

Aten (1983: Figure 14.1) notes that various types of grog-tempered pottery, such as San Jacinto Incised and Baytown Plain, were manufactured during the Late Prehistoric and Historic Indian periods in the Galveston Bay Area ceramic sequence. The geographic distribution in Southeast Texas of grog-tempered pottery can be analyzed on a quantitative basis, using computerized data bases for inland (Patterson 1989a) and coastal margin (Patterson 1989b) subregions. This paper uses information from the two data bases as updated to January 1990. These data bases are continuously expanded as new data becomes available.

A summary of grog-tempered pottery in Southeast Texas by geographic zone (Figure 1) is given in Table 1. There is a decrease from east to west in the frequency of occurrence of grog-tempered pottery. There is also a decrease from the coastline to inland areas of the frequency of grog-tempered pottery. Only 28% of Late Prehistoric sites of inland areas have grog-tempered pottery compared to 69% of Late Prehistoric sites on the coastal margin. Further, the quantity of grog-tempered sherds found at inland sites is only 20% of the quantity of grog-tempered sherds found at coastal margin sites. Coastal margin sites are found in a band roughly 20 miles wide from the coastline, with most sites in this subregion having *Rangia* shell. It may be concluded from available data that grog-tempered pottery is principally a coastal margin type in this region. The significance of inland

occurrences of grog-tempered pottery will be discussed further in regard to a proposed model for the seasonal round of coastal margin Indians from the Late Prehistoric and Historic Indian time periods.

Inland distribution of Rockport pottery

Rockport pottery (Suhm and Jelks 1962:131-136) is a well-known group of ceramic subtypes (Plain, Incised and Asphalt Painted) of the central coastal margin of Texas during the Late Prehistoric and Historic Indian periods. As shown in Table 2, Rockport pottery has been found at four sites in Wharton County. One site, 41WH8 (Hudgins 1982,1984), has a collection of 8000 Rockport sherds, with all specimens probably from the Historic Indian period. Thus, there are three sites with small quantities of Rockport pottery during the Late Prehistoric period in Wharton County; these constitute 21% of the sites of this time period in Wharton County. This is similar to the small quantities of grog-tempered pottery found at sites of inland counties of Southeast Texas.

There are three nearby sites in Wharton County that have evidence of the gathering of Indians from different geographic areas (Patterson and Hudgins 1990a, 1990b; Patterson et al. 1990). It is possible that Indians gathered in this area during the fall for hunting of deer and bison and gathering of nuts. At one of these sites, 41WH12, Rockport is one of the pottery types found (Patterson and Hudgins 1990a), so Indians from the central Texas coastal margin came to this inland location. Grog-tempered pottery was also found at this site, indicating other Indians came here from farther east on the coastal margin.

Seasonal subsistence model and general discussion

There is evidence that Indians of the coastal margin of Southeast Texas utilized a band of land about 20 miles wide from the coastline during most of the year, and were not strictly confined to the coastline during warmer months. The J. D. Wells site (41HR639) is a good example of the utilization of an area slightly inland from the coastline during several seasons (Patterson 1990). This site is located on Cedar Bayou about 12 miles from the coastline. The analysis of *Rangia* shell for seasonality shows site use from May through August, similar to shell midden sites on the coastline. Fully developed deer antler at this site shows site use also in the fall.

A model for the seasonal round of coastal margin Indians can be proposed, based on the geographic distribution of grog-tempered pottery. In this model, a band of land along the coastline where the highest concentration of grog-tempered pottery occurs was utilized for subsistence activities throughout much of each year. Indians of the coastal margin of Southeast Texas were nomadic, but probably somewhat more sedentary than their inland counterparts during the warm weather months when exploitation of *Rangia* occurred. In this model, Indians of the coastal margin also went farther inland in fall and winter months for hunting and nut gathering, as shown by the presence of some grog-tempered pottery at sites farther inland than the basic coastal margin land strip of about 20 miles width. Ethnographic references support the concept that Indians from the coastal margin moved somewhat inland during the fall and winter months (Newcomb 1961:321).

It should be noted that Indians of the coastal margin did not subsist on *Rangia* alone at large shell midden sites. Dillehay (1975) has shown a wide range of faunal remains at coastal margin shell midden sites. Even when based at sites on the coastline, Indians would have continually ranged somewhat inland to hunt and gather food resources other than shellfish. The data base for the coastal margin of Southeast Texas (Patterson 1989b) shows that Indians of this subregion utilized most of the same animal food resources as their counterparts on the inland coastal plain.

Inland incursions by Indians from the coastal margin appear to have followed trails along streams. Grog-tempered pottery of inland Montgomery County is mainly associated with sites in the San Jacinto River basin. Grog-tempered pottery of inland San Jacinto and Polk Counties is mainly associated with sites in the basins of the East Fork of the San Jacinto River and the Trinity River. Indians coming from the coast to inland Wharton County may have used trails along the San Bernard and Colorado Rivers. Some Indians from the coastal margin may have used canoes for travel to inland areas (Newcomb 1961:321). In Southeast Texas, there are several major rivers and many smaller creeks and bayous flowing to the coast from fairly far inland. Grog-tempered pottery of coastal margin Indians is found up to about 100 miles inland, but only in small quantities at individual sites that are farther inland than the basic coastal margin utilization land band of about 20 miles width. A summary of inland sites with grog-tempered pottery in Southeast Texas counties is given in Table 3.

The Allens Creek location (Hall 1981) in Austin County is a good example of a small amount of grog-tempered pottery being found inland (about 60 miles from the coastline) along a major river (Brazos), possibly representing visits of Indians from the coastal margin.

The intensity of inland incursions by coastal margin Indians may have varied from year to year, depending on the availability of desired food resources. For example, the native pecan crop would have been highly variable each year, and the presence of bison would have been somewhat variable. Even the amount of deer available each year would have been variable.

There are only occasional occurrences at inland sites of coastal margin materials other than grog-tempered pottery, namely asphalt, marine shell ornaments, shark teeth and stingray spines. None of these types of materials occur in high frequency at inland sites, and many specimens may represent trade items rather than the presence of coastal margin Indians during the seasonal round.

The use of grog-tempered pottery to indicate inland seasonal movements of Indians from the upper Texas coastal margin understates the amount of seasonal movement. Goose Creek sandy paste pottery was made by Indians of both the coastal margin and the inland plain. Most of the pottery at inland sites is of the Goose Creek type, and there is no way to separate any of this pottery as being made by Indians from the coastal margin.

Summary

Based on the geographic distribution of grog-tempered pottery and some other miscellaneous data, a model has been proposed for the seasonal subsistence pattern of Indians of the coastal margin of Southeast Texas. In this model, Indians of the Early Ceramic and Late Prehistoric time periods utilized a land band about 20 miles wide from the coastline during most of the year for subsistence activities. In addition, during the fall there were movements up to about 80 miles farther inland for hunting and harvesting of plant foods such as nuts.

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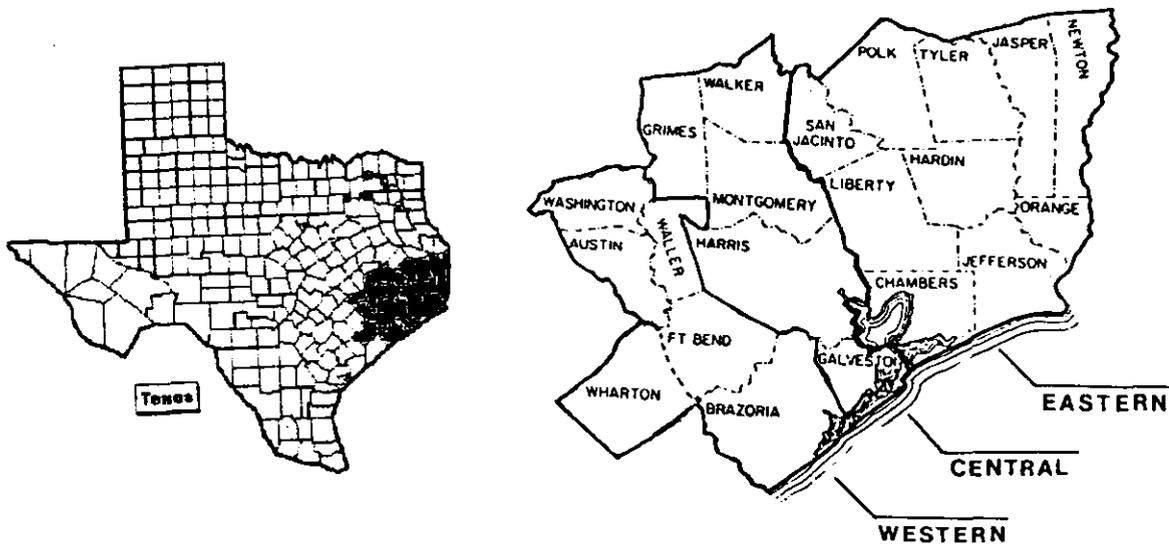


Figure 1. Southeast Texas study area

Table 1. Grog-Tempered Pottery Distribution in Southeast Texas

item	zone						total region	
	western		central		eastern		I	CM
	I	CM	I	CM	I	CM		
L. Prehist. sites, no.	38	9	68	28	42	87	148	124
grog-temp. sites, no.	8	7	21	16	13	62	42	85
grog-temp. sherds, no.	135	240	128	2447	976	3331	1239	6018
grog-temp., % of sites	21	78	31	57	31	71	28	69

I - inland, CM - coastal margin

Table 2. Rockport Pottery in Wharton County

site	no. of sherds
41WH8	8000
41WH12	2
41WH16	1
41WH19	44

Table 3. Inland Sites with Grog-Tempered Pottery

<u>County</u>	<u>Late Prehistoric sites, no.</u>	<u>sites with grog-temp. pottery, no.</u>	<u>sites with grog-temp. pottery, %</u>
<u>Western</u>			
Austin	6	4	67
Brazoria	2	0	0
Fort Bend	11	3	27
Waller	3	0	0
Washington	2	0	0
Wharton	14	1	7
subtotal	38	8	21
<u>Central</u>			
Harris	53	12	23
Montgomery	14	9	64
Walker	1	0	0
Grimes	0	0	0
subtotal	68	21	31
<u>Eastern</u>			
San Jacinto	5	2	40
Liberty	14	1	7
Polk	11	5	45
Hardin	2	0	0
Jefferson	1	1	100
Orange	2	2	100
Jasper	5	2	40
Tyler	2	0	0
subtotal	42	13	31
Total Region	148	42	28

A Metal Artifact from Site 41WH16, Wharton County, Texas

Joe D. Hudgins

Introduction

Site 41WH16 is located in Wharton County, about four miles west of Hungerford in a cultivated field near a spring, and about 75 yards west of the present channel of the West Bernard River.

In 1984 the Houston Archeological Society conducted a controlled surface collection and metal detector survey at the site, resulting in the recovery of over 2000 gun parts and other related artifacts. A report was published indicating this was the location of a small military outpost — an armory of the Republic of Texas Army known as Post West Bernard (Hudgins 1986). Other materials found were diagnostic Indian artifacts from the Late Archaic, Late Prehistoric, and Historic Indian periods (Hudgins 1985). Prior to the 1984 surface collection and survey, the writer collected from the surface numerous metal artifacts, including the metal artifact that is the subject of this report.

The artifact

The metal artifact appears to have been made from a square iron spike. It is bent at a right angle (Figure 1a) possibly due to cultivation of the site over a period of approximately 30 years. Figure 1b illustrates how the point may have looked originally.

The overall length of the (straightened) point is 153 mm and it weighs 30.2 gm. The distal end of the point was flattened to form a point with barbs. The length of the point from barbs to the distal end is 36 mm. The width at the barbs is 28 mm and the thickness of the point is 3.8 mm. The proximal end of the point was flattened to form a square base 24 mm in width and 24 mm in length, with a thickness of 2.5 mm. The shaft of the projectile point is 94 mm in length and 7.3 mm in diameter.

The projectile point is in fair condition with some rusting and pitting which have caused the edges of the tip and base to become somewhat jagged.

Discussion

The question remains as to the identification and use of this artifact. It is possible that it may be a projectile point made by the historic Indian occupants of the site. Several diagnostic Indian artifacts found on the site are very similar to those found on another historic Indian site, 41WH8 (Hudgins 1984), located about two miles south of site 41WH16.

It is also possible that the artifact was made and used by the men stationed at Post West Bernard. In such a remote outpost it is probable the men had to provide much of their meat from hunting and fishing. The artifact could have been hafted to a shaft and used to harpoon fish in the West Bernard River. In fact, this artifact is very similar to a metal harpoon point used by the writer in his youth to spear gar in the same river.

Acknowledgements

The writer wishes to thank Houston Archeological Society members David Atherton and Linda Moorrees for the drawings and measurements of the iron artifact.

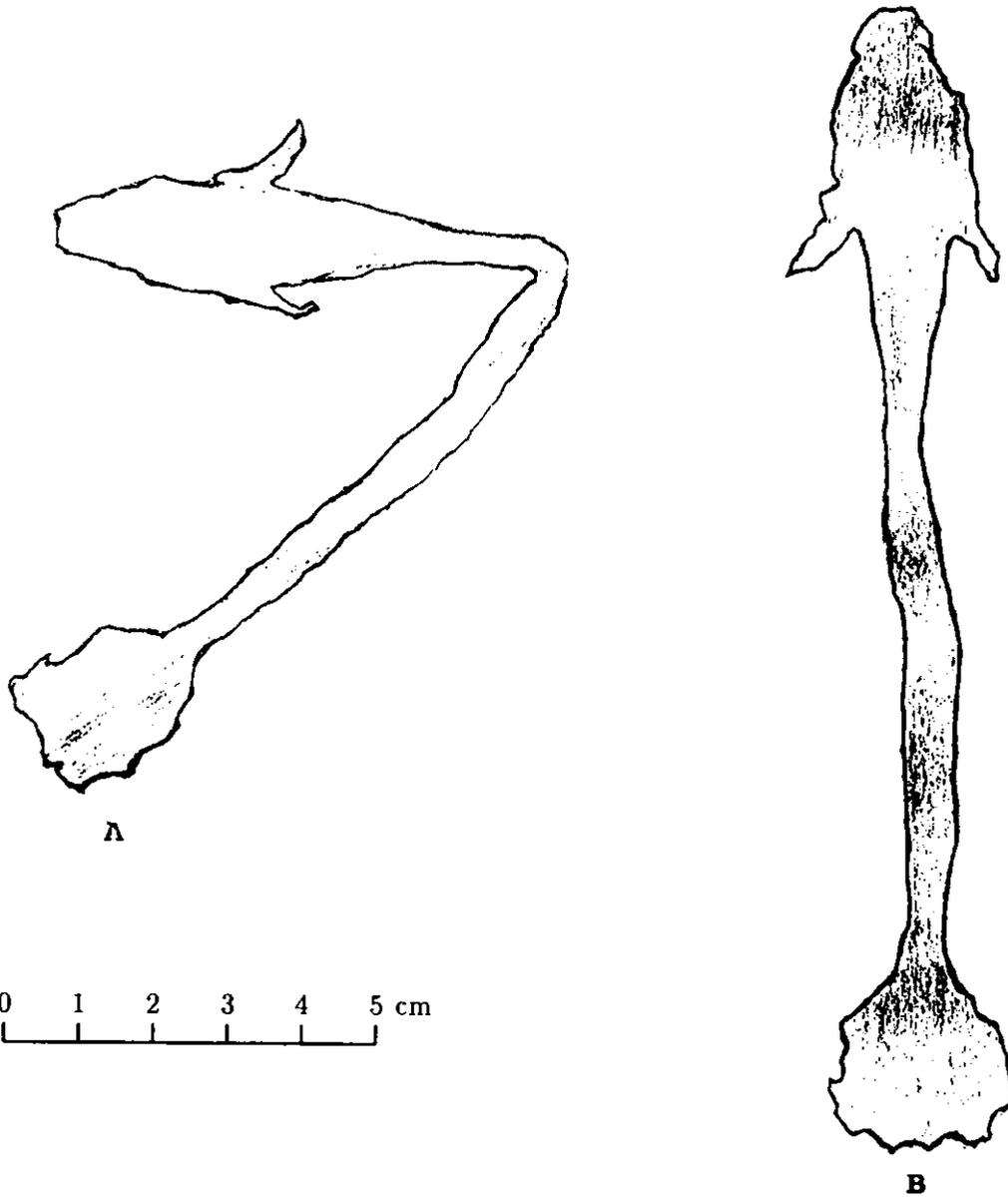
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A - bent form, B - straightened form
Figure 1. Site 41WH16 metal artifact

Book Review

Leland W. Patterson

The Archeology and Bioarcheology of the Gulf Coastal Plain, Volumes 1 and 2, by D. A. Story, J. A. Guy, B. A. Burnett, M. D. Freeman, J. C. Rose, D. G. Steele, B. W. Olive and K. J. Reinhard, Arkansas Archeological Survey Research Series No. 38, 1990. 748 pages, \$59.00

Introduction

The U. S. Army Corps of Engineers has completed an ambitious project to develop an overview of the archeology of their Southwest Division. This is a land area between the Mississippi River and the Arizona/New Mexico border, and from Southern Kansas to Mexico and the Gulf. The overall study covers approximately one-fifth of the continental United States. This review covers the report for Region No. 2, the Gulf Coastal Plain, one of six regions in the Southwest Division.

Because of the large land areas covered, the report being reviewed gives an overview rather than a detailed synthesis for each subarea. While the main reason for this report series is to provide more information for Cultural Resource Management, these publications are also useful for general archeological research. Because of the magnitude of this project, some subjects are presented as detailed syntheses, while other subjects are covered as general overviews. One of the most valuable features of this report series is that an investigator can compare cultural traits between subareas, which is not easy to do without a collection of information such as this. This report series will serve as a valuable reference source for some time to come.

Overview of the Gulf Coastal Plain

The area of the Gulf Coastal Plain used in this publication is different from the more traditional definition used by investigators. Most investigators would define the Gulf Coastal Plain as an area 100 to 200 miles wide along the Gulf Coast. This publication, however, addresses all of East Texas and a few counties in Oklahoma, Arkansas and northern Louisiana. The north boundary of the study area is 350 miles from the Gulf. In general, the eastern boundary of the study area is the western boundary of Louisiana, and the western boundary of the study area is the Brazos River.

In the introduction to this report, problems are noted in obtaining and handling large amounts of data for the archeology of this area. A more recent solution to handling large data sets in Southeast Texas has been the use of computerized data bases (Patterson 1989a, 1989b, n.d.a, n.d.b). Many problems can be addressed adequately only by use of large data sets that include data from both excavations and surface collections. There are limitations to using only data from a few key sites to develop regional syntheses, as was done in the publication reviewed here.

A chapter on environmental setting is given which includes physiography, rock and mineral resources, surface hydrology, soils, climate, biota and past environments. A selected list of references is given on paleoenvironmental data.

A chapter on previous archeological investigations starts with work in the late nineteenth century. Emphasis is given to major river basin and reservoir projects. The information given provides a general overview of the history of archeological investigations in this geographic area, but does not reflect in much detail the increased level of investigation over the last 15 years.

There are four chapters on bioarcheology and bioarcheological synthesis. Since most archeologists are not experts on human skeletal analysis and interpretation, these chapters provide a new source of useful integrated information. The two chapters on bioarcheology present a summary

of the data base, with temporal and geographic distributions of burials for eastern and western portions of the study area. The western portion of the study area includes most of Southeast Texas. The two chapters on bioarcheological synthesis also cover the eastern and western portions of the study area. The chapter on the western portion is fairly brief, with summaries of mortuary data on age, sex ratio, disease and trauma. Possibly because of the availability of more data and research results, the chapter for the eastern portion presents a wider variety of data and corresponding interpretations. These summaries include mortuary data on age, disease and trauma for several river basins in northeast Texas, mainly for late cultural periods. Interpretations address environmental-cultural interaction, changes in settlement pattern and cultural stability. For Southeast Texas, mortuary data are discussed in both the chapters on cultural history and bioarcheology, with attention given to the organized burial practices in the lower Colorado and Brazos River basins and on the coastal margin.

The largest chapter of this report (204 pages) is devoted to the cultural history of Native Americans, written by Dee Ann Story. Some detailed comments on this chapter are given in a separate section of this review, especially concerning Southeast Texas. This overview of the cultural history of the study area includes summaries on radiocarbon dates, cultural units and cultural time periods. The Paleo-Indian time period is discussed mainly in terms of the distributions of Clovis, Folsom, Scottsbluff, Dalton and San Patrice projectile points. Artifact type sequences and discussions are given separately for the Archaic time period of Southeast, East-Central, North-Central and Northeast Texas, including a few counties in adjacent states. This is the most detailed discussion given so far on the archeology of most portions of the study area, except for Aten's (1983) study of the coastal margin of Southeast Texas.

Late cultures (ceramic periods) are discussed in terms of technological characteristics and geographic distributions. Significant data is summarized for the Caddo Culture. A new late cultural group, named Mossy Grove, is proposed for Southeast Texas, but extends fairly far into the central area of East Texas. Agriculture is mainly connected with the Caddo Culture. Developmental sequences are discussed for various time periods and summaries of key sites are given.

A chapter by Freeman presents a brief summary of the cultural history of early European and African settlers, starting with initial European contacts. Comments are offered on the management of historical cultural resources.

There is a separate chapter on the characterization of Gulf Coastal Plain adaptation types by Native Americans. Variations in hunter-gatherer patterns are proposed, including periodic changes in bison availability. The use of agriculture is also considered.

An extensive reference list is given for the entire study area. Appendices include sections on abbreviations and acronyms, a cross index of Southern Methodist University and Texas Archeological Research Laboratory site numbers, radiocarbon dates, and excavated Caddoan sites with Coles Creek style ceramics.

Comments on cultural history of Native Americans

Story has given an excellent overview of the cultural history of Native Americans in this large study area. Some critical comments are given here, however, on some of Story's conclusions, especially relating to Southeast Texas. These comments illustrate that there is no consensus on the interpretation of many subjects in the study area. Story has been highly successful in presenting details that would suggest further areas of research.

Story (pages 190,197) proposes that both Dalton and San Patrice projectile point types developed from Clovis. Another possibility exists for the development of the San Patrice point. Early Notched points seem to start earlier in Southeast Texas (Patterson 1989c) than the San Patrice

type. The San Patrice point type may have developed from contacts of Indians using Dalton and Early Notched point styles.

In this report, Southeast Texas is classified as a hot spot for Scottsbluff points (page 209). Actually, there is a fairly sharp decrease in the frequency of Scottsbluff points from the Red River southward to the Gulf Coast (Patterson 1990).

It is noted in this report (page 214) that data for the Archaic period projectile point sequence is most highly developed for East-Central Texas, but that this sequence is still not well defined on an absolute chronological basis. A large amount of data is required to completely define the time range of a specific projectile point type (Patterson 1989d). Story, like many archeologists, seems to expect something that may not always exist, that point types can be used as indicators of narrow time intervals. Story (page 214) states that "when a number of different types of points are recovered from the same excavation level or geologic zone, it is best to regard the context as being temporally mixed." This concept ignores the fact that many projectile point types were made for long time periods, with significant temporal overlaps in point types. Projectile point types are generally most useful as indicators of broad time periods.

In this report, a placement of the Carrollton point in a time range of 2000 to 2500 B.C. (page 217) in North-Central Texas does not agree well with data from Southeast Texas. Carrollton points seem to occur in some portions of the Early and Middle Archaic periods (roughly 5000 to 1500 B.C.) at excavations at a site in Harris County (Patterson 1980), and there is a radiocarbon date from a well-stratified site in Fort Bend County (Patterson 1988) of 6490 ± 120 years B.P. (4540 B.C.), which represents the minimum age of a Carrollton or Carrollton-like point specimen.

The Archaic period artifact sequence given for Southeast Texas (Figure 33) is a strange mixture of common and rare artifact types, with some of the more common types not included in the sequence. Artifact types shown in this sequence that are rare or occur in low frequency in Southeast Texas include the Waco sinker, the plummet, the boatstone, the stone gorget, the Ponchartrain point, the Morrill point and triangular points in the Early Archaic period. Story paints too bleak a picture about knowledge of the projectile point sequence of Southeast Texas. Recent excavation data and radiocarbon dates continue to support the projectile point sequence given by Patterson (1983: Table 1). While this sequence does not give fine-grained temporal placement for point types, the placement of point types in broad time periods is an adequate working model for the study of the continuity of lifestyle over a long time interval in this region, until more chronological data become available.

Most of Story's comments seem to place the start of the Gary point too late, about A.D. 1. Gary and Kent points are highly related as a technological series. Both of these point styles start in the Middle Archaic (3000 to 1500 B.C.) in Southeast Texas (Hall 1981; Ensor and Carlson 1988; Patterson 1980; Wheat 1953), and continue for a long time interval into the Late Prehistoric. Here again, Story seems to assume that a specific point style should fit into a narrow time range. Also, in contradiction to Story's view (page 275), there seems to be ample data to demonstrate that Gary and Kent points tend to become smaller in later time, especially in the Early Ceramic period (Keller and Weir 1979:37; Patterson 1980; Ensor and Carlson 1989).

Story has proposed a new late culture named Mossy Grove whose geographic area includes Southeast and much of East-Central Texas, as defined by the distribution of sandy paste Goose Creek pottery. It seems somewhat tenuous to define a culture based mainly on a single trait. Archeological assemblages from the time period and geographic area of the proposed Mossy Grove culture have considerable variation. The term "culture" can be defined in many ways, but a given culture should have several shared traits that make it distinct from adjacent cultures. I do not perceive this to be the case for the proposed Mossy Grove cultural area. There are as many differences in the traits of archeological assemblages within the defined geographical area as there

are with assemblages in adjacent outside areas. It is not clear that there would be any advantage to using the name of a culture rather than a geographical area name.

I do not want to appear too critical of the excellent cultural history of Native Americans presented by Story. A single person cannot be expected to cover all the details of such a large study area, however. Also, it should be realized that East Texas is still a dynamic research area. Many problems are not resolved, but continuing additions to the data base allow for more refinements in interpretations.

Summary

The publication reviewed here presents an excellent overview of the archeology of East Texas and a few border areas in adjacent states. This is a valuable addition to the literature for the geographic areas involved. This report should be viewed as a detailed overview, but not as a definitive synthesis for the study area. As a general reference and as a tool to guide further research, this publication should see much future use. The Corps of Engineers should be complimented for sponsoring this report series. Much of contract archeology has become a rather mechanical process, with the wide use of "boiler-plate" type of writing. Perhaps regional overviews such as the one reviewed here will encourage a revival of the research ethic.

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