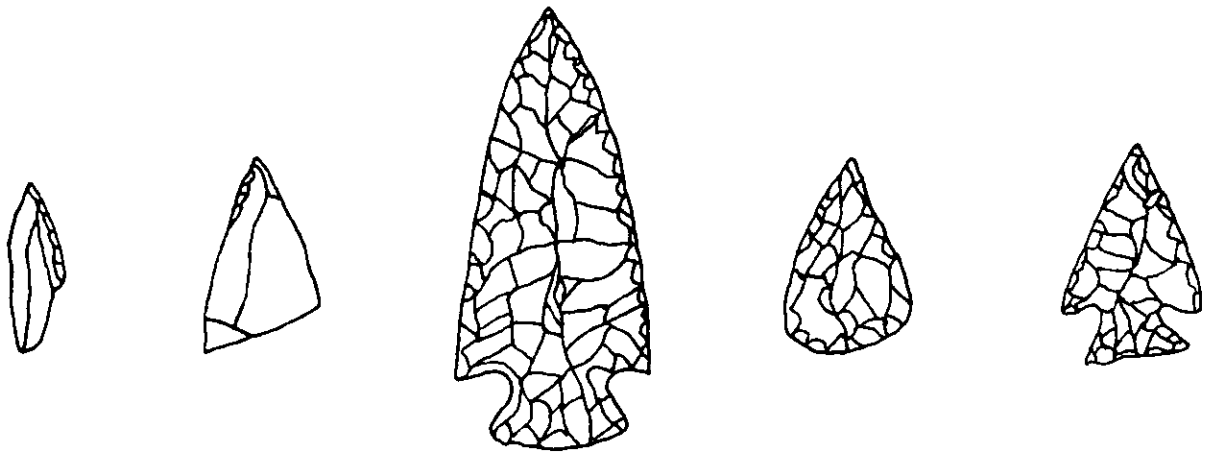
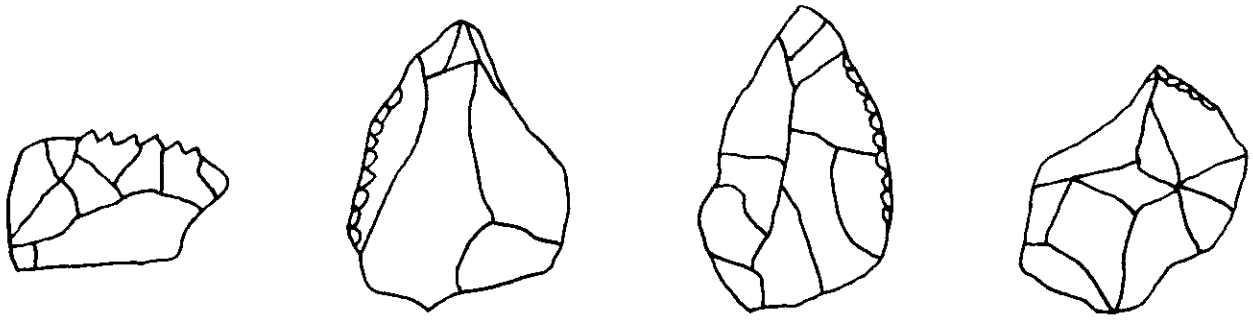
JOURNAL
HOUSTON ARCHEOLOGICAL SOCIETY

Number 116 December 1996



Lithic Artifacts from Site 41WH21



Houston Archeological Society Journal

Number 116, December 1996

Contents

Houston Archeological Society

P.O. Box 6751, Houston, Texas 77265-6751

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ISSN-8756-8071

Excavations at the Kolojaco Site, 41WH21, Wharton Co., Texas

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Introduction

This paper gives the results of excavations at site 41WH21 in eastern Wharton County, Texas. Excavations were done by the Houston Archeological Society in the fall of 1994 and the spring of 1995. The site was discovered and recorded for state records of the Texas Archeological Research Laboratory by Joe Hudgins. Work at this location was made possible through the courtesy of the landowner, Raymond Kolojaco.

Field work was directed by Joe Hudgins, the HAS Field Director. Individuals who participated in excavation work include Charles Boyle, Bill Csanyi, Richey Ebersole, Phil Endlick, Cheryl Faber, Dick Gregg, Sue Hamblin, Joe Hudgins, Bill Just, Sheldon Kindall, Ray McCausland, Don McReynolds, Bev Mendenhall, Bernard Naman, Allen Oravetz, Etta Palmer, Tom Palmer, Lee Patterson, Lenore Psencik, Gary Ryman, Jerry Sadler, Bob Shelby, Jeanette Siciliano, Muriel Walker, Jim Wells, Roy Whitney, and Gina Williamson. Site mapping and field records were handled by Sheldon Kindall.

Site 41WH21 is located on a terrace about 100 feet from a small lake in a wooded area. The general area is a mixture of woodlands and coastal prairie. A variety of faunal and floral food resources would have been available for the prehistoric occupants of this site. Results of excavations show that this site has an occupation sequence from the Middle Archaic through the Late Prehistoric time periods, a time interval of about 6500 years. This location was a seasonal campsite of nomadic hunter-gatherers. The large quantity of fired clayballs found here for all time periods may indicate processing of some seasonally available plant foods by roasting.

Excavation Details

A layout of excavations at site 41WH21 is shown in Figure 1. Seven one-meter-square pits were excavated in a rectangular area of 7 by 15 meters (105 square meters). The total site area may be larger, but possibly not to the south, where cultural stratigraphy was not deep. Excavation work was slow, due to the difficult nature of the soil. All soil was put through 1/4-inch (6 mm) mesh screens, except for soil samples reserved for fine screen processing. The top levels of Pits A to E were screened dry, which was very difficult because of the sticky nature of the "black gumbo" soil. Screening was then changed to water screening at the lake shoreline, using a small gasoline-powered water pump. This change in procedure greatly improved operations, and resulted in higher recovery of small chert flakes and bone pieces.

Little natural stratigraphy can be observed at this site. Soil in most excavated strata was a dense dark brown sandy loam, locally called "black gumbo." Soil color became somewhat lighter at a depth of about 90 cm, but the lighter colored soil was even more difficult to dig than the dark soil at higher levels.

Samples of soil from various levels were reserved for analyses using finer-mesh screens. The soil was allowed to dry. It was then immersed in water until the cohesiveness of the finer fraction of the soil was released. The soil was then passed through a 20-mesh screen so that the coarser fraction was retained. The residue was dried and then examined under a binocular microscope.

Other than a few quartz grains, all the soil passed through the screens. Thus the matrix is fine sand and silt with no clay. Inclusions within the soil were ash, tiny ferruginous nodules, small fired clayballs, plant parts, tiny chert chips, burned bone fragments, and small amorphous lumps

of soil particles. Many of these inclusions are coated with a substance that appears to be grease that has been oxidized, perhaps by exposure to fire. This substance has adhered to some of the inclusions along with soil particles so that some of the characteristics of the bone fragments are obscured. There are no unburned bone fragments but some of the bones that were calcined do not have the coating. Whether the bones were burned during food processing, when thrown into a fire, when a fire was lighted above the deposited bones, or when wildfire occurred can not be determined. It is probable that soil chemicals destroyed any unburned bones. The majority of the bone fragments have had the corners of the fracture rounded as though having been tumbled about. Whether this occurred as the bones were crushed in food preparation, during passage through an alimentary canal, by pedestrian impact, or just in the soil during centuries of bioturbation can not be determined. The coating happened after the rounding of corners. The coating also appears on some of the plant parts. The small lumps of soil appear to have been partially fused together due to heat or the unknown coating substance. The character of the inclusions within the soil are consistent through depth and across the site. Thus, there must have been a continual and relatively unchanging process at the site through time. If there were differences, they have been obscured by bioturbation as vertebrate and invertebrate organisms brought soil, with the small inclusions, to the surface through the centuries.

Projectile Points

A summary of projectile points and dart point preforms from site 41WH21 is given in Table 1, and some of these artifacts are illustrated in Figures 2 and 3. The Late Prehistoric period (A.D. 600-1500) is represented by two Scallorn bifacial arrow points and a stemless bifacial arrow point found in the 5-10 cm excavation stratum, a Scallorn point stem in the 15-20 cm stratum, and by a Scallorn arrow point in the 35-40 cm stratum. The arrow points from the 5-10 cm stratum are at the interface with modern materials, such as glass. This stratigraphic position again demonstrates the late use of the Scallorn point in the last part of the Late Prehistoric period, or perhaps even Protohistoric (A.D. 1500-1700), unlike the Scallorn-Perdiz arrow point time sequence in Central Texas (Patterson 1991a). A Scallorn point in the uppermost stratum of site 41WH19 is associated with a radiocarbon date of A.D. 1585 ±80 (Patterson et al. 1987:9). Major bifacial arrow point types do not have a demonstrated serial sequence in Southeast Texas, with Scallorn, Alba, Perdiz, and Catahoula points being used concurrently throughout the Late Prehistoric. The Scallorn arrow point found in the 35-40 cm stratum of Pit C was probably displaced downward by human burial fill disturbance. A straight-sided dart point stem (Kent?) and a dart point preform found in the 10-15 cm stratum represent the concurrent use of the spear and bow and arrow in the Late Prehistoric period in inland Southeast Texas (Aten 1983:306; Patterson 1980). It is estimated that the Late Prehistoric period at this site occupies a stratigraphic position of 5-30 cm depth.

An Ellis dart point (Figure 2E) found in Pit C (30-35 cm) represents the Early Ceramic period (A.D. 100-600) at this site. Ellis points are found in both the Late Archaic (1500 B.C.-A.D. 100) and Early Ceramic periods in Southeast Texas (Patterson 1991b). The Ellis point specimen at this site may have been disturbed by burials in Pit C, but in any event is likely to be from the Early Ceramic period, which is estimated to occupy a stratigraphic position of 30-45 cm. Exact temporal placement of each 5 cm stratum at this site is difficult because time-diagnostic projectile point types were not found in all strata. Two dart point fragments and a preform fragment found in the 35-40 cm stratum are also from the Early Ceramic time period.

It is estimated that the Late Archaic period (1500 B.C.-A.D. 100) occupies a stratigraphic position of roughly 45-65 cm. Dart point fragments were found at 45-50 and 60-65 cm, and two preform fragments were found at 45-50 cm. A large early stage dart point preform (Figure 3A) was

also found in the 45-50 cm stratum.

The Middle Archaic period (3000-1500 B.C.) is represented by a Bulverde dart point (Figure 2F) in the 70-75 cm stratum. Dart point fragments found at 65-70 cm and 85-90 cm may also be from the Middle Archaic period. Judged by the depth of stratigraphy containing cultural materials below the Bulverde point (75-105 cm), there is a possibility that occupation of this site started in the Early Archaic period (5000-3000 B.C.), but there are no time-diagnostic artifacts to demonstrate occupation before the Middle Archaic period.

Three unifacial arrow points (Figure 3) were found at site 41WH21, all in excavation strata earlier than the Late Prehistoric period. Unifacial arrow points at 30-35 cm and 40-45 cm are judged to be from the Early Ceramic period, and a unifacial arrow point at 60-65 cm appears to be from the Late Archaic period. Unifacial arrow points start earlier than standardized bifacial arrow point types in Southeast Texas, possibly as early as about 2000 B.C. (Patterson 1980, 1992).

Ceramics

A total of 449 potsherds were found at site 41WH21, including 11 (2.4%) Goose Creek Incised sherds, and 438 (97.6%) Goose Creek Plain sherds. Stratigraphic positions of excavated potsherds are summarized in Table 2. Details of incised sherds are given in Table 3, and some incised sherds are illustrated in Figure 4. Decorative patterns of incised sherds are all simple linear designs.

It is judged that a few potsherds found below 45 cm represent stratigraphic mixing, because only two of seven pits had pottery below 45 cm. This is especially true of Pit H, where intrusive burial disturbance is likely.

All pottery at this site has been classified as of the Goose Creek sandy paste type. Coarse sand particles in the pottery paste are like those in O'Neal Plain, variety Conway (Aten 1983:238), where coarse sand has been added as temper. However, at site 41WH21 the coarse sand appears to be a natural occurrence in the clay, rather than added temper. Fired clayballs at site 41WH21 also contain coarse sand particles. This situation is the same as for nearby site 41WH72 (Patterson et al. 1995), where coarse sand was also found in both potsherds and fired clayballs.

General Lithics

Lithic tools from this site are summarized in Table 4. As with most sites in Southeast Texas, few formal unifacial stone tools were found here. The unmodified utilized flake was the dominant tool type in this region. Formal types of unifacial tools at site 41WH21 include two gravers, and a denticulate. The five specimens shown in Table 4 as scrapers have edge use-wear from scraping rather than purposeful edge retouch. The specimen classified as a cutter is also a utilized flake with a distinctive pattern of edge use-wear from cutting. An analysis for edge wear was not done for all of the lithic flakes from this site. Scraping and cutting edge use-wear patterns have been illustrated by Tringham et al. (1974).

A total of 1812 chert flakes were found at 41WH21, as summarized in Table 5. This shows only a modest amount of lithic manufacturing at this site. There is evidence of heat treatment on many flakes, in the form of waxy luster, reddish coloration, and small potlid surface fractures. Flake size distributions for each excavation stratum are given in Table 6. There is a significant increase in percentages of flakes under 15 mm square for excavation levels below 50 cm. This is because water screening of soil was not started until the 50 cm excavation level in Pits A to D. Therefore, only flake size distributions below 50 cm excavation levels are representative of actual lithic manufacturing patterns.

All of the flake size distributions of 5-cm strata between 50 cm and 90 cm are typical for bifacial reduction in the production of dart points from flake blanks. The main portion of each flake size distribution curve is linear or nearly linear when plotted with a logarithmic scale for percent of flakes versus a linear scale for flake size, as would be expected for bifacial reduction (Patterson 1990). A typical plot of this type is shown in Figure 5 for flake size distribution of the 70-75 cm stratum of 41WH21.

Most lithic manufacturing at this site was done using imported flake blanks to make bifacial projectile points. There is little evidence of any primary reduction of chert cobbles here. Primary reduction of chert cobbles to produce flake blanks was done at lithic sources, which permits testing of materials and reduces transport weight and volume. One indication that highly trimmed chert pieces were being brought to this site is the small percentage of flakes with remaining cortex. For flakes larger than 15 mm square, there are 4% primary flakes (covered with cortex), 13.1% secondary flakes (partially covered with cortex), and 82.9% interior flakes (no remaining cortex). Only three small chert cores were found, which is another indication of little primary reduction of chert cobbles at this location. One core specimen has a diameter of 30 mm, another core is 35 mm in diameter, and a third core has dimensions of 57 by 33 by 20 mm. Only four thick chert pieces were found, none of large size.

Chert cobbles can be found in the Colorado and Brazos Rivers, at about equal distances from site 41WH21. Chert cobbles from the Brazos River are small, generally under 60 mm in length, with a few up to 80 mm in length. Large chert cobbles can be found in the Colorado River drainage system at Eagle Lake and upstream, with many cobbles over 150 mm in length. A chert cobble found in Pit D (25-30 cm) has dimensions of 97 by 89 by 58 mm, and appears to be from a Colorado River source. Because cherts from the Colorado and Brazos Rivers have similar appearances, size of cobbles and flakes is the main indicator of chert source, unless trace element analysis is done. At present, there are no data for trace element analysis of cherts from various sources in Southeast Texas.

A second chert cobble was found in Pit D (95-100 cm) with dimensions of 67 by 31 by 30 mm. Perhaps chert cobbles were used at this site as hammers to break bone for marrow extraction. As noted above, chert cobbles are too heavy and bulky for efficient transport to a site for subsequent reduction in lithic manufacturing.

Fired Clayballs

A total of 7134 fired clayballs were recovered in excavations at site 41WH21, as summarized in Table 7. Clayball sizes ranged from 15 mm to 80 mm in diameter, with an average weight of 6.7 gm each. Clayballs were used as heating elements in earth ovens. Hudgins (1993) has cooked meat with clayballs, and has demonstrated experimentally that clayballs retain heat for a long period. Because clayballs occur at only a small fraction of inland sites in Southeast Texas, it has been proposed (Patterson 1989) that clayballs may have been used for seasonal processing of certain plant foods.

Modern Materials

Small pieces of modern materials were found in some pits at levels of 0-10 cm. Small pieces of glass were found in Pit C (0-5 cm and 5-10 cm), Pit A (5-10 cm), and Pit F (5-10 cm). Two small pieces of iron were found in Pit H (0-5 cm). Thus, the 5-10 cm stratum appears to be the interface between the Late Prehistoric or Protohistoric and modern time. Few Indian artifacts were found in the 0-5 cm stratum.

Miscellaneous Artifacts

A piece of asphalt was found in Pit E (50-55 cm), and 10 small pieces of asphalt were found lower in Pit E (80-85 cm). Asphalt was used as an adhesive to haft projectile points. A piece of red ochre was found in Pit C (60-65 cm) below burial levels. Red ochre was sometimes used in burial ceremonies in Southeast Texas (Hall 1981; Patterson et al. 1993).

Burials

Human remains were found in Pits C and H, as shown in Figure 6, at depths ranging from 42 to 55 cm. The remains consisted of (1) Burial 1, a possibly semi-flexed burial, (2) Burial 2, five parallel long bones, (3) Burial 3, a skull, (4) Feature 2, eight teeth in anatomical position, and (5) several loose teeth in Pit H. The burials and feature were pedestalled and uncovered for observation but were left in situ, except for Feature 2 and the skull area of Burial 1 which were taken in matrix to the laboratory for more careful excavation and examination. The bones were quite fragmentary and in a very poor state of preservation. As a result, stature estimates and sex determinations were not possible, and most other observations are necessarily tentative.

Burial 1 was oriented to the northwest and ranged in depth from 43 cm (top of skull) to 50 cm. It consisted of fragments of skull, mandible, vertebrae, arm long bones, and possible clavicle, plus two long bone fragments in proper location for legs of a semi-flexed burial. However, there was no field identification of the latter as leg bones, so the burial is described as possibly semi-flexed. The torso appears to have been in a supine position, with arms extended along either side of the body.

The skull of Burial 1 was in a nearly upright position and facing south, but the upper portion was gone and the lower portion had flattened to a vertical thickness of approximately 2 cm. The maxillae were gone, and the upper portion of the mandible, as well as all but the (very friable) tips of the roots of a few teeth, were also gone. The remaining lower parts of the skull and mandible, along with portions of three cervical vertebrae, were in poor condition and so, after partial excavation in the laboratory, were left in the remaining soil matrix. Two fragmentary teeth found very close to the mandible were well worn, indicating an age of, say, 30 years or more.

Burial 2 consisted of five long bone fragments in the southwest quadrant of Pit H at depths of 52 to 55 cm, and oriented northwest/southeast. No identification as to specific type of bone was made in the field.

Burial 3 was the top portion of a skull at depth 48 cm in the northwest corner of Pit C. The skull bones extended into the north and west walls of the pit. No determination of skull orientation was made. Because of the poor state of preservation of bone at the site, it was decided not to pursue further excavation of this burial.

Feature 2, in Pit H at a depth of 50 cm, consisted of enamel portions of eight teeth, the five left most-distal maxillary and three left most-distal mandibular, in the anatomical position of the mouth being slightly open. Most of the associated bone was missing, and what remained was very friable. Because of this, and because only four of the enamel portions were whole, the teeth were kept embedded in matrix, and thus observation was limited. The occlusal surfaces of both third molars and the second mandibular molar are observable, and reveal that wear is present but very slight. This individual is thus estimated to have been about 18 years old.

In Pit H, just south of the pedestal of Burial 1, loose human teeth and tooth fragments were found at excavation levels of 45-50 cm and 50-55 cm. Only enamel portions were present. Eight of the teeth from 45-50 cm and two from 50-55 cm are complete (in regards to enamel) or nearly so. All are adult teeth, with canines, premolars, and molars 1-3 represented. One canine and two premolars have an interesting purplish brown stain on the labial/buccal side. The teeth show only

slight wear; only three, a first molar and two canines, exhibit small holes, indicating wear into the dentin. It is possible that all these teeth are from only one individual. Because the wear is slight, but more than that for the teeth of Feature 2 discussed above, it is concluded that one or more young adults, age about 20 years, are represented.

There were no grave goods with the burials, and no indications of burial pits. The burials appear to be Late Prehistoric in age since they are intrusive into the Early Ceramic period levels. Human bones were the only bones at this site which survived in an unburned state. This supports the conclusion that the burials are from late time in the occupation sequence.

Faunal Analysis

The small amount of faunal remains that was recovered on the 1/4-inch screens does not reveal much information. There were only 329 fragments of vertebrate bones and of these only 42 (7%) could be identified to some taxon. Turtle bones comprise 96% of the identified vertebrates with the rest being mostly deer-size mammals.

Combining the results of the fine-screen analysis with the larger material added another 471 bones that could be identified. This greatly increased the information about food resources. The larger screens indicate only that turtles and probably deer were processed for food. With the finer screens, it is apparent that fish were the most often used food, with the turtles and deer being in a secondary position as indicated by numbers. However, the deer and turtle may have been the dominant items as far as quantity of food is concerned. Additional diet items included treefrogs, lizards, snakes, and birds.

The combined results of the 1/4-inch and the finer-mesh screens are as follows:

Seeds and plant parts were included in the fine screen material in Pit C from 20 to 60 cm, in Pit E from the surface to 100 cm, in Pit H from the surface to 55 cm, and in Pit F at the surface. Insect and isopod exoskeleton parts were in Pit C at 60 cm, in Pit E from surface to 25 cm, and in Pit H at 45 cm. Fragments of newspaper were in Pit E at 60 to 65 cm along with an item that appears to be fecal pellet of a toad.

Three varieties of land snails were recovered. One *Gastrocopta contracta* and 12 *Helicodiscus singleanus* were at 5 cm in Pit E and an *Olygyra orbiculata* was at 60 cm in Pit C. A few fragments of freshwater mussel shell were at 20 cm in Pit A.

No vertebrate remains were recovered from Pit A.

Turtle bones and gar scales are identifiable as such even though they have been badly fragmented. Thus these varieties can be overrepresented in a faunal assemblage. In this report they are indicated as present rather than by numbers.

Fish remains are from gar, *Lepisosteus* sp. (scales present in 28 levels, 8 teeth, 3 vertebrae, head fragment); freshwater drum, *Aplodinotus grunniens* (12 teeth); catfish, *Ictalurus* sp. (11 pectoral spines); and unidentified Teleost species (162 vertebrae, 115 spines, 4 tooth-bearing elements, dentary, 11 pterygiophores, 3 quadrates and 32 ribs). The gar vertebrae and most of the unidentified fish bones are of very small individuals. The fish remains were only in Pits C, E, and H. The highest incidence of fish remains is at 60 cm in Pit C, 75 cm in Pit E, and at 45 and 55 cm in Pit H.

Amphibian remains consist of only the urostyle of a treefrog, *Hyla* sp. This was at 50 cm in Pit E.

Reptile remains are from turtle, lizard, and snake. Turtle bones are of mud turtle, *Kinosternon* sp. (3: 1 neural and 2 peripherals); softshell turtle, *Trionyx* sp. (1 shell fragment); and unidentified (present in 19 levels of Pits B, C, D, E, F, and H from 15 to 105 cm). Lizard, *Anolis carolinensis,* remains are only a caudal vertebra from Pit E at 60 cm. Vertebrae (13) of unidentified snakes were from Pits C, E, and F from 55 to 105 cm.

Bird remains are only a tibiotarsus of a small species. It came from 80 cm in Pit E.

Mammal remains are from fulvous harvest mouse, *Reithrodontomys fulvescens* (upper incisor), hispid cotton rat, *Sigmodon hispidus* (molar), rodent (56 tooth fragments present in 22 levels), probable deer (sesamoid), small mammal (1), medium mammal (2), and large mammal (12). Most of the rodent teeth are comparable to those of the cotton rat, and most of the large mammal bones could be from deer, *Odocoileus* sp. The rodents are from Pits C, E, and H at 20 to 105 cm. The deer and large mammal bones are from Pits B, C, D, E, and H at 20 to 85 cm.

In spite of the relative paucity of faunal remains in the assemblage, enough material was recovered to determine that the occupants of the site utilized fish, turtles, and deer as food resources with an occasional addition of other small vertebrates. The fine screen analysis added significant knowledge to this effort. The position of the bones within the site is not be correlated with the position of lithics, ceramics, or burned clay. Apparently food residue was not discarded at all the same places as other debris.

Summary

Site 41WH21 has a long occupation sequence, from the Middle Archaic through the Late Prehistoric time periods. The modest amount of lithic artifacts and the large number of fired clayballs indicate that this may have been a campsite used seasonally to process certain plant foods by roasting in earth ovens. Faunal remains show, however, that hunting and fishing were also activities at this location. No completely specialized sites have been found in this region. Data from site 41WH21 are another contribution toward a better understanding of the prehistoric archeology of Southeast Texas.

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Table 1. Projectile Points

type	level, cm	pit	dimensions, mm L	W	T	fig.
Scallorn	5-10	C	28.4	17.1	3.3	2A
Scallorn	5-10	A	23.5E	13.7	2.7	2B
stemless arrow point	5-10	H	26.1	16.1	4.1	2C
dart point stem	10-15	A				2J
dart point preform	10-15	B	47.4	25.9	6.0	2L
Scallorn point stem	15-20	H				
Ellis (D)	30-35	C	57.5	25.3	7.3	2E
unifacial arrow point	30-35	B	24.5	13.8	1.9	3D
Scallorn (D)	35-40	C		12.6	3.2	2D
dart point fragment	35-40	E		24.7	7.8	2I
preform fragment	35-40	E				
dart point fragment	35-40	E				
unifacial arrow point	40-45	E		15.1	2.2	3E
dart point fragment	45-50	E				
preform fragment	45-50	D				
preform fragment	45-50	F		28.1	10.7	3B
preform	45-50	F	85.1	44.1	13.4	3A
dart point fragment	60-65	D				2K
unifacial arrow point	60-65	B	20.0	6.4	1.4	3C
dart point fragment	65-70	H		26.8	7.4	2G
Bulverde	70-75	C			7.0	2F
dart point fragment	85-90	E		25.2	6.1	2H

D – disturbed context of burial
E – estimated

Table 2. Potsherd Counts

level, cm	A	B	C	D	E	F	H	total
0-5							1	1
5-10	9	5	24	2		2	19	61
10-15	4	120		12	2	2	15	155
15-20	1	34	12	8	7	4	6	72
20-25		8	13	9	4		6	40
25-30			14	4	3	1	6	28
30-35			8	4	8		8	28
35-40			10	11	9		5	35
40-45			1	1	14			16
45-50				1			6	7
50-55				4			2	6
	14	167	82	56	47	9	74	449

Table 3. Goose Creek Incised Sherds

level, cm	pit	thickness, mm	pattern	fig.
5-10	C	8.5	single line	4I
5-10	C	8.3	single line	
10-15	B	4.3	single line	4F
10-15	B	6.1	2 parallel lines	4E
15-20	C	5.4	3 parallel lines	4B
20-25	C	5.9	single line	
20-25	H	9.2	single line	4D
25-30	D	5.4	2 parallel lines	4C
25-30	E	8.4	2 non-parallel lines	4A
30-35	D	7.1	single line	4G
35-40	D	7.5	single line	4H

Table 4. Lithic Artifacts

item	level, cm	pit	dimensions, mm L	W	T	fig.
graver	5-10	B	31.5	21.6	4.5	3G
graver	25-30	H	32.7	18.3	3.5	3H
denticulate	30-35	C	28.7	16.1	2.3	3F
scraper	35-40	F	38.2	25.1	4.2	3I
scraper	35-40	B	38.0	27.8	6.7	3J
cutter	40-45	E	33.0	18.2	3.6	
scraper	45-50	H	21.4	10.5	2.6	
scraper	55-60	C	40.7	17.5	4.1	
scraper	60-65	E	33.6	22.5	7.8	

Note: artifacts classified as scrapers or cutters are utilized flakes, rather than formal tool types

Table 5. Lithic Flake Counts

level, cm	A	B	C	D	E	F	H	total
0-5							4	4
5-10	16	3	7	2		2	23	53
10-15	26	35	13	10	1	5	27	117
15-20	9	14	12	1	4	4	18	62
20-25	6	14	9	3	9	9	10	60
25-30		7	4	1	7	28	20	67
30-35		9	9	2	3	10	14	47
35-40		6	20	14	9	9	9	67
40-45		17	16	11	30	19	9	102
45-50			14	17	8	60	9	108
50-55		32	9	52	4	75	22	194
55-60		31	30	45	14	42	18	180
60-65		44	29	60	22	44	16	215
65-70		26	39	47	11	34	22	179
70-75		22	14	33	19	38	10	136
75-80		1	28	26	19	9	5	88
80-85			6	24	20			50
85-90			18	20	6			44
90-95				12	8			20
95-100				11	5			16
100-105					3			3
total	57	261	277	391	202	388	236	1812

Table 6. Flake Size Distributions
(percent of flakes)

level, cm	flake size, mm square					
	under 15	15-20	20-25	25-30	30-35	35-40
5-10	44.2	30.8	11.5	13.5		
10-15	56.8	28.8	10.2	2.5	1.7	
15-20	53.2	30.7	14.5	1.6		
20-25	51.7	25.9	13.8	5.2	1.7	1.7
25-30	59.7	32.8	4.5	3.0		
30-35	46.8	31.9	12.8	4.3	2.1	2.1
35-40	52.2	31.3	4.5	6.0	6.0	
40-45	57.8	29.5	3.9	5.9	2.9	
45-50	58.2	31.5	2.8	5.6	1.9	
50-55	68.7	18.0	7.7	3.6	1.5	0.5
55-60	67.8	23.9	6.7	0.6	1.0	
60-65	66.6	20.9	8.8	0.9	2.8	
65-70	65.9	25.7	6.7	1.7		
70-75	70.6	19.8	5.9	2.2	1.5	
75-80	77.3	15.9	3.4	3.4		
80-85	68.0	22.0	6.0	4.0		
85-90	63.6	22.8	13.6			
90-95	70.0	10.0	5.0	10.0	5.0	
95-100	68.8	31.2				

Table 7. Clayball Counts, Weights, and Sizes

level, cm	Pit							total	avg. wt., gm	total wt., gm	size range, mm diam.
	A	B	C	D	E	F	H				
0-5							2	2	1.5	3	15-25
5-10	9	3	6	7		6	35	66	6.2	407	15-40
10-15	33	31	59	56	1	38	58	276	5.9	1615	15-60
15-20	9	26	40	44	30	41	41	231	8.5	1965	15-80
20-25	4	74	43	39	40	137	62	399	6.9	2759	15-60
25-30		44	68	47	55	128	105	447	6.7	3000	15-50
30-35		124	74	42	42	69	91	442	6.2	2731	15-60
35-40		131	94	96	82	49	135	587	7.4	4372	15-70
40-45		299	49	88	248	78	95	857	6.4	5491	15-60
45-50		79	81	235	38	79	97	609	6.9	4173	15-60
50-55		176	97	265	27	116	40	721	6.8	4892	15-50
55-60		76	264	373	72	68	100	953	6.9	6551	15-60
60-65		48	99	222	43	61	66	539	6.9	3732	15-60
65-70		34	109	82	34	49	64	372	6.5	2431	15-60
70-75		13	27	58	63	42	35	238	5.9	1416	15-40
75-80		7	29	67	51	14	8	176	6.5	1146	15-60
80-85			26	46	27	4		103	6.2	643	15-40
85-90				22	12			34	7.1	240	15-35
90-95				17	14			41	5.9	240	15-35
95-100				26	14			40	6.7	269	15-35
100-105					1			1	3.0	3	20
total	55	1165	1165	1832	904	979	1034	7134	6.7	48097	15-80

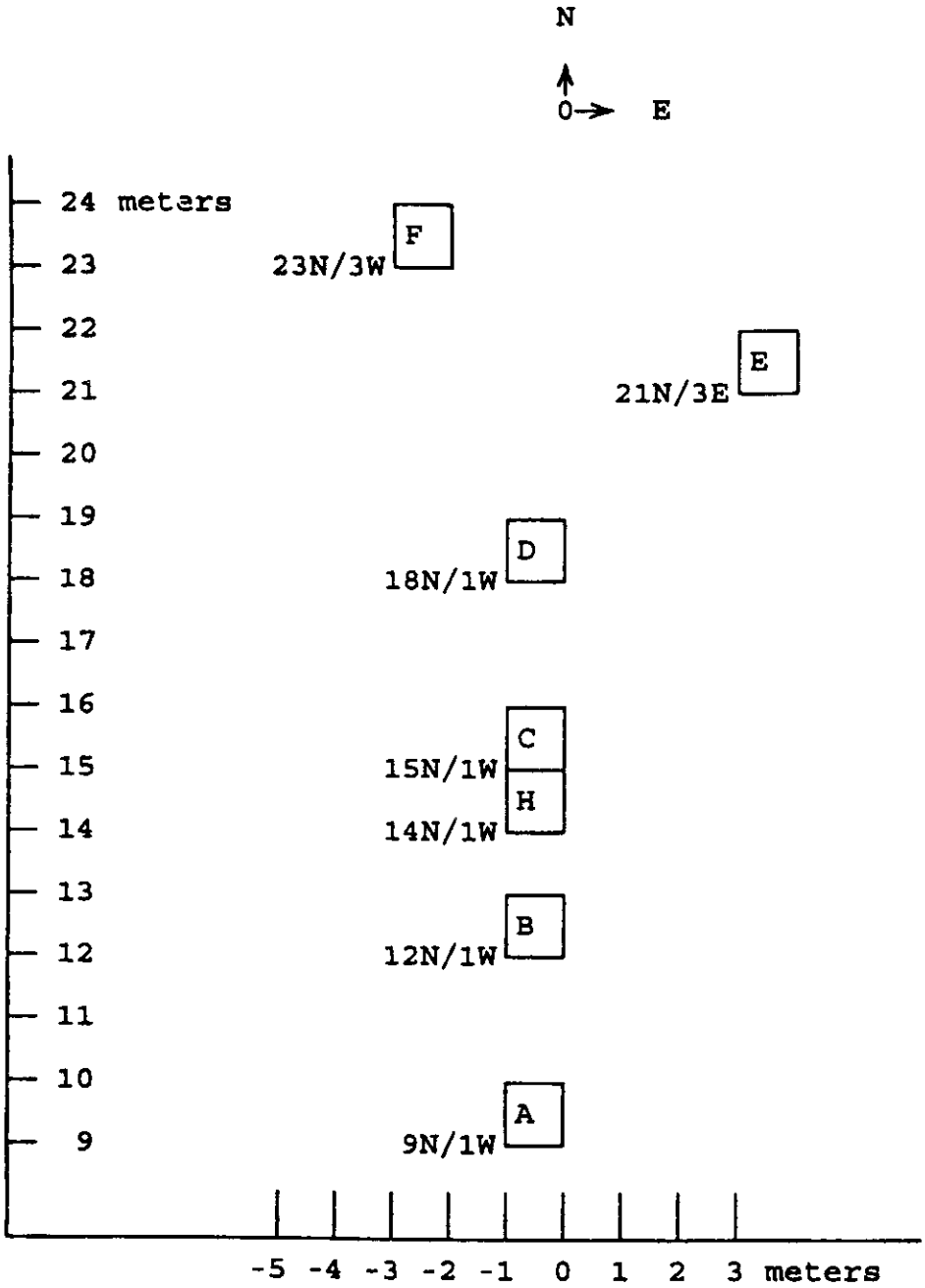
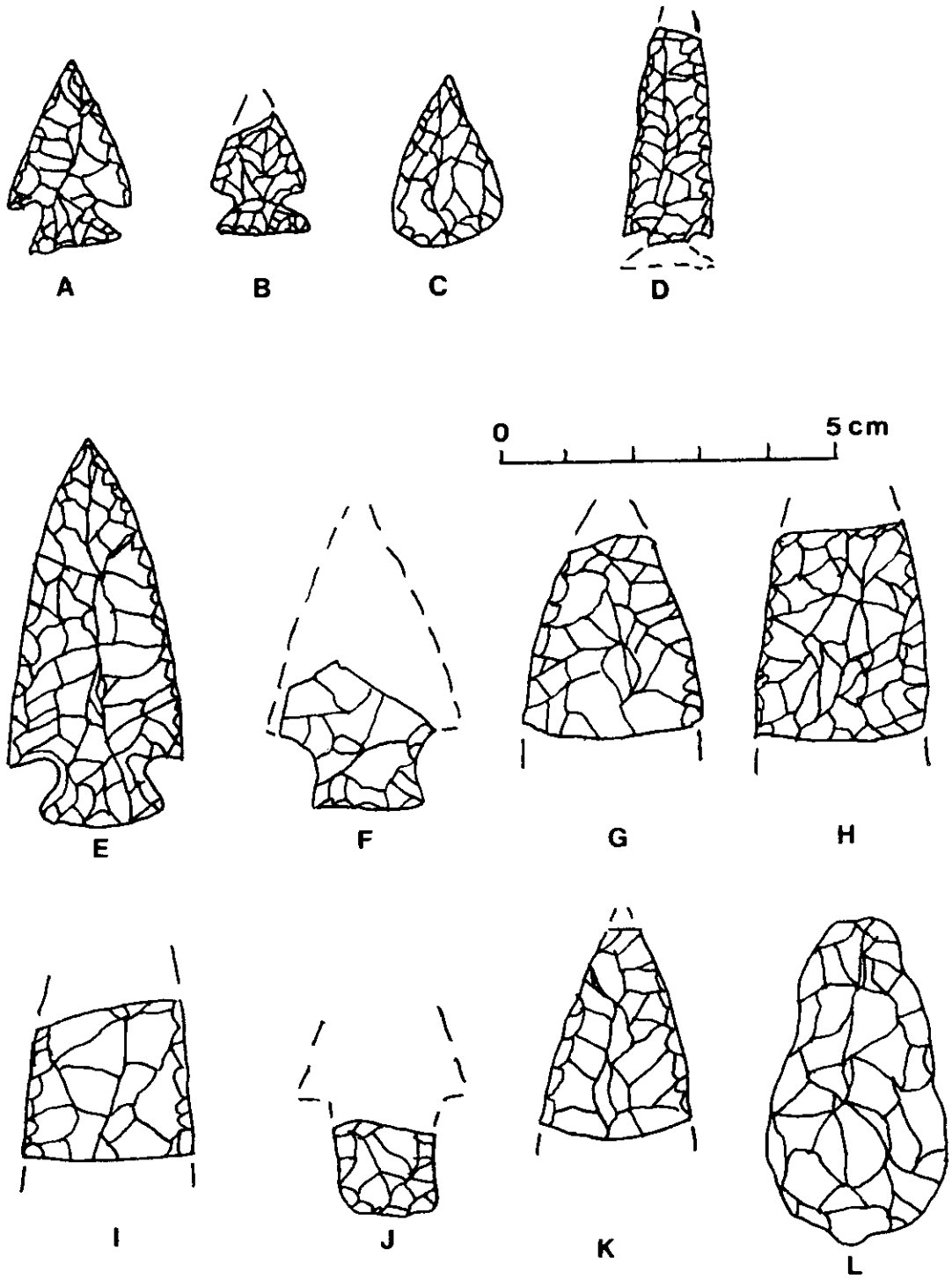
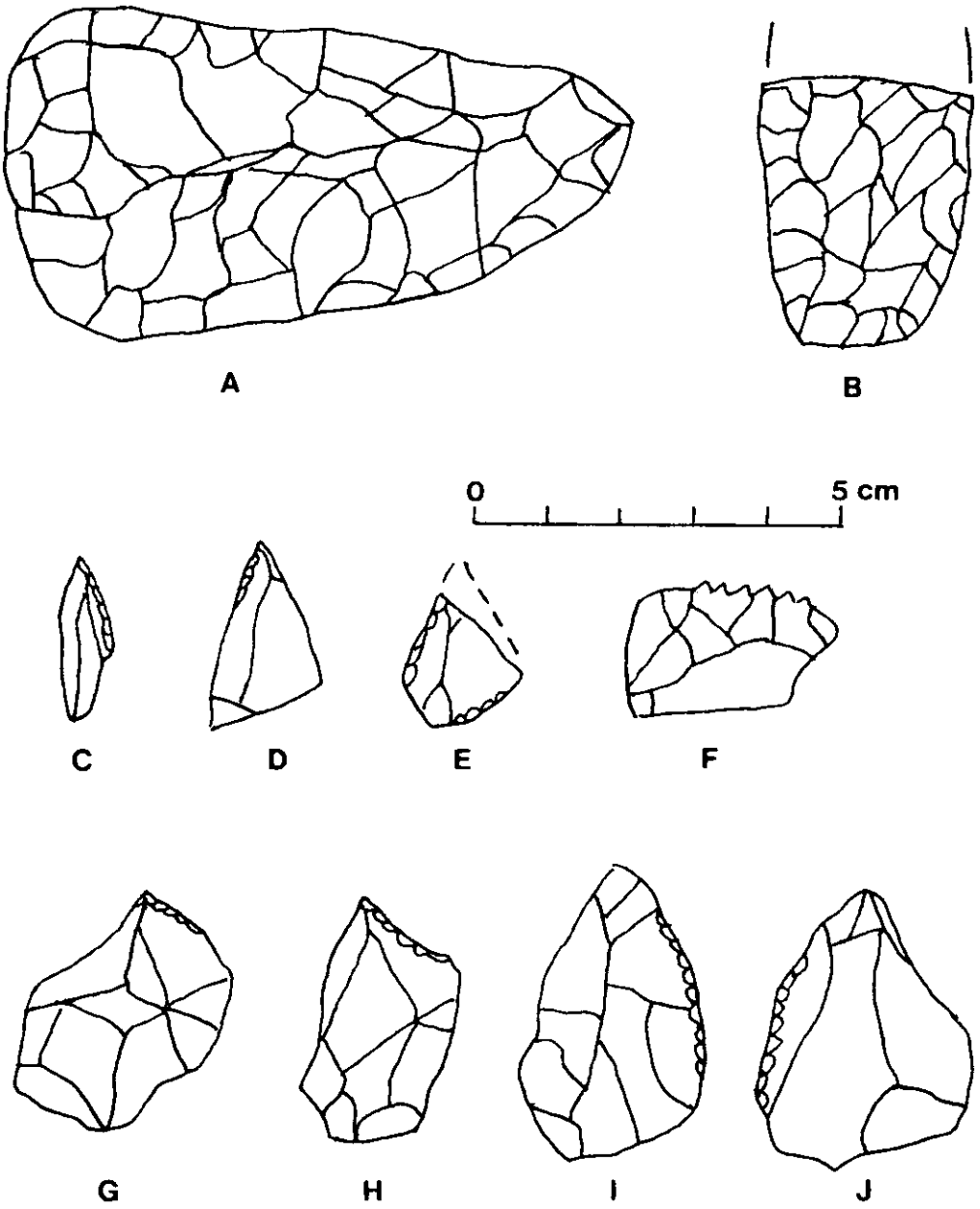


Figure 1. 41WH21 Excavation Layout



A,B,D – Scallorn; C – stemless arrow point; E – Ellis;
F – Bulverde; G to K – dart point fragments; L – preform

Figure 2. Projectile Points



A,B – preforms; C,D,E – unifacial arrow points; F – denticulate; G,H – gravers; I,J – scrapers

Figure 3. Lithic Artifacts

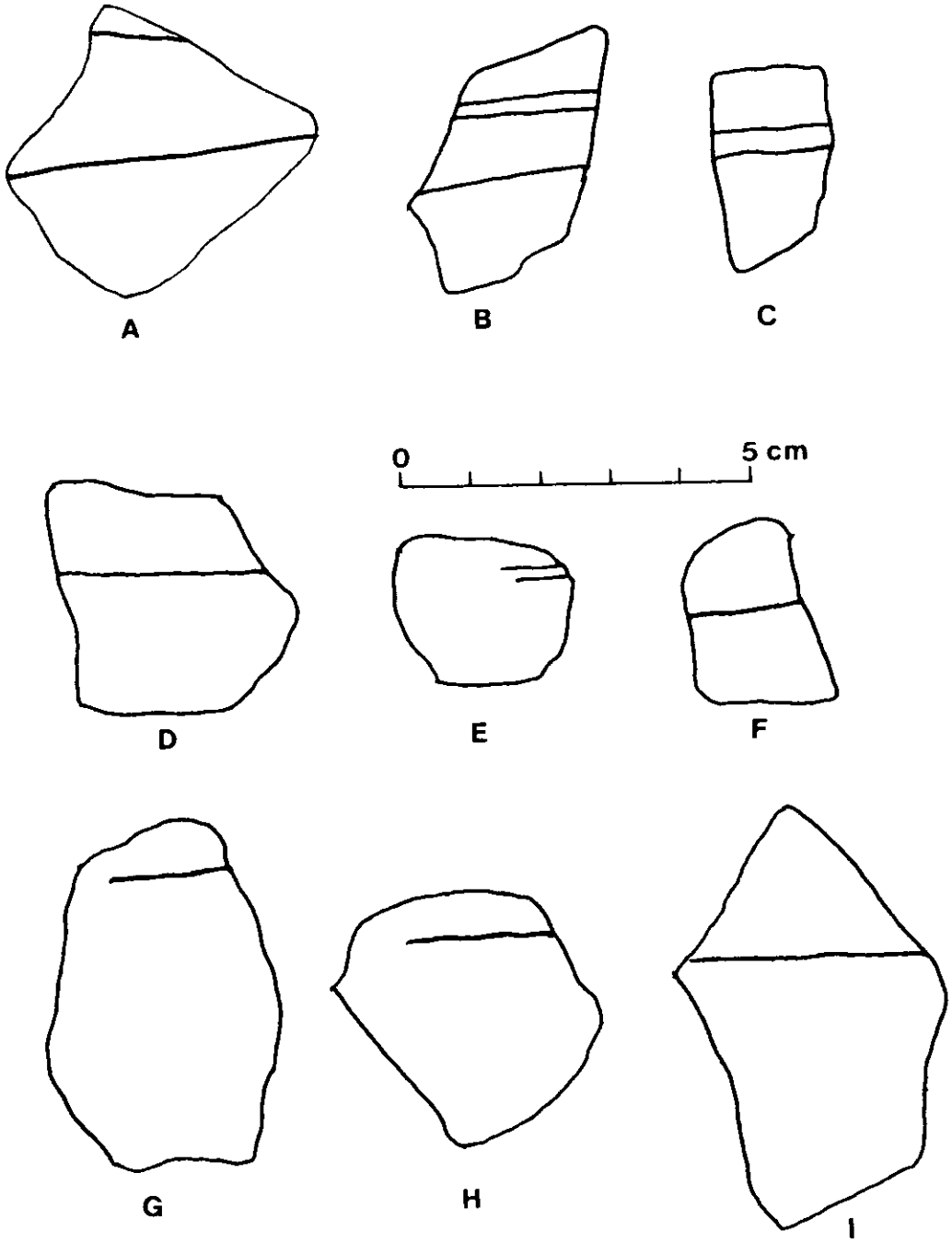


Figure 4. Goose Creek Incised Sherds
See Table 3 for details.

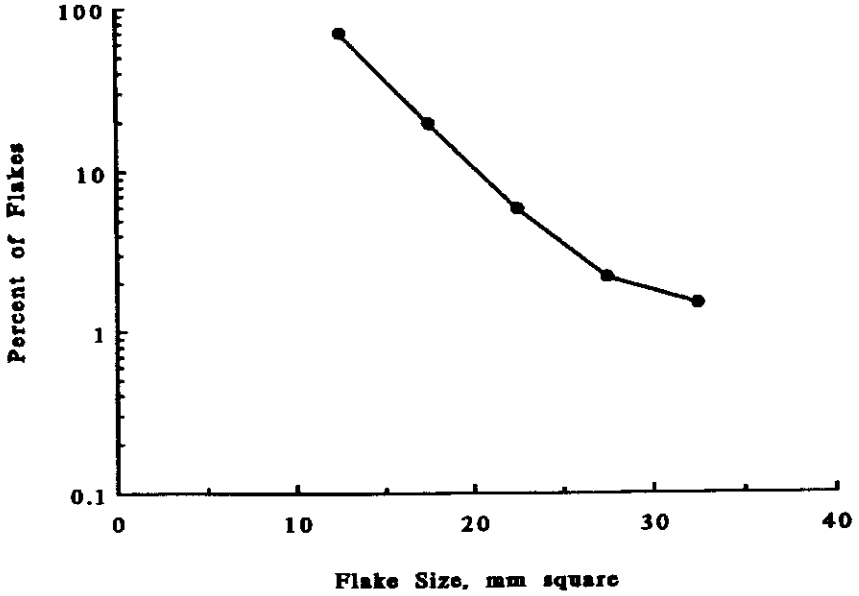


Figure 5. Flake Size Distribution, 70-75 cm level

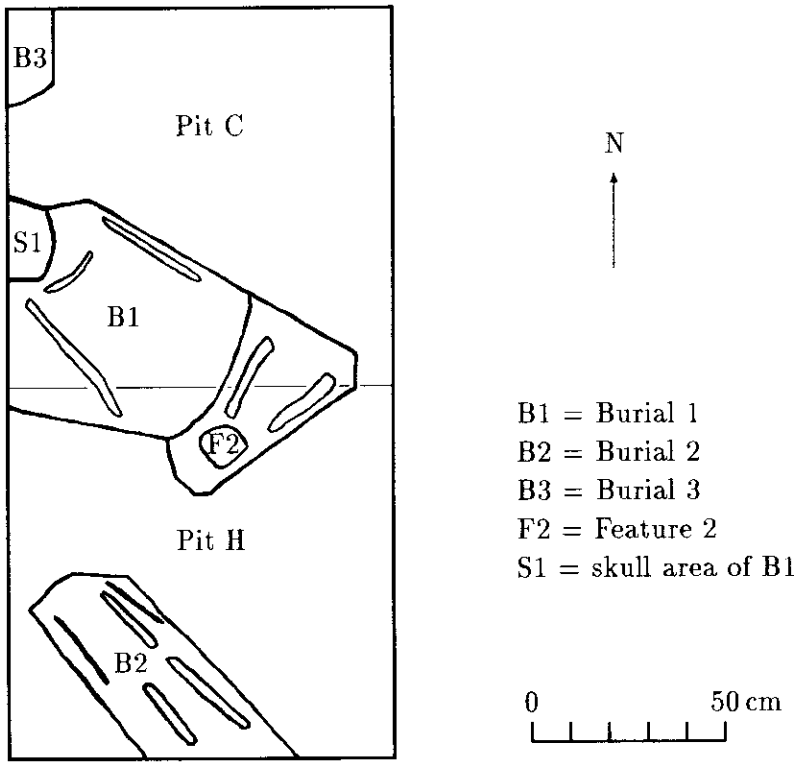


Figure 6. Plan View of Burials, with Pedestalled Areas

The Clovis Projectile Point in Southeast Texas

Leland W. Patterson

Introduction

The Clovis projectile point is of interest to the archeology of Southeast Texas as the earliest point type found in this region. Publication of Clovis points from Southeast Texas has been done in a rather diffuse manner. This article summarizes published data on Clovis points in this region. The possible origin and regional adaptation of the Clovis point are also discussed.

The Clovis point is a fluted point of lanceolate shape, usually with ground basal edges (Suhm and Jelks 1962:177; Turner and Hester 1993:91). Clovis point specimens are easy to identify because of distinctive attributes. The Clovis point has a nominal time range of 10,000-9,000 B.C., based on radiocarbon dating. There are no radiocarbon dates for Clovis points in Southeast Texas, because all specimens are from surface collections. Meltzer maintains an ongoing survey of Clovis points found in Texas (Meltzer and Bever 1995).

The Clovis point was first discovered in 1932 associated with mammoth remains near Dent, Colorado, but the term Clovis comes from the Blackwater Draw site near Clovis, New Mexico (Stanford 1991:1). Because of the initial discovery of Clovis points with mammoth remains at sites in the western United States, for many years Clovis points tended to be associated with a specialized adaptation for hunting of extinct megafauna. However, more recent data show that Clovis points are also associated with a broad-based hunting and gathering lifeway (Johnson 1977), with the Shawnee Minisink site in Pennsylvania (McNett 1985) being a good example. Meltzer (1993) has observed that the Clovis point can be associated with a wide range of adaptive patterns. It appears that Clovis should be viewed as a widespread technology rather than as a specific lifeway.

Origin of the Clovis Point

There is wide acceptance that the Clovis point originated in North America, and did not diffuse from Asia across the Bering Strait with immigrants to the New World. For many years, the standard model has been that the Clovis point was invented in the western United States by the first immigrants from Asia, and then diffused rapidly throughout North America in a few hundred years as a result of rapid population growth rate. There are major problems with this model, however. It is now established that human settlement of the New World was probably much earlier than the Clovis point starting date of about 10,000 B.C. The Monte Verde site (Dillehay 1984) date of 11,000 B.C. in South America (Chile) may indicate an entry of humans into the New World as early as 20,000 years ago.

There are few data to indicate a high population growth rate that would have caused the rapid spread of Clovis technology. For the standard model of start of the Clovis point in the west, Haynes (1966) used a population growth rate of 0.7-1.3% per year, and Martin (1973) used a population growth rate of 3.4% per year. As Whitley and Dorn (1993:627) note, however, Hassan's (1981:201-203) estimate of a population growth rate of 0.1% per year may be more realistic. Other published estimates of Pleistocene population growth rates are even lower, ranging from 0.0007 to 0.003% per year (Cohen 1977:52). Patterson (1991:18) has estimated a population growth rate of 0.02% per year for Indians of the Late Paleo-Indian and Early Archaic periods in Southeast Texas.

An alternate scenario to the standard model of the start of the Clovis point in the west is the invention of the Clovis point in the Southeastern United States, as suggested by Mason (1962). There is a much higher concentration of Clovis and other fluted point types in the Southeast

Woodlands than in the west, which may indicate invention of the Clovis point in the Southeast (Patterson 1994a:12). In this scenario, there would have been a rapid diffusion of Clovis technology throughout the United States into previously populated areas (Patterson 1994a:13). An increasing number of archeologists support this alternate scenario for the origin of the Clovis point (Stanford 1991:9; Bryan 1991:22). As an analogy, rapid diffusion of technologies has been demonstrated for the Archaic period in the Southeast Woodlands (Patterson 1994b). There may have been movement of people as well as diffusion of ideas on technology.

The location of the origin of the Clovis point should become clearer as more radiocarbon dates are obtained for Clovis points in the eastern United States. There are already indications that the Clovis point may be as old in the east as in the west.

Clovis Points in Southeast Texas

A summary of Clovis points found in Southeast Texas is given in Table 1, and geographic distribution is shown in Figure 1. Note in Table 1 that Clovis points from 41GV101 and 41HR64 are isolated finds not related to occupation sequences for the sites. In the 21-county area of Southeast Texas, there are seven counties with Clovis points. Except for the McFaddin Beach area (41JF50) near Beaumont, Clovis points are not numerous in Southeast Texas. The number of Clovis points in each county may at least partially reflect the amount of archeological survey work done in each area. Aside from McFaddin Beach, Harris County has the most Clovis points (8). Harris County is the most surveyed county of the region.

McFaddin Beach (41JF50) is not a specific site, but rather appears to be a series of sites along several miles of shoreline. Aside from Clovis points, many other Paleo-Indian and Archaic period projectile points have been found at McFaddin Beach (Long 1977; Turner and Tanner 1994). At least some Clovis points from McFaddin Beach may be related to sites with long occupation sequences.

The highest concentration of Clovis points in Texas is in Southeast Texas (Meltzer and Bever 1995: Table 1). This may indicate the area of initial introduction of the Clovis point into Texas from the Southeast Woodlands. The McFaddin Beach area of Southeast Texas may have been a staging area for dispersal of Clovis technology throughout Texas, similar to the model proposed by Anderson (1996:36) for areas of high concentrations of Clovis points in the Southeast, such as northern Alabama and southern Virginia (Brennan 1982: Figures 1,5).

Clovis Adaptation in Southeast Texas

There is no evidence that use of the Clovis point in Southeast Texas was associated with hunting of extinct megafauna. There is some evidence that the Clovis point is related to a broad-based hunting and gathering lifeway at specific sites or defined areas in this region. Clovis points can be related to long occupation sequences with a hunting and gathering lifeway at sites 41HR5 (Wheat 1953), 41HR343 (Patterson et al. 1992a), 41HR571 (Patterson 1986), 41HR731 (Patterson et al. 1992b), 41FB249 (Patterson 1997a,b), and perhaps 41JF50 (McFaddin Beach). Southeast Texas represents the western boundary of Clovis adaptation in the Southeast Woodlands. Southeast Texas is an interface between the Southeast Woodlands and the Southern Plains.

Clovis points found in Southeast Texas are commonly made of exotic cherts from the Edwards Plateau of Central Texas. It has not been determined how the use of exotic cherts for Clovis points in Southeast Texas is related to mobility and trade patterns. It is often assumed that the use of exotic cherts for Clovis points throughout the United States is related to a lifeway with high mobility (Meltzer 1993:305).

Summary

This article has presented a summary of current data on the Clovis point in Southeast Texas. It is proposed that the high concentration of Clovis points in the McFaddin Beach area in the southeast corner of Southeast Texas may represent the location of initial introduction of the Clovis point into Texas from the location of origin of the Clovis point in the Southeast Woodlands. The McFaddin Beach area would then have served as a staging area for dispersal of Clovis technology throughout Texas.

Research on the Clovis point in Southeast Texas is rather recent, with most data on this subject obtained in the last 20 years. The Clovis point is a subject of continuing interest in relation to early man in the New World.

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Table 1. Clovis Points in Southeast Texas

county	site	no.	references
Brazoria	IF	1	Chandler and Rogers 1995
Fort Bend	41FB249	2	Patterson 1997a,b
Galveston	41GV101 (IF)	1	Huebner 1988
Harris	41HR5	1	Wheat 1953, Doering site
Harris	41HR64 (IF)	1	Ring 1994
Harris	41HR343	1	Patterson et al. 1992a
Harris	41HR571	2	Patterson 1986
Harris	41HR731	1	Patterson et al. 1992b
Harris	IF	1	Suhm and Jelks 1962:177
Harris	IF	1	Chandler and Rogers 1997
Jefferson	41JF50	70+	Long 1977, Turner and Tanner 1994
Montgomery	IF	3	Chandler and Rogers 1995
Walker	IF	1	Chandler 1996

IF: isolated find

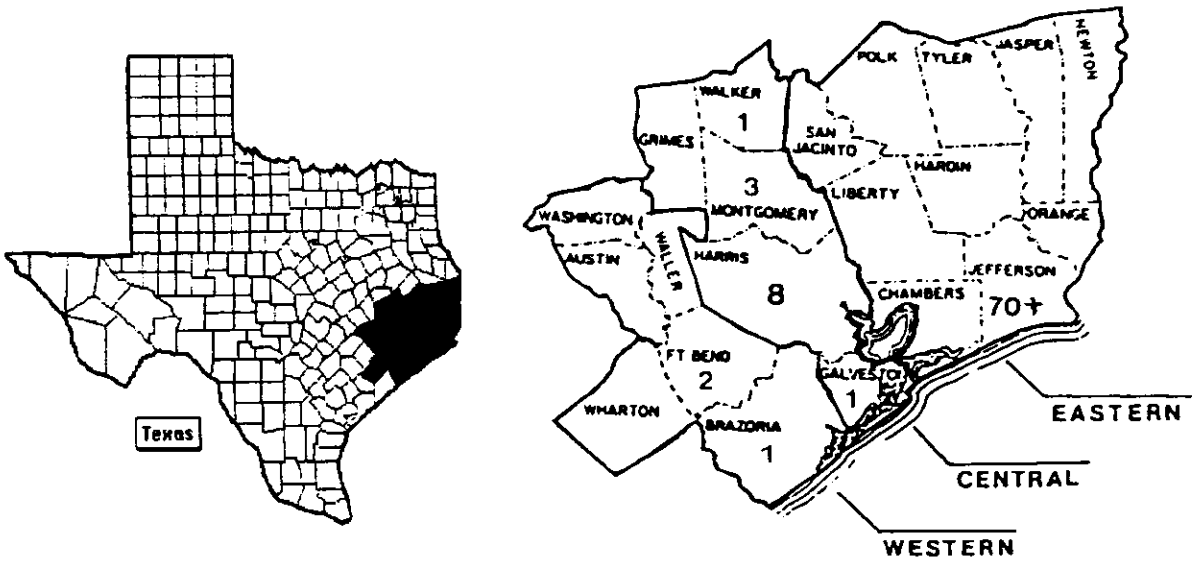

Figure 1. Distribution of Clovis Points in Southeast Texas