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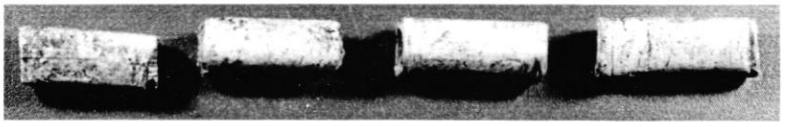
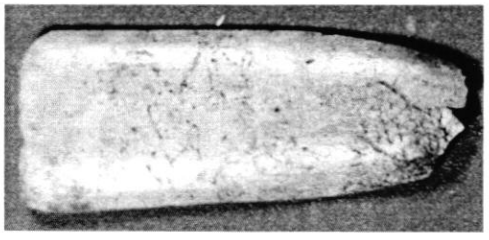
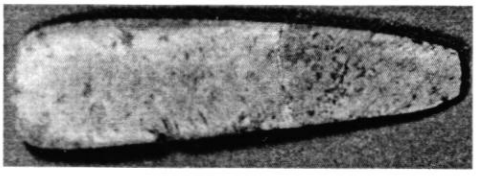


Bone Artifacts from the Bowser Site, 41FB3





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Contents

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Additional Data for the Bowser Site, 41FB3, Fort Bend Co., Texas

Leland W. Patterson

Introduction

The Houston Archeological Society has done extensive excavations at the Bowser site, 41FB3, in Fort Bend County (Patterson et al. 1993, 1998). This site has a component that is part of the Late Archaic Mortuary Tradition of the western part of Southeast Texas, which includes 13 sites in Austin, Fort Bend, and Wharton Counties. A summary of this tradition has been given by Patterson (2000).

Following publication of the last report for the Bowser site, additional archeological data have been obtained. These new data cover additional radiocarbon dates, additional artifacts, restudy of seed beads, restudy of a ground stone object, and general type of human diet based on stable carbon isotope ratios of human bone.

Radiocarbon Dates

A total of nine radiocarbon dates have now been obtained for 41FB3, including six dates for the Upper Burial Group and three dates for the Lower Burial Group, as shown in Table 1. There is a calibrated date range of 790-60 BC for the Upper Burial Group, and a calibrated date range of 1510-1420 BC for the Lower Burial Group. Both burial groups have date ranges within the Late Archaic period (1500 BC-AD 100). The Upper Burial Group covers about the last half of the Late Archaic period, which is the same time interval as the Early Woodland period of the Eastern Woodlands. There appears to be a temporal gap of about 600 years between the Upper and Lower Burial Groups. Thus, site 41FB3 was used as a cemetery during two different time intervals.

As noted in the last report for 41FB3 (Patterson et al. 1998), there are significant differences in burial practices of the Upper and Lower Burial Groups. All burials of the Lower Burial Group are extended, prone, with head direction to east, and without grave goods. In contrast, most burials of the Upper Burial Group are supine, extended, with head directions predominantly to north, and with many grave goods. The Upper Burial Group also has a few bundle burials, and flexed and semiflexed burials. Flexed Burial 35 and semiflexed Burial 36 occur in the latter part of the time interval for the Upper Burial Group. Flexed and semiflexed burials did not completely replace extended burials, however. The latest date is for Burial 21, which is an extended burial.

Burial 21 with a copper pin has a calibrated radiocarbon date of 60 BC, which is at the end of the Early Woodland period of the Eastern Woodlands. A possible trade route for the copper pin may have been from the Adena culture in the Midwest through the Tchula culture of the middle Mississippi River Valley and then into Texas. Both Adena and Tchula cultures had copper artifacts, with the source of copper in the upper Great Lakes area.

Additional Artifacts

Additional artifacts have been found during analysis of skeletal remains, as shown in Table 2. All of these specimens are from the Upper Burial Group. A revised tabulation of grave goods from intact burials is given in Table 3, as a replacement for Table 31 of the last report (Patterson et al. 1998).

Several fragments of bone pins, such as shown in Figure 1, and long-bone implements, such as shown in Figure 2, were found during skeletal analysis. As previously noted (Patterson et al.

1998:13), all bone pins and long-bone implements appear to have been purposefully broken when used as grave goods.

Additional bone beads and bead fragments have been found. Some are made of mammal bone, such as shown in Figure 3, and some are made of bird bone. Lengths of these specimens range from 12 mm to 22 mm, and diameters range from 6 mm to 8 mm.

Additional short bone artifacts were found with skeletal materials of Burials 6 and 11 (Figure 4). Both specimens are Type 2 (Patterson et al. 1998:14) with one tapered end with a rounded tip. Dimensions for the Burial 6 specimen are: L=44.4 mm, W=11.9 mm, T=2.7 mm. Dimensions for the Burial 11 specimen are: L=43.6 mm, W=17.1 mm, T=3.4 mm. The Burial 11 specimen was found with the left ribs.

A stingray spine (Figure 5) was found at the right leg of Burial 21. A well-made small prismatic blade (Figure 6) was found with Burial 21, probably associated with burial fill rather than with grave goods. A total of 92 small prismatic blades have been previously found at this site (Patterson et al. 1998:8). An additional shark tooth was found for Burial 13.

Three tubular fragments of worked bone were found, all with one rounded end and one broken end. The specimen from Pit AC (20-30 cm) has partially drilled holes at each end. The specimen from Burial 21 (Figure 7) has a hole drilled longitudinally from the rounded end.

Two additional marine shell pendants were found during skeletal analysis. The specimen from Burial 13 (Figure 8) was associated with the skull. It is a Type 3 pendant (Patterson et al. 1998:11) with oval outline, length of 34.9 mm, width of 28.4 mm, and has a single hole drilled at center. The specimen from Burial 35 (item 18 of grave goods) shown in Figure 9 is a Type 2 pendant (Patterson et al. 1998:11) with a tapered end. This specimen has two drilled holes at center, and dimensions are: L=148 mm, W=54.7 mm, T=3.1 mm.

Restudy of Seed Beads – Bill McClure

In the last report for 41FB3 (Patterson et al. 1998:18), the presence of clusters of beads made of seeds was reported for Burial 35 at various parts of the body. Seed beads also have been reported from a burial in another cemetery at 41WH39, Wharton County, Texas (Vernon 1989:28). After publication of the last report for 41FB3, a question was raised. How could seeds, which were used as beads, survive in prevailing soil conditions when naturally occurring seeds do not?

Specimens from both sites were obtained and they turned out to be identical rather than from two distinct plants of the Family Boriginaceae as reported. A search for an ethnobotanist who had experience with seed beads located Lee Newsom of Southern Illinois University at Carbondale. After receiving the items from both sites, Newsom reported that they were neither seeds nor beads (Newsom personal communication 1999). The items are the thallus/bodies of calcareous algae, probably of the genus *Cymopolia* of the Order Dasycladales. These algae lived in saturated conditions of marine or brackish water (Wray 1977).

These tiny objects (diameter = 2.9 mm) are too fragile to have been transported by wind or water and apparently had not been carried by people. They had formed in the soil where they were found during the excavations. This brought a new question. How did the objects get to the site? The soil structure at 41FB3 appeared to be a remnant of a levee created adjacent to an ancient channel of the Brazos River (Van Siclen 1985). However, due to requirements necessary for the algae to live, a marine or brackish water condition had to exist. Thus, long before the site became a cemetery, during the Late Pleistocene or even earlier, there was a sea level stand that created conditions favorable for the algae. The Wharton County site is in the Colorado River drainage and the two sites may have similar geological records as well as cultural affinities.

Additional Faunal Materials

Some additional faunal materials were found in fill dirt associated with human skeletons. Bill McClure examined these additional materials but did not find any animal species in addition to those given in the previous site reports (Patterson et al. 1993, 1998).

Restudy of Ground Stone Object

During excavations at 41FB3, a spherical object of hard, sandy material was found which had a nipple and a small hole in the nipple (Patterson et al. 1998:16). This specimen was judged to be an artifact made of ground sandstone. During later excavations at site 41FB28 (Patterson et al. 2000), an object of the same shape was found, but made of soft, damp material. When cut open, this specimen was found to be an insect egg case. It became apparent that the specimen from 41FB3 was also an insect egg case, but was a hard, sandy material when dry.

Human Diet at 41FB3

Faunal remains from 41FB3 indicate a wide variety of mammals, birds, amphibians, and fish were utilized by the occupants of this site (Patterson et al. 1993:16-19, 1998:19-20). The complete diet of these hunter-gatherers cannot be reconstructed, however, because of little preservation of floral remains that may have been a significant part of the diet. The C13 to C12 ratio of carbon isotopes in human bone can be used as an indication of the general type of diet (Price and Feinman 1993:182). For example, a large proportion of maize in the diet would give a less negative C13/C12 ratio for human bone (about -8) than a diet based on C3 foods, such as nuts and deer (about -24). A diet of marine foods would have an intermediate range of C13/C12 values (about -10 to -15). Riverine foods would have a highly negative C13/C12 ratio like C3 foods (Huebner 1994: Table 10.1).

For inland Indians who did not consume marine foods, Huebner and Boutton (1992) have discussed two type of foods. These diet types are C3, where humans consumed C3 plant types and animals that consumed C3 plant types, and C4, where humans consumed C4 plant types and animals that consumed C4 plant types. In Southeast Texas C4 plant types are mainly grasses and C3 plant types include nuts, acorns, and plant types other than grasses.

Based on an average C13/C12 ratio of -19.2 for human bone, Huebner and Boutton (1992:46) have calculated that the diet at the Ernest Witte site (41AU36) was 84% C3 foods. Site 41AU36 is about 11 km from site 41FB3. Site 41FB3 has an average C13/C12 ratio for human bone of -19.7, which is similar to that of the Ernest Witte site. The value of -19.7 substituted into the formula of Huebner and Boutton gives a human diet at site 41FB3 which was 87% C3 foods. The bulk of the human diet at 41FB3 was based on the C3 diet of terrestrial and riverine fauna and C3 plant materials such as nuts and acorns. The area where 41FB3 is located is well known for pecan trees.

Summary

This article has summarized additional data for the Bowser site, 41FB3, that have been obtained after publication of the last report on this site (Patterson et al. 1998). The Upper Burial Group of this site has a calibrated date range of 790-60 BC, and is associated with the Late Archaic Mortuary Tradition of western Southeast Texas (Patterson 2000). There is also a Lower Burial Group with a calibrated date range of 1510-1420 BC.

Additional artifacts found during skeletal analysis include bone pin and long-bone implement fragments, a shark tooth, a stingray spine, two marine shell pendants, a small prismatic blade,

bone beads, two short bone artifacts, and miscellaneous worked bone artifacts. Further study has shown that items previously classified as seed beads and a ground stone object (Patterson et al. 1998:16,18) are not artifacts but items formed by nature. Additional animal bones found during skeletal analysis do not represent any species not previously reported.

Stable carbon isotope ratios (C13/C12) obtained with radiocarbon dates for human bone show that a high proportion of human diet for this population was C3-type foods, such as nuts and deer.

Analysis of artifacts from the Bowser site is now complete. The Upper Burial Group is especially important because of the large variety and amounts of grave goods, including some items obtained by long-distance trade.

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Table 1. 41FB3 Radiocarbon Dates

group	burial	lab. number	radiocarbon date, BP	calibrated date, BC(A)	C13/C12 ratio
upper	21	GX–24575	2075 ±115	60	−19.8
upper	35	GX–24613	2150 ±120	180	−19.5
upper	36	GX–25330	2240 ±120	360	−19.3
upper	10	GX–24500	2490 ±75	540	−19.1
upper	(B)	I–16513	2580 ±130	790	
upper	19	GX–25537	2230 ±160	350	−20.2
lower	1	I–18946	3160 ±95	1420	
lower	14	GX–24383	3220 ±130	1500	−20.4
lower	(B)	I–17333	3230 ±170	1510	

A – Stuiver and Pearson 1993, Pearson and Stuiver 1993
B – original excavations, Patterson et al. 1993

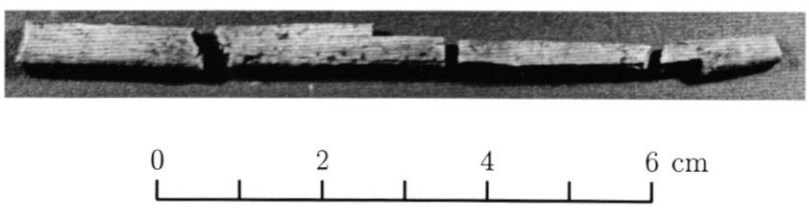


Figure 1. Bone Pin Fragments

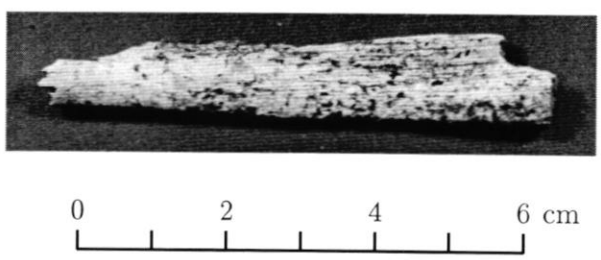


Figure 2. Long-Bone Implement Fragment

Table 2. Additional Artifacts

location	type	details
burial 6	short bone artifact	type 2
burial 8	bird bone bead	ends broken
burial 9	long-bone implement	basal segment
burial 10	bone pin	1 fragment with groove
burial 10	bone pin	4 refitted fragments
burial 10	bone pin	3 refitted fragments
burial 10	bone pin	tip segment
burial 10	long-bone implement	extra piece for 18D
burial 11	short bone artifact	type 2, at left ribs
burial 13	shark tooth	
burial 13	marine shell pendant	type 3, with skull
burial 21	stingray spine	at right leg
burial 21	prismatic blade	12 mm width
burial 21	worked bone	round end with hole
burial 29	bone bead	L-18.3 mm, D-8.0 mm
burial 29	bone pin	1 fragment
burial 29	long-bone implement	5 fragments
burial 29	bone beads	5 fragments
burial 30	long-bone implement	2 refitted segments
burial 35	long-bone implement	3 fragments
burial 35	worked bone	hollow, rounded end
burial 35 (18)	marine shell pendant	type 2
pit AC,10-20 cm	bone beads	1 whole, 1 fragment
pit AC,10-20 cm	bone pins	4 fragments
pit AC,10-20 cm	long-bone implement	3 fragments
pit AC,20-30 cm	bone beads	4 whole
pit AC,20-30 cm	bone beads	fragments of 7
pit AC,20-30 cm	long-bone implement	2 fragments
pit AC,20-30 cm	worked bone	round end, 2 holes
pit BK,60-70 cm	long-bone implement	1 segment with groove

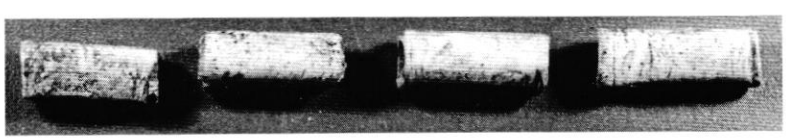
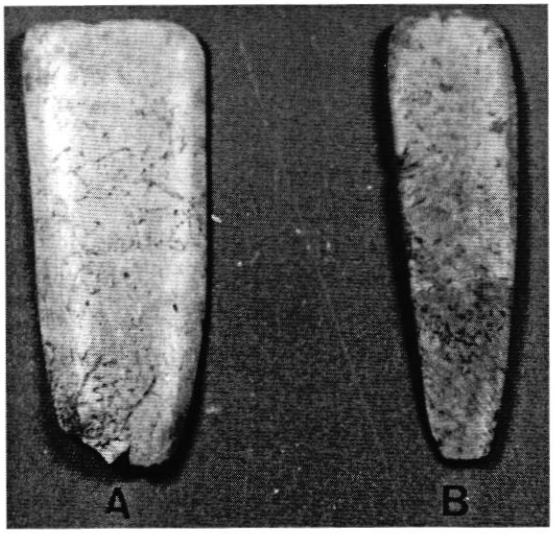


Figure 3. Bone Beads

Table 3. Summary of Grave Goods with Intact Burials

burial	total items	items
3	2	split chert cobble, long-bone implement
5	22	2 shark teeth in fill, shell head ornament, 10 shell pendants, 6 long-bone implements, bone pin, 2 short bone artifacts
7	18	shell head ornament, shell pendant, 2 tubular shell beads, 4 long-bone implements, 2 bone pins, 2 short bone artifacts, 6 shark teeth
8	2	long-bone implement, bone bead(?)
9	10	shell head ornament, 7 shell pendants, 2 long-bone implements
10	39	12 shell pendants, 3 boatstones, 5 Olivella beads, 3 tubular shell beads, 5 long-bone implements, 10 bone pins, short bone artifact
11	5	boatstone, shell pendant, 2 tubular shell beads, short bone artifact
12	1	shell pendant
13	20	18 shark teeth, bone projectile point, marine shell pendant
15	2	asphaltum, long-bone implement
15 B	2	asphaltum, shell pendant
17	1	shell pendant
21	8	3 shell pendants, short bone artifact, copper pin, stingray spine, prismatic blade, worked bone
22	1	mussel shell
23	1	bone pin
24	2	2 large pieces of asphaltum
26	3	2 short bone artifacts, shark tooth
27	1	sandstone tool
28	3	3 sandstone tools
29	12	short bone artifact, 3 long-bone implements, chert core, 6 bone beads, bone pin
30	2	mussel shell, long-bone implement
32	9	9 shell pendants
35	18	6 shell pendants, 2 long-bone implements, mussel shell, 3 sandstone tools, 5 Ellis points, worked bone
36	3	mussel shell, red jasper pebble, sandstone tool
37	1	mussel shell
39	6	boatstone, 2 shell pendants, short bone artifact, 2 columella artifacts



A – Burial 11, B – Burial 6

Figure 4. Short Bone Artifacts

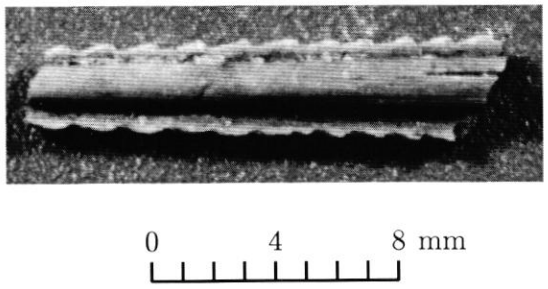


Figure 5. Stingray Spine

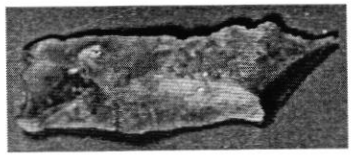


Figure 6. Prismatic Blade

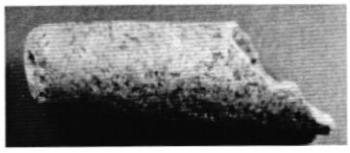


Figure 7. Worked Bone

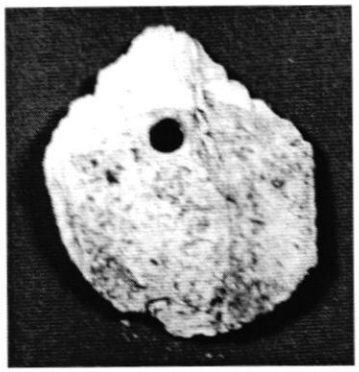


Figure 8. Marine Shell Pendant, Type 3, Burial 13

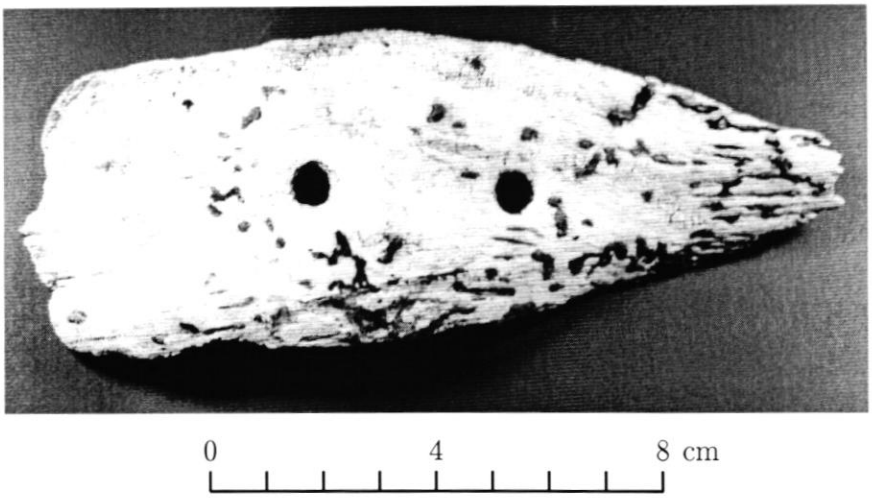


Figure 9 Marine Shell Pendant, Type 2, Burial 35

Gary and Kent Points in Southeast Texas

Leland W. Patterson

Introduction

This article discusses the chronologies and geographic distributions of Gary and Kent dart points in Southeast Texas. These two point types are the most common dart point types in this region (Patterson 1996a: Table 8). There are two reasons why Gary and Kent points are so common in Southeast Texas. These point types were used in this region for a long time interval, from the Middle Archaic (3000-1500 BC) through the Late Prehistoric (AD 600-1500) periods, an interval of about 4500 years. Gary and Kent points are particularly numerous during the Late Archaic (1500 BC-AD 100) and Early Ceramic (AD 100-600) periods, when there were high population levels (Patterson 1996a: Figure 10).

These two point types can be regarded as the Gary-Kent series, because of morphological overlaps (Patterson 1996b) and occurrence together at many sites. As shown in Table 1, of sites having these point types, Gary and Kent points occur together at about half of the sites.

Gary and Kent points are described in detail by Suhm and Jelks (1962) and Turner and Hester (1993). The Gary point has a triangular body shape, a contracting stem, and squared shoulders. The Kent point has a triangular body, straight stem edges, and squared shoulders. The Gary-Kent series seems to represent the evolution to standardized technology from Early Archaic stemmed point types, including Early Stemmed, Wells, and Carrollton.

My experience in flintknapping is that Gary and Kent point forms are fairly easy to make. This would have been an important factor for Indians using local chert types that can vary in knapping quality. Local type cherts from the Brazos and Colorado River Basins are usually tough, and require heat treatment of flake blanks made of these materials before bifacial reduction can be done in a good manner to manufacture dart points. Heat treatment of chert lowers the tensile strength of this type of material. The quality of workmanship on Gary and Kent points is highly variable, depending on the quality of material being worked. Gary and Kent points are often made of petrified wood, especially in the eastern part of Southeast Texas (Kindall and Patterson 1986), where petrified wood was the main type of lithic raw material available.

Southeast Texas is an interface between the Southern Plains (Central Texas) and the Southeast Woodlands. The Gary-Kent series represents a technological tradition of the Southeast Woodlands. Justice (1987: Map 81) shows Gary points as far east as Alabama.

All data used here are from the 1998 updates of the Inland (Patterson 1989a) and coastal margin (Patterson 1989b) computerized data bases for Southeast Texas.

Chronology

In Southeast Texas, use of the Gary-Kent dart point series started in the Middle Archaic period (3000-1500 BC), and use of these point types continued through the Late Prehistoric period (AD 600-1500). Some excavated sites with points of these types being used in the Middle Archaic include 41AU36 in Austin County (Hall 1981), 41FB42 (Patterson et al. 1993), and 41FB223 (Patterson et al. 1994) in Fort Bend County, and 41HR5 (Wheat 1953, Doering site) and 41HR315 (Patterson 1980) in Harris County. Examples of the latest use of Gary and Kent points in the Late Prehistoric period are sites 41FB224 in Fort Bend County (Patterson et al. 1996), and 41HR5 (Wheat 1953, Doering site), 41HR273 (Ensor and Carlson 1991), and 41HR315 (Patterson 1980) in Harris County.

Gary and Kent points tended to be smaller in the Early Ceramic and Late Prehistoric periods (Ensor and Carlson 1991; Patterson 1980). The spear was used concurrently with the bow and arrow in inland Southeast Texas in the Late Prehistoric period. The spear was not used on the coastal margin of this region after the Early Ceramic period, however, with only the bow and arrow used as a weapon system on the coastal margin in the Late Prehistoric period (Aten 1983:306).

Geographic Distributions

Distributions of sites with Gary and Kent points are given by county in Table 2. Distributions of numbers of Gary and Kent points by county are given in Table 3. Maps of geographic distributions of numbers of points are shown in Figure 1 for Gary points and Figure 2 for Kent points. There are many more sites with Gary and Kent points in Harris County than in other counties because much more archeological survey work has been done in Harris County.

Distributions of Gary and Kent points for the western, central, and eastern zones of Southeast Texas are given in Table 4, for both the inland and coastal margin parts of this region. There are many more sites and total numbers of points for the inland part of Southeast Texas than for the coastal margin. This is because the inland part of this region is larger than the coastal margin area, and because Gary and Kent points were used for a longer time interval in the inland part of Southeast Texas than on the coastal margin. Gary and Kent points were only used in the Late Archaic and Early Ceramic periods on the coastal margin, but not also in the Middle Archaic and Late Prehistoric as was done inland. Also, the coastal margin is a lithic-poor area where dart points made of bone were often used instead of dart points made of stone, such as Gary and Kent (Aten 1983:262).

As shown in Table 4, there is not much variation in the number of sites with Gary and Kent points in different zones, except for the effect of the large number of sites in Harris County in the central zone. The numbers of projectile points in the various zones gives a different picture, however. The numbers of Gary and Kent points are about the same for the eastern and central zones, but there are sharp dropoffs in the numbers of Gary and Kent points in the western zone. The western zone is the area of highest mixing of projectile points types that represent technological traditions of the Southern Plains (Central Texas) and the Southeast Woodlands. This mixing of projectile point types of different regional traditions in the western zone results in sites in this zone having fewer Gary and Kent points, because other point types were also being used at the same time.

The numbers of Gary and Kent points in the eastern zone of Southeast Texas are probably understated, because less survey work has been done in the eastern zone than in the central and western zones.

Data on the numbers of Gary and Kent points at individual sites can be obtained from the computerized data bases for the inland (Patterson 1989a) and coastal margin (Patterson 1989b) parts of Southeast Texas. References for published reports on sites with Gary and Kent points can then be obtained by using the site number cross index of the bibliography for Southeast Texas (Patterson 2002).

Summary

This article has presented data on Gary and Kent dart points in Southeast Texas. These are the most common types of dart points in Southeast Texas. The Gary-Kent series of dart points was used for a long time interval of about 4500 years, from the Middle Archaic period (3000-1500 BC) through the Late Prehistoric period (AD 600-1500). Gary and Kent points are technological

traditions of the Southeast Woodlands. There are sharp dropoffs in the numbers of Gary and Kent points in the western zone of Southeast Texas, compared to the central and eastern zones, because other dart points types were also being used in significant quantities during the same time periods in the western zone.

This study is a good example of the application of regional computerized data bases. All of the data used here was easily obtained by a series of data base queries.

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Table 1. Occurrence of Gary and Kent Points in Southeast Texas

	inland		coastal	
	sites	%	sites	%
both Gary and Kent	97	53.9	16	48.5
Gary only	50	27.8	5	15.2
Kent only	33	18.3	12	36.3

Table 2. Gary and Kent Site Distributions by County

	inland sites		coastal sites		total sites	
county	Gary	Kent	Gary	Kent	Gary	Kent
Austin	3	4			3	4
Brazoria		2		1		3
Chambers			7	9	7	9
Fort Bend	19	17			19	17
Grimes	8	6			8	6
Hardin	1	1			1	1
Harris	58	43	14	18	72	61
Jefferson	1	1			1	1
Jasper	1	4			1	4
Liberty	15	16			15	16
Montgomery	5	5			5	5
Orange	1	1			1	1
Polk	11	8			11	8
San Jacinto	5	2			5	2
Tyler	2	2			2	2
Walker	2				2	
Wharton	10	14			10	14
Waller	3	1			3	1
Washington	2	3			2	3

Table 3. Gary and Kent Point Distributions by County

	inland		coastal		total	
county	Gary	Kent	Gary	Kent	Gary	Kent
Austin	33	8			33	8
Brazoria		4		3		7
Chambers			8	15	8	15
Fort Bend	61	140			61	140
Grimes	35	53			35	53
Hardin	36	8			36	8
Harris	958	446	85	172	1043	618
Jefferson	13	18			13	18
Jasper	13	66			13	66
Liberty	399	332			399	332
Montgomery	196	123			196	123
Orange	2	2			2	2
Polk	459	206			459	206
San Jacinto	154	21			154	21
Tyler	36	43			36	43
Walker	4				4	
Wharton	29	48			29	48
Waller	3	1			3	1
Washington	12	12			12	12
	2443	1531	93	190	2536	1721

Table 4. Distribution of Gary and Kent Points by Zone

	western		central		eastern	
	points	sites	points	sites	points	sites
inland						
Gary	166	42	1165	68	1112	37
Kent	260	45	575	50	696	35
coastal						
Gary	0	0	85	14	8	7
Kent	3	1	172	18	15	9
total						
Gary	166	42	1250	82	1120	44
Kent	263	46	747	68	711	44

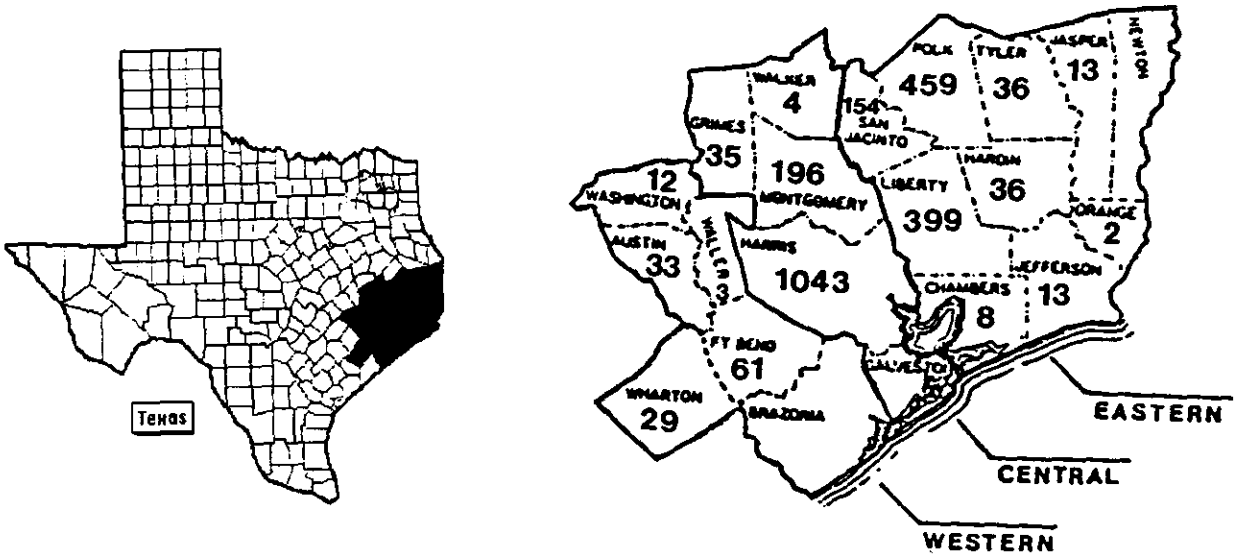

Figure 1. Gary Points in Southeast Texas

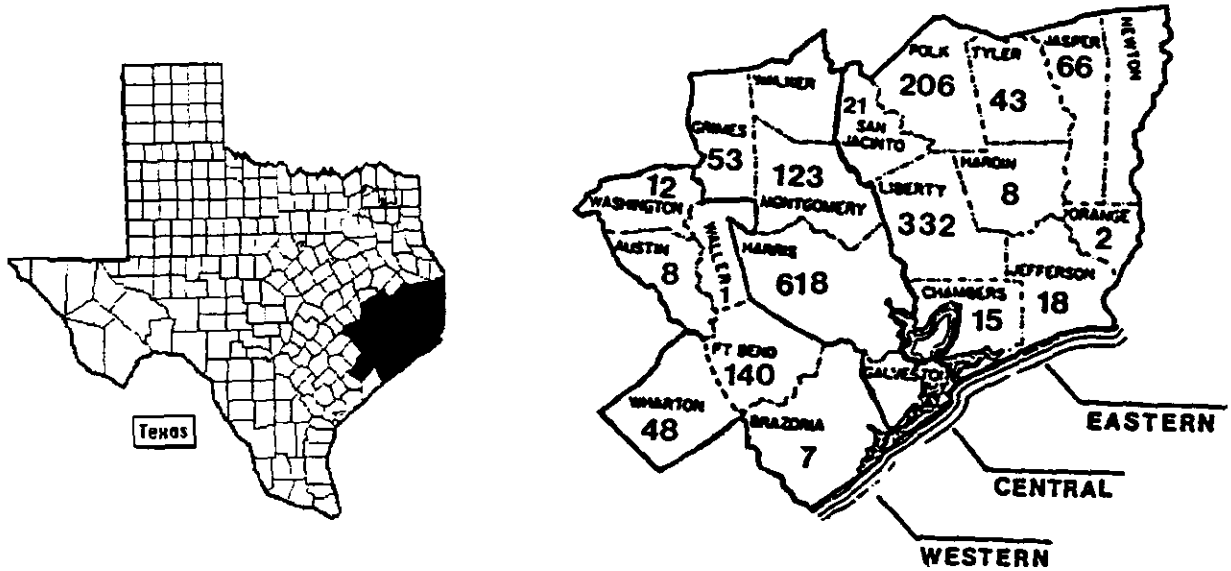

Figure 2. Kent Points in Southeast Texas

Major Arrow Point Types in Southeast Texas

Leland W. Patterson

Introduction

This article presents data on the four major bifacial arrow points types in Southeast Texas, namely, Perdiz, Scallorn, Catahoula, and Alba. All of these point types were used in the Late Prehistoric period (AD 600-1500) in this region, with some indications that Perdiz and Scallorn points continued into the Proto-Historic period (AD 1500-1700).

All of these four bifacial arrow point types have been described by Turner and Hester (1993). Suhm and Jelks (1962) have described Alba, Perdiz, and Scallorn points. The Perdiz point has a triangular body and a contracting stem. The Alba point is similar to the Perdiz point except that the Alba point has a straight stem. The Scallorn point has a triangular body and a corner-notched stem, with a straight basal edge. The Catahoula point is a basally-notched point. Lateral edges are straight to concave or recurved. Shoulders frequently flare with distinctive rounded or squared barbs. Examples of these arrow point types from site 41HR182 are illustrated in Figure 1. In Southeast Texas, arrow points usually weigh less than 2.3 gm, have thicknesses under 5 mm, and minimum stem widths under 9 mm (Patterson 1985).

This article discusses the chronologies and geographic distributions of Perdiz, Scallorn, Alba, and Catahoula arrow points in Southeast Texas. Data on geographic distributions are from the 1998 updates of the computerized data bases for the inland (Patterson 1989a) and coastal margin (Patterson 1989b) parts of this region.

As discussed here, the Scallorn point is basically a Central Texas type that was also used in Southeast Texas. Alba and Catahoula points are basically Louisiana types that were also used in some parts of Texas. The Perdiz point appears to be indigenous to Southeast Texas, based on temporal placement and geographic distribution characteristics.

Unifacial arrow points were used in Southeast Texas from the Middle Archaic (3000-1500 BC) through the Late Prehistoric (AD 600-1500) time periods (Patterson 1992). At the start of the Late Prehistoric period, standardized bifacial arrow point types started in this region (Aten 1983:306), mainly the four major arrow point types discussed here. There is a technological advantage to the manufacture of bifacial arrow points compared to unifacial arrow points. A wider range of sizes and shapes of flake blanks can be used to manufacture bifacial arrow points than can be used to manufacture unifacial arrow points. This may have been especially important in the Late Prehistoric period, when fewer byproduct flakes from the manufacture of dart points would have been available for reuse as flake blanks to make arrow points.

General Comments on Chronologies

Bifacial arrow point chronologies can be well understood only if the geographic position of Southeast Texas is considered. Southeast Texas is an interface between the Southern Plains (Central Texas) and the Southeast Woodlands. There are technological influences on Southeast Texas from both the east and west, as well as indigenous developments within this region. It is shown below in a quantitative manner that the Scallorn point is a Central Texas type with distribution into Southeast Texas, and that Alba and Catahoula points are Louisiana types with distributions into Southeast Texas. The Perdiz point appears to be an indigenous development in Southeast Texas, from both temporal and geographic distribution aspects.

Some archeologists have hoped that there is a serial sequence of arrow point types in Southeast Texas to serve as temporal markers within the Late Prehistoric period. Ensor (1990) proposed a Catahoula-Alba-Scallorn-Perdiz chronological sequence in this region based on very minimal data. When all available data on arrow point chronologies in Southeast Texas are considered, however, no tight chronological sequence of arrow point types is apparent. Scallorn, Alba, and Catahoula points were introduced and used in Southeast Texas at the same time that the Perdiz point was in use in this region. The Scallorn-Perdiz chronological sequence in Central Texas (Prewitt 1981, 1983) does not apply to Southeast Texas.

There are only a few radiocarbon dates for arrow point types in Southeast Texas. Chronological positions are derived mainly from stratigraphic sequences at excavated sites. Aten (1983:306) has estimated that the use of bifacial arrow point types started about AD 600 in Southeast Texas. This still seems to be a reasonable conclusion in regard to current data.

Perdiz Point Chronology

The Perdiz point is the most common type of bifacial arrow point in Southeast Texas (Tables 1,2). Data indicate that the Perdiz point was used throughout the Late Prehistoric period (AD 600-1500) and into the Proto-Historic period (AD 1500-1700).

Both radiocarbon dates and stratigraphic sequences show that the Perdiz point started earlier in Southeast Texas than in Central Texas, where the Perdiz point started about AD 1200 (Turner and Hester 1993:227). Also, the Perdiz point seems to have started somewhat earlier than the Scallorn point in Southeast Texas. Perdiz points occur earlier than Scallorn points in stratigraphic sequences at sites 41WH72 (Patterson et al. 1995), 41FB224 (Patterson et al. 1996), 41WH19 (Patterson et al. 1987), 41MQ6 (Shafer 1968: Table 5), 41HR5 (Wheat 1953: Table 5, Doering site), and 41HR273 (Mueller-Wille et al. 1991: Table 16). Perdiz and Scallorn points occur at the same excavation levels at sites 41FB42 (Patterson et al. 1993), 41HR7 (Wheat 1953: Table 5, Kobs site), and 41SJ160 (Keller and Weir 1979: Table 3).

McClurkan (1968:11) obtained radiocarbon dates of 1410 ±190 BP (AD 540) and 970 ±120 BP (AD 980) at site 41PK8, which he judged to bracket the start of bifacial arrow points. The Perdiz point was as early as any arrow point type at this site (McClurkan 1968: Table 6). The Perdiz point can be placed as early as about AD 600 at site 41HR273, based on radiocarbon dates for the stratigraphic sequence. Ensor and Carlson (1991:219) have dismissed the early occurrence of the Perdiz point at this site as due to soil disturbance. However, their judgement of soil disturbance was based on the late start of the Perdiz point in Central Texas, which does not apply to Southeast Texas.

At site 41FB12 in Wharton County, a Perdiz point was found below a stratum with a radiocarbon date of 1050 ±80 BP, AD 900 (Patterson and Hudgins 1989). This date is too late for the start of the Perdiz point, but does provide additional evidence that the Perdiz point started earlier in Southeast Texas than the starting date of about AD 1200 for this point type in Central Texas (Turner and Hester (1993:227).

I have previously noted that the Perdiz point may have diffused from Southeast Texas into Central Texas when the bison became more numerous in Central Texas (Patterson 1993:28). Story (1990:244) states that the bison became more important in Central Texas after AD 1200, which is the same time that the Perdiz point started in Central Texas. Hunter-gatherer groups may have moved west from Southeast Texas to exploit the increased availability of bison.

The Perdiz point is found throughout the Late Prehistoric at many excavated sites in Southeast Texas. There is some evidence at site 41WH19 (Patterson et al. 1987: Table 2) that the use of the Perdiz point continued into the Proto-Historic period (AD 1500-1700).

Scallorn Point Chronology

The Scallorn arrow point may have been introduced into Southeast Texas not long after its start in Central Texas about AD 600 (Prewitt 1981, 1983). As noted above, there are excavated sites where the Perdiz point occurs before the Scallorn point, but there are also sites where Perdiz and Scallorn points occur at the same excavation levels. In any event, the Scallorn point did not start earlier than the Perdiz point in Southeast Texas.

There are many excavated sites in Southeast Texas where the Scallorn point is found throughout the Late Prehistoric period. While use of the Scallorn point ended in Central Texas about AD 1200 (Turner and Hester 1993:230), the Scallorn point continued to be used later in Southeast Texas. Hall (1981:103) obtained a radiocarbon date of 440 ±70 BP (AD 1510) for a stratum with Scallorn points at site 41AU37 in Austin County. There is evidence at site 41WH19 in Wharton County (Patterson et al. 1987: Table 2) that use of the Scallorn point may have continued into the Proto-Historic period (AD 1500-1700). Hall (1981:103) states that the Scallorn point commonly dates between AD 900 and AD 1600 along the Texas coast.

Alba and Catahoula Point Chronologies

Alba and Catahoula points seem to occur somewhat randomly throughout the Late Prehistoric period at various sites in Southeast Texas. The Catahoula point occurs throughout the excavation sequence of the Late Prehistoric at sites 41HR5 and 41HR7 in Harris County (Wheat 1953: Table 5, Doering and Kobs sites), 41SJ160 in San Jacinto County (Keller and Weir 1979: Table 3), and 41HR273 (Mueller-Wille et al. 1991: Tables 15,16,17). At sites 41MQ6 in Montgomery County (Shafer 1968: Table 3) and 41PK88 in Polk County (McClurkan 1968: Table 32), Catahoula points appear to occur in the early to middle excavation levels of the Late Prehistoric. At site 41PK89 (McClurkan 1968: Table 23), the Catahoula point occurs only in the late part of the Late Prehistoric period.

The Alba point occurs throughout the Late Prehistoric period at sites 41PK8 (McClurkan 1968: Table 6), 41PK88 (McClurkan 1968: Table 32), and 41HR273 (Mueller-Wille et al. 1991: Tables 15,16,17). Alba points occur only late in the Late Prehistoric period at sites 41MQ6 (Shafer 1968: Table 3) and 41PK89 (McClurkan 1968: Table 23).

Alba and Catahoula point types start about AD 600 in Louisiana (Jeter and Williams 1989:148) in the Troyville Culture of the lower Mississippi valley.

Summary of Chronologies

Based on data presented here, several conclusions can be made about the chronologies of major arrow point types in Southeast Texas, as follows:

1. The Perdiz point appears to be an indigenous development in Southeast Texas, starting perhaps somewhat earlier than introduction of the Scallorn point from Central Texas, and introduction of Alba and Catahoula points from Louisiana.

2. The Perdiz point started earlier in Southeast Texas than in Central Texas.

3. The Scallorn point continued in use in Southeast Texas later than in Central Texas.

4. All major arrow point types were used in Southeast Texas throughout the Late Prehistoric period with no serial sequence of arrow point types. This may reflect movements of various social groups.

5. The use of Perdiz and Scallorn points in Southeast Texas may have continued into the Proto-Historic period.

Geographic Distributions

The geographic distributions of the major arrow point types in Southeast Texas are shown by county in Table 1, with inland and coastal margin areas combined. Maps of Southeast Texas show distributions of numbers of points by county for Perdiz (Figure 2), Scallorn (Figure 3), Catahoula (Figure 4), and Alba (Figure 5). Distributions of numbers of sites and numbers of points are given in Table 2 for the major arrow point types in the western, central, and eastern zones of Southeast Texas.

It may be seen in Table 2 that there is a significantly lower number of Perdiz points in the western zone of Southeast Texas, with a larger number of Perdiz points in the eastern zone, and the largest number of Perdiz points in the Central Zone. This distribution might indicate that development of the Perdiz point was centered on the central zone of Southeast Texas, or reflect that a large amount of survey work has been done in Harris County in the central zone. Table 2 shows that there is a sharp dropoff in Scallorn points in the eastern zone. This reflects that the Scallorn point was introduced into Southeast Texas from the west. In contrast, there is a sharp dropoff of Catahoula and Alba points in the western zone of Southeast Texas, which indicates introduction of these point types into Southeast Texas from the east. Table 2 shows that the number of arrow points is higher in the central zone of the coastal margin than in the western or eastern zones of the coastal margin. It has been noted that dart points also cluster in the central zone of the coastal margin (Patterson 1998, 1999, n.d.). A separate study is planned to examine possible reasons for higher numbers of projectile points in the central zone of the coastal margin in Southeast Texas.

Data on arrow points at individual sites in Southeast Texas can be obtained from the inland (Patterson 1989a) and coastal margin (Patterson 1989b) computerized data bases. References for site reports can be obtained by using the site number cross-index in the bibliography for this region (Patterson 1997).

Summary

This article has discussed the chronologies and geographic distributions of Perdiz, Scallorn, Catahoula, and Alba arrow points in Southeast Texas. These are the major arrow point types of this region.

Geographic distributions indicate that the Scallorn point was introduced into Southeast Texas from the west (Central Texas), and that Catahoula and Alba point types were introduced into Southeast Texas from the east (Louisiana). The Perdiz point appears to be an indigenous development in Southeast Texas.

The chronologies of Perdiz and Scallorn points in Central Texas (Turner and Hester 1993) do not apply to Southeast Texas. The Perdiz point started in Southeast Texas earlier than in Central Texas. The Scallorn point continued in use for a longer time in Southeast Texas than in Central Texas.

No serial sequence of arrow point types has been found in Southeast Texas. This may be explained by three of the four major arrow point types (Scallorn, Catahoula, Alba) being technologies that were introduced into Southeast Texas, rather than being local technological developments.

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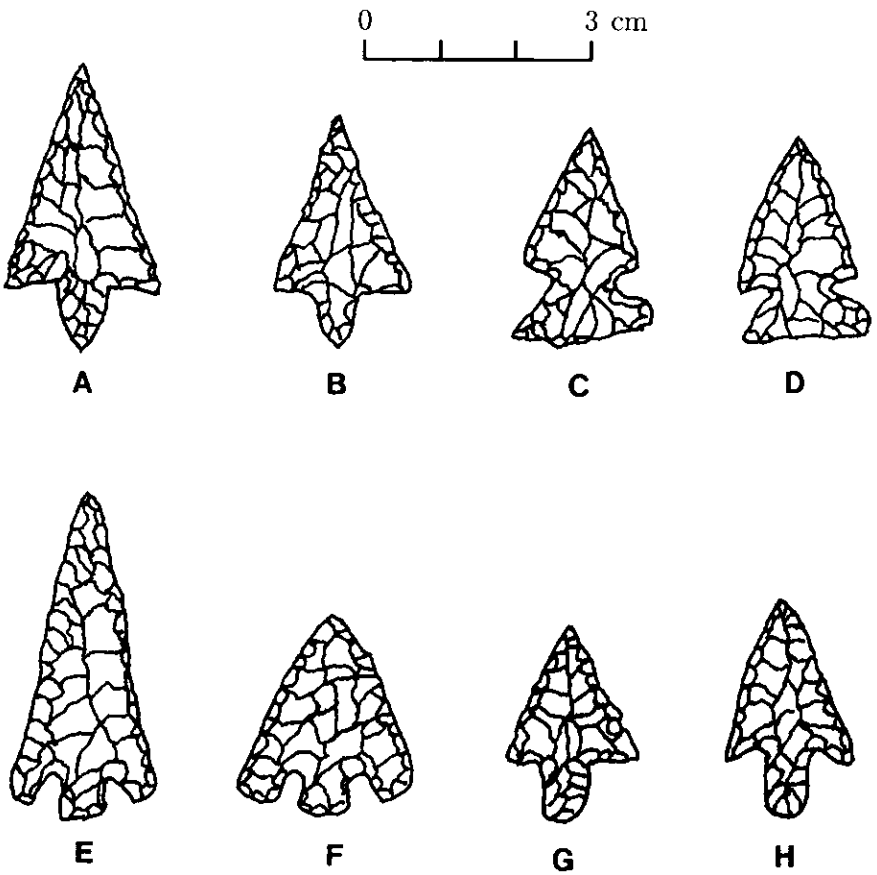
Table 1. Distribution of Major Arrow Point Types by County

	Perdiz		Scallorn		Catahoula		Alba	
county	sites	pts.	sites	pts.	sites	pts.	sites	pts.
Austin	4	12	4	19			1	1
Brazoria	4	9	4	8				
Chambers	20	46	1	1	3	3	3	5
Fort Bend	14	44	9	26	1	1	1	2
Grimes	8	124	6	23	1	2	1	1
Galveston	3	55	2	3			1	1
Hardin	2	14					1	5
Harris	58	467	24	63	31	101	27	61
Jefferson	1	2						
Jasper	3	10			1	1	3	25
Liberty	17	218	3	3	13	71	13	103
Montgomery	4	86	1	1	3	23	2	5
Polk	9	171			9	22	11	131
San Jacinto	4	12	1	5	2	28	1	2
Tyler	2	25	1	1	1	6	2	14
Walker	2	3			1	1		
Wharton	16	56	14	37	2	2	4	5
Washington	3	13	3	8				

Table 2. Distribution of Arrow Points by Zone

	western		central		eastern	
type	sites	points	sites	points	sites	points
Inland						
Perdiz	38	127	55	468	37	440
Scallorn	32	92	30	85	5	9
Catahoula	3	3	30	120	26	128
Alba	6	8	23	41	31	280
Coastal						
Perdiz	3	7	20	267	21	58
Scallorn	3	7	3	5	1	1
Catahoula			6	7	3	3
Alba			8	27	3	5
Total						
Perdiz	41	134	75	735	58	498
Scallorn	35	99	33	90	6	10
Catahoula	3	3	36	127	29	131
Alba	6	8	31	68	34	285



A,B – Perdiz; C,D – Scallorn; E,F – Catahoula; G,H – Alba; all points are from 41HR182

Figure 1. Major Arrow Point Types in Southeast Texas

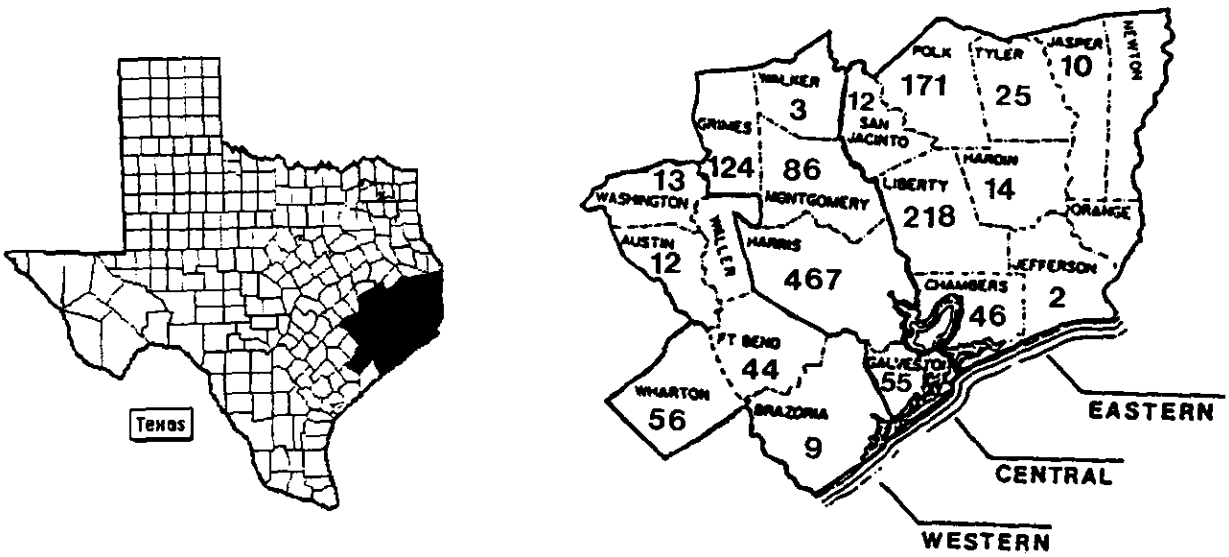


Figure 2. Distribution of Perdiz Points by County

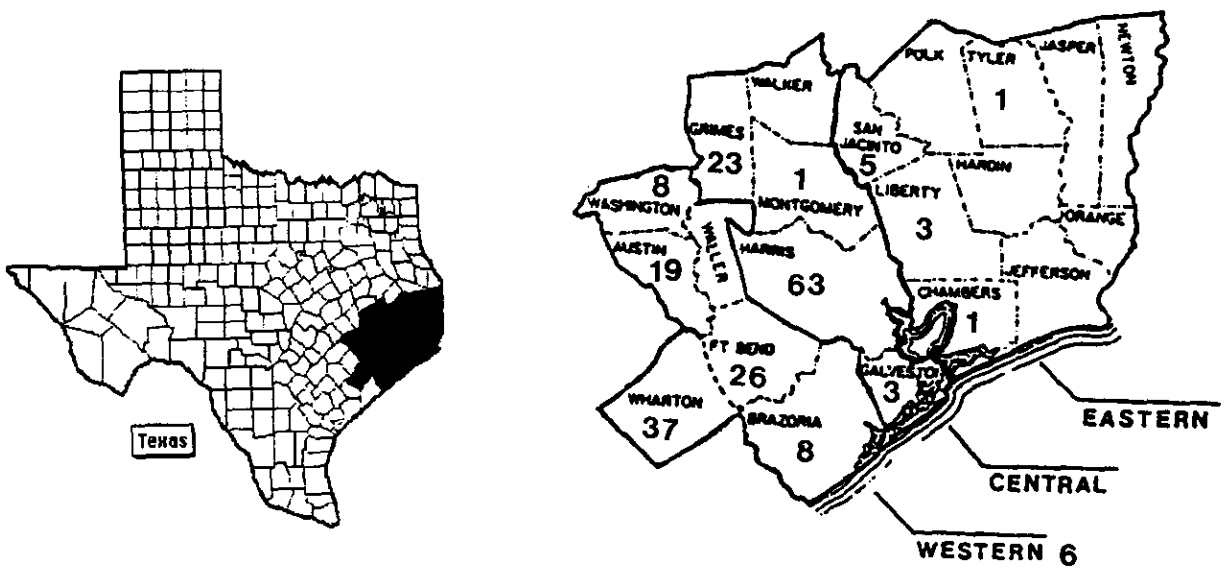


Figure 3. Distribution of Scallorn Points by County

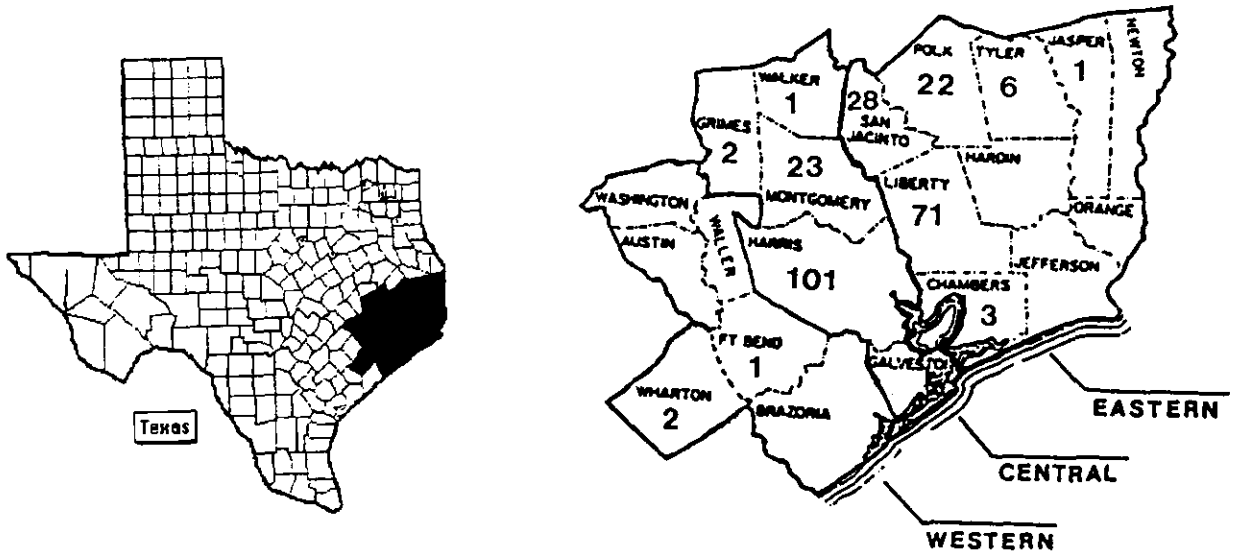


Figure 4. Distribution of Catahoula Points by County

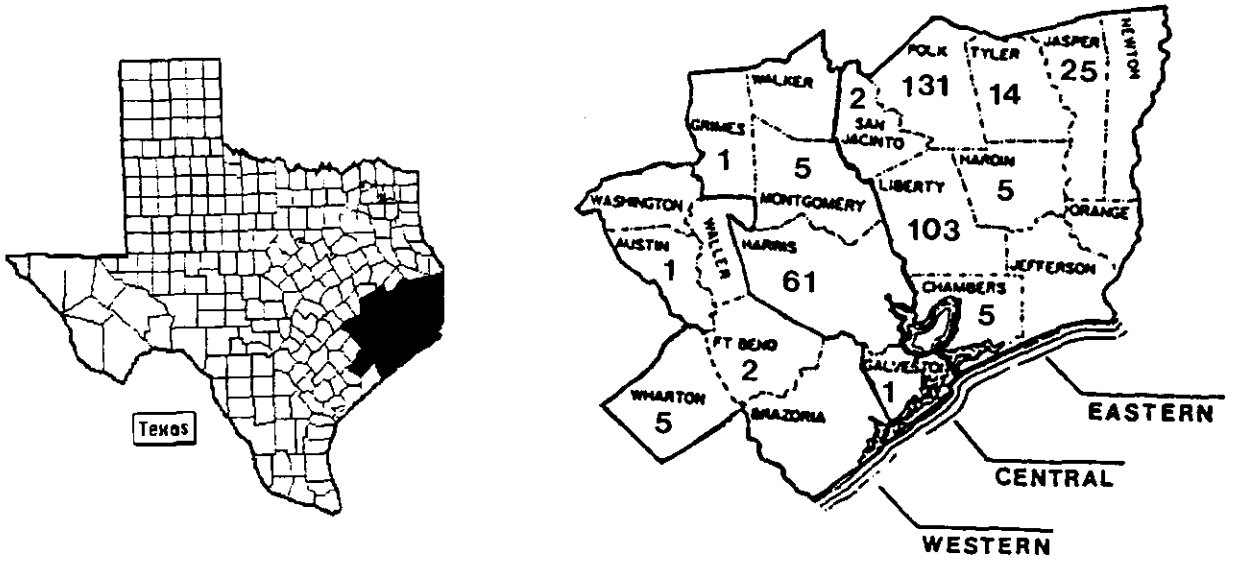


Figure 5. Distribution of Alba Points by County