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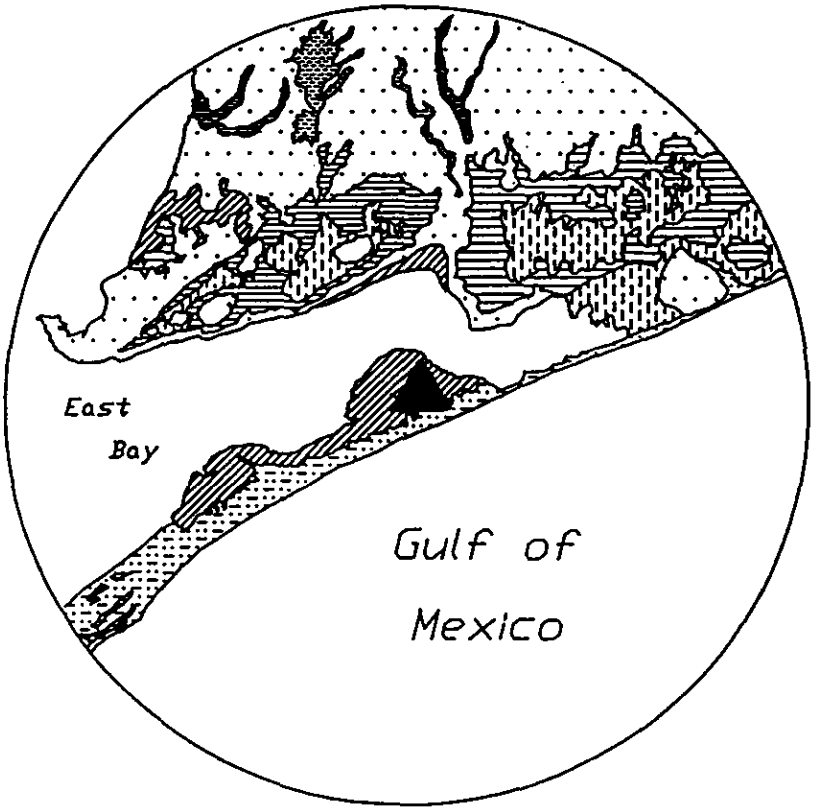

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Comments on Prehistoric Chronology Building in Southeast Texas

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Introduction

The prehistoric archeology of Southeast Texas has been summarized and reviewed by numerous authors in the recent past. General syntheses include the work of Aten (1983,1984), Patterson (1979,1983), and Story (1981,1990). Many publications have resulted from avocational and professional efforts within the region, yet a definitive synthesis of the inland Southeast Texas area has yet to be published. The present comments focus on the methods used in chronology building in Southeast Texas as well as a presentation of a revised projectile point sequence for that region.

Review of previous chronological frameworks

The best chronological and stratigraphic data currently available for interpreting the successive cultural adaptations in Southeast Texas come from relatively few sources: McClurkan (1968), Wheat (1953), Aten (1983), Hall (1981), Shafer (1968), Patterson (1980), Patterson et al. (1987), Patterson and Hudgins (1985), and Ensor and Carlson (1988,1989). The later part of the cultural sequence in Southeast Texas is better known than the early portion, primarily from the extensive work of Aten in the Galveston Bay region. Preceramic cultures are less well documented; sites which exhibit tight associational data along with datable material have proven rare. A further complicating factor has been the likelihood that differences exist between inland and coastal adaptations (Patterson 1983; Ensor and Carlson 1989). Nevertheless, the data now indicate that a generalized sequence of inland Southeast Texas prehistory is available. These data are summarized below.

Despite typological deficiencies and a lack of chronological control (Aten 1983), excavation data and limited radiocarbon dating at inland Southeast Texas sites, when combined, allow the following tentative outline of inland Southeast Texas prehistory. The Southeast Texas region is defined along the same lines as Patterson (1979) and Shafer et al. (1975) as depicted in Ensor et al. (1983: Figure 7). Several chronologies for this area have been presented previously, the most notable being those of Shafer et al. (1975), Shafer (1988), Story (1990), and Patterson (1979,1983). Wheat (1953) and Hall (1981) have presented stratigraphic data and radiocarbon dates from sites in Addicks Reservoir and the lower Brazos Rivers, respectively. Wheat's (1953) sequence, based primarily on extensive excavation at the Kobs, Grisbee, and Doering sites, has been summarized by Fields et al. (1986):

1. The possible earliest occupations, represented only by the lowermost levels and the stream bed collection at Doering, and identified by Clovis?, Plainview, Scottsbluff?, and San Patrice points;

2. Lower level occupations, evident in the lower levels at Doering, and characterized by a variety of rectangular and expanding stem dart point types and an absence of pottery;

3. Middle level occupations, visible in the middle levels at Doering and the lower levels at Kobs (41HR22) and Grisbee (41HR6), and identified by contracting stem dart points (mostly Gary) and sandy paste pottery;

4. Upper level occupations represented by the upper levels at Doering and Grisbee and throughout most of the midden at Kobs, and distinguished by the presence of arrow points, contracting stem dart points, sandy paste pottery, and grog-tempered and bone-tempered pottery (Fields et al. 1986:10).

Hall's (1981) work at Allens Creek produced a cultural sequence with radiocarbon dates spanning the period from Middle to Late Holocene. A Middle Archaic and Late Archaic cemetery were dated to 2610 B.C. and between 520 B.C. and A.D. 360, respectively. Artifacts associated with the Middle Archaic occupation include large Gary-like and Kent-like dart points along with Pedernales points. Late Archaic point types also include Gary and Kent. Later occupations at the Ernest Witte site include a "Transitional Archaic" or "early Late Prehistoric" component represented by Godley and small Gary points and small amounts of Goose Creek pottery. The latest component(s) at the Allens Creek sites dated to the Late Prehistoric period (A.D. 950 – A.D. 1500) and contained Goose Creek sandy paste pottery as well as bone- and grog-tempered sherds and Scallorn and Perdiz arrow points.

Aten (1983) has defined a Late Holocene ceramic sequence for the Galveston Bay area of Southeast Texas which spans almost 2000 years of prehistory. He has divided what he terms the Woodland–Late Prehistoric of that area into a series of five prehistoric and three protohistoric periods. The Clear Lake period was the earliest, dated from approximately A.D. 100 to A.D. 425. It is recognized primarily on the basis of Goose Creek Plain and O'Neal Plain along with Tchefuncte and Mandeville ceramics. Next comes the Mayes Island period (A.D. 425 – A.D. 650) which contains little ceramic diversity, the ceramic assemblage comprised almost wholly of Goose Creek Plain. The following Turtle Bay period (A.D. 650 – A.D. 1000) shows an increase in Goose Creek Red-filmed and decorated Goose Creek ceramics. The Round Lake period (A.D. 1000 – A. D.1350) is marked by the introduction of grog-tempered Baytown ceramics. Sandy paste ceramics decline during this period. The Old River period (A.D. 1350 – A.D. 1700) is thought to have seen a resurgence of Goose Creek Plain pottery coupled with a decline in Baytown pottery. The Orcoquisac period (early historic) from A.D. 1700 to A.D. 1810 followed and ended with initial Euro-American settlement.

Patterson (1983) has presented a tentative projectile point sequence for the Upper Texas Coast and what he defines as a "western transitional zone" in which he associates specific point types in the Suhm and Jelks (1962) typology with a series of five periods. Only his sequence for the Upper Texas Coast will be presented here. The first of these is the Early Paleo-Indian period (12,000 B.P. – 10,000 B.P.). He associates Clovis and possibly early side-notched points based on his work at 41WH19, among others. This is followed in Patterson's sequence by the Late Paleo-Indian period from 10,000 B.P. to 7000 B.P. Point types thought to be indicative of this time span include Plainview, Scottsbluff, Angostura, San Patrice, Golondrina, Dalton, Meserve, and Early Stemmed (variety of forms). The Early and Middle Archaic periods are combined in Patterson's sequence (7000 B.P. to 3500 B.P.). He associates Carrollton, Trinity, Bulverde, Pedernales, Gary/Kent, Ensor, and Williams points with these time periods. Patterson's next period (3500 B.P. – 1400 B.P.), the Late Archaic/Early Ceramic, is represented by a plethora of point types which include Gary/Kent, Ellis, Ensor, Pedernales, Pontchartrain, Yarbrough, Darl, Wells, Bulverde, and Travis, as well as "transitional arrow points."

Patterson's final period, the Late Prehistoric (1400 B.P. – 500 B.P.) is recognized on the basis of Alba, Perdiz, Scallorn, Fresno, Catahoula, Edwards, Bonham, and Bassett arrow points as well as Kent/Gary dart points.

Shafer et al. (1975), McNatt (1978), Shafer (1988), and Shafer and Stearns (1975) have produced trial formulations of Southeast Texas chronology based primarily on work in the San Jacinto

drainage in the Lake Conroe area. A series of five periods have been proposed by Shafer et al. (1975) for the inland Southeast Texas area: (1) Early Lithic, (2) Middle Lithic, (3) Late Lithic, (4) Early Ceramic, and (5) Late Ceramic. The time period covered is from approximately 7000 B.C. until A.D. 1700. In general, it is proposed that lanceolate dart points are earliest, followed by expanding, then parallel and contracting stem dart points and finally by arrow points. The Early Lithic period (7000 B.C. to 4000 B.C.) is recognized primarily on the basis of San Patrice, Meserve, Lerma, and Plainview types while the Middle Lithic (4000 B.C. to 1000 B.C.) is recognized by such types as Wells, Morrill, Calf Creek, and Bulverde-like dart points. The Late Lithic period (1000 B.C. to 200 B.C.) is characterized by Kent, Gary, and Palmillas points. The Early Ceramic period (200 B.C. to A.D. 900) is marked by the introduction of sandy paste ceramics and a continuation of Gary and Kent points. The Late Ceramic period (A.D. 900 – A.D. 1700) is represented by arrow points as well as sandy paste pottery and grog- and bone-tempered ceramics.

Shafer (1988:20) has recently refined this chronology for the Lake Conroe area of Southeast Texas. He proposes a series of four periods: Early Archaic (everything before 5000 B.C.), late Middle Archaic (750 B.C. – 250 B.C.), Late Archaic/Woodland (250 B.C. – A.D. 700), and Post-Archaic (A.D. 700 – A.D. 1500). He indicates that San Patrice and corner-notched points dominate the Early Archaic assemblage, with Palmillas being the principal form of the late Middle Archaic. Kent points appear next, followed by Gary points during the Late Archaic/Early Ceramic period.

Finally, the Post-Archaic period is represented by, in chronological order, Catahoula, Alba, and Perdiz/Cliffton arrow points. Shafer indicates that Goose Creek pottery was first introduced around 250 B.C. at Lake Conroe and continued until A.D. 1500. Bone-tempered ceramics appear around A.D. 750 in Shafer's sequence and continue until A.D. 1500, while he believes grog-tempered ceramics appeared around A.D. 1000 and continued until A.D. 1500.

The work of Ensor and Carlson (1988) at Lake Livingston in Polk County has produced a sequence similar to Shafer's at Lake Conroe. There, Ensor tentatively defined seven major projectile point clusters based on morphological, stratigraphic, and chronometric data. They include Early Corner-notched, Early Side-notched, Early Expanding Haft, Gary/Kent, Catahoula, Alba, and Perdiz. Radiocarbon dates from the site place initial occupation prior to 4240 B.C., with the latest cultural manifestation occurring after A.D. 1500 based on the presence of probable French trade beads. Both Early Ceramic and Late Ceramic occupations were present, represented by Goose Creek Plain and Red-Film pottery. These types gave way to Baytown Plain pottery and finally bone-tempered ware in the upper levels.

Based on their work with a large ceramic collection from the Alabonson Road site (41HR273), Winchell and Wootan Ellis (1989) note the possible formation of two ceramic complexes. The first of these includes the types Alabonson Smoothed, Tchefuncte Plain, and Mandeville Plain, while a second and later complex contains the types White Oak Floated, Esteban Veneered, and Baytown. Radiocarbon dates for this site would place the first complex (Early Ceramic) between A.D. 400 and A.D. 800. Gary and Kent points are possibly associated with this ceramic complex. After A.D. 800, arrow point types such as Catahoula, Alba, and Perdiz are associated with the later complex.

Regional projectile point sequence for Southeast Texas

Figure 1 presents a revised projectile point chronology for the Southeast Texas region based on a consolidation and synthesis of the above published reports and others. While the lack of a region-specific projectile point typology and adequate dating of the archeological record are major hindrances to such a formulation (Aten 1983), enough data are now available to put forth a general projectile point sequence which has meaning. Only the types most common to the region (suspected indigenous types) have been used in the formulation.

The projectile point sequence presented in Figure 1 encompasses approximately 12,000 years of prehistory. It begins with the sporadic occurrence of fluted projectile points such as Clovis and Folsom. These date from approximately 10,000 B.C. up until 8500 B.C. or slightly later. They are followed in time by such unfluted lanceolate forms as Golondrina, Plainview, and Angostura. San Patrice occurs on roughly the same time horizon as Dalton further east (Ensor 1987c). Using the Dalton point to cross-date the San Patrice type, we have estimates from 8500 B.C. up until 7500 B.C. for Dalton (Goodyear 1982; Morse and Morse 1983). Data from the Horn Shelter 2 (Redder 1985; Story 1990) also suggests that the age range for Dalton may be from 8000 B.C. until 7500 B.C. A similar age for the San Patrice type, from approximately 8300 B.C. until 7300 B.C., is suggested by radiocarbon dates from the Horn Shelter 2 (Redder 1985; Johnson 1989:20).

The exact chronological placement of Plainview and related forms is uncertain and fraught with many typological problems (Story 1990:177). Plainview points are generally believed to be partially contemporaneous with such forms as San Patrice and Dalton and these date from 8500 B.C. up until 7500 B.C. or slightly later. Johnson (1989:47) believes Plainview points probably overlap in time with San Patrice and Dalton from 8100 B.C. to 7200 B.C. Note that Plainview and related forms are placed prior to San Patrice in Figure 1 for convenience.

The San Patrice type is closely related to forms such as Webb et al.'s (1971) corner- and side-notched types A and B, also termed Keithville, varieties A and B (Webb 1981; Story 1990). These forms evidently follow San Patrice in time, appear by 7500 B.C., and continue until around 6000 B.C. They are apparently related to widespread eastern United States corner/side-notched point clusters such as Big Sandy and Kirk (Justice 1987:58,61,66).

These point types seem to be followed in time by a group of points belonging to a relatively early (Early/Middle Archaic) expanded haft cluster (Ensor and Carlson 1988; Johnson 1962). Point types belonging to this cluster are thought to include Yarbrough, Trinity, and Carrollton. They appear to fill an otherwise long time gap in the Southeast Texas Archaic sequence from approximately 5000 B.C. up until 2000 B.C. when Palmillas cluster points are thought to have been a dominant type during the Late Middle Archaic, before the introduction of pottery at inland sites (Shafer 1988:18). Although no precise radiocarbon dates are available, they may extend into the Late Archaic and be partially contemporaneous with Kent and Gary points.

There is some indication that Kent points may predate Gary points in Southeast Texas. They tended to occur below Gary at the Crawford site (Ensor and Carlson 1988). At site 41MQ5 in the Conroe Reservoir, Kent points most often occurred below ceramic-bearing levels containing Gary points (Shafer 1988:18). However, there is some evidence that Kent/Gary cluster points co-occur at certain sites such as Alabonson Road (Ensor and Carlson 1989) where numerous Kent and Gary points were excavated from a discrete Early Ceramic period midden context well dated from A.D. 400 – A.D. 800. However, there is evidence of disturbance in the midden in the form of aboriginal pit digging.

Story (1990:222), based on an examination of the vertical distribution of Gary and Kent points at excavated sites in Southeast Texas and other data, suggests that Gary points largely or wholly postdate parallel to rectangular stem forms such as Kent. Thus, a suggested time range for Kent points is thought to be from sometime during the latter portion of the Middle Archaic period (after 2000 B.C.) up until and perhaps continuing after the introduction of ceramics, circa A.D. 350–500 at inland Southeast Texas sites, slightly earlier on the coast (Aten 1983; Ensor and Carlson 1989).

Gary points are strongly associated with Goose Creek sandy paste ceramics at virtually all sites excavated and are thought to date from at least the Late Archaic period (circa 500 B.C.) until the end of the Early Ceramic period, or about A.D. 800.

At that time, or slightly earlier, arrow points were introduced into Southeast Texas. Data from excavated sites such as those at Lake Livingston (McClurkan 1968; Ensor and Carlson 1989), Lake

Conroe (Shafer 1968,1988), and the Alabonson Road site (Ensor and Carlson 1989) suggest that arrow points became dominant over Gary and possibly Kent dart points and that, while there may have been a short period of overlap when both dart and arrow points were in use, eventually arrow points completely replaced dart points.

The Late Ceramic period begins by A.D. 800 or slightly earlier in Southeast Texas along with arrow points, and is marked by the introduction of the Catahoula and Alba types. These are followed by such types as Scallorn, Perdiz, and Cliffton (McClurkan 1968; Ensor and Carlson 1988; Shafer 1968,1988). Perdiz cluster points were probably introduced into Southeast Texas around A.D. 1200 (Turner and Hester 1985; Shafer 1988; McReynolds et al. 1988). Patterson (1988) believes Perdiz points predate this time and are the earliest "standardized" arrow points in Southeast Texas. At site 41HR541, a single component, stratigraphically sealed bison kill site on Whiteoak Bayou, Harris County, Texas, four arrow points were found associated with the bison remains. These included 2 Perdiz, 1 Perdiz-like (typed as Alba in report), and a probable Perdiz-like fragment. Three radiocarbon dates, one on wood charcoal, the other two on bone collagen, yielded an estimated time range for the kill from A.D. 1300 - A.D. 1700 (McReynolds et al. 1988:54). Interestingly, no dart points were found. While this could be due to sampling error, it does raise questions about how long dart points continued to be a mainstay of aboriginal tool kits in Southeast Texas. Perdiz points evidently were manufactured into the proto-historic period or until historic settlement.

It is likely that once a well-documented and described sample of points has been analyzed from this region, additional clusters will be defined as well as types. For instance, the sporadic occurrence in Southeast Texas of certain Central Texas types such as Pedernales, Wells, Ensor, Godley, and Darl, suggests that contact with other regions occurred with some regularity throughout prehistory (Hall 1981; Patterson 1983). They are best used for cross-indexing and dating with other regions and probably do not represent indigenous developments (Fields 1988). In some cases, large groups of morphologically similar points exist for which no formal type designations have been possible for various reasons. The Bulverde-like and Williams-like points come to mind here; they probably represent an undefined Southeast Texas Middle Archaic tradition. Point types such as these are among the least well defined and represent largely catchall groups (Bailey et al. 1988:203).

Given the lack of definitive data regarding the temporal and stratigraphic position of certain point types found at inland Southeast Texas sites, which often exhibit compressed, mixed deposits, this author prefers to take into account Coe's (1964:9) observation that "when an occupation zone can be found that represents a relatively short period of time the usual hodgepodge of projectile point types are not found — only variations of one specific theme." Closer to home, Story (1990:214) states that "when a number of different types of points are recovered from the same excavation level or geologic zone, it's best to regard the context as temporally mixed." This contrasts with assumptions implicit within a tentative projectile point sequence developed by Patterson (1983) for the upper Texas coast. For example, Patterson (1983:255, Table 1), based on limited data, suggests that side-notched points may be associated with Clovis points during the early Paleo-Indian period.

Although Patterson (1989) cites examples of "notched" points allegedly associated with fluted points in Southeast Texas and elsewhere, the "associations" are dubious since only a single fluted point is ever found "associated" with the "notched" points at any one site. Further, the terminology employed in his discussion of so-called "early notched" points is less than precise, making communication between researchers difficult. For example, Patterson (1989:34) uses the terminology "notched base," referring presumably to "early notched points;" this leaves one to speculate on whether it is actually the <u>base</u> which is notched (as in a Montell point) or the <u>haft element</u> (as in Big Sandy point). These imprecisions are largely an outgrowth of the lack of a system of integrated terms describing point morphology.

These important details aside, it seems doubtful if side- or corner-notched points ever played a significant (if any) role in Clovis or Folsom tool kits. At any rate, the data are much too sketchy and incomplete to suggest such an association.

Patterson places Ensor points within both the Middle and Late Archaic time periods, while Bulverde points are suggested to begin by the early Middle Archaic and extend into the Late Archaic. Gary/Kent points are said to begin in the Middle Archaic and continue "throughout all later prehistoric periods" (Patterson 1983:257).

Further, Kindall and Patterson (1986:17) go so far as to state that Gary and Kent points "possibly start during the Early Archaic." This effectively means that Gary and Kent points, according to these authors, were possibly manufactured for approximately 7000 years or from the Early Archaic through the Late Prehistoric. If this is the case, then obviously these types, as defined by Suhm and Jelks (1962), are of little value in either chronology building or in assessing cultural–historical affiliations in Southeast Texas.

This author does not agree with Patterson's suggestions that Gary and Kent points were manufactured from the Early Archaic through the Late Prehistoric period in Southeast Texas. One bit of evidence which does not support Patterson's placement of Gary points is from Patterson's own site (41WH19), where possibly the best stratified deposits to date have been excavated in Southeast Texas (Story 1990). An examination of Patterson's tables which associate point types with different strata indicates that no Gary points were found below the upper portion of Stratum 2 (Patterson et al. 1987). In fact, they were found only in Stratum 1a and the upper portion of Stratum 2 or Patterson's Transitional Early Ceramic/Late Prehistoric levels and Transitional Late Archaic/Early Ceramic levels, respectively. However, Patterson et al. (1987:8) state that "the general time placement of projectile point types in this report is consistent with previous publications by Patterson." This placement of Gary points may be generally consistent, but their stratigraphic position does not support Patterson's view of such a long temporal duration for this type. Better evidence for a Middle Archaic association with Gary-like points (not typed as Gary by Hall) possibly comes from the Allens Creek sites (Hall 1981).

Besides the questionable placement of some types within such a wide range of temporal/cultural affiliations, other placements of specific types contradict the best data available. A case in point is Patterson's (1983) placement of Wells, Pedernales, and Travis points in the Late Archaic period when all other available data from Central Texas strongly suggests Early–Middle Archaic affiliation based on typological and stratigraphic data (Sorrow et al. 1967; Prewitt 1981; Ensor 1987b,1988; Prikryl 1987; Turner and Hester 1985; Story 1990).

This is especially bewildering in light of Patterson's (1988:20) apparent acceptance of a Wells-like point associated with an Early Archaic occupation at site 41FB37, more in line with other regional data. It is not clear why Patterson accepts the possibility of an early placement for the Wells-like point at this site but places it into the Late Archaic in his Upper Texas Coast chronology.

Likewise, by placing types such as Ensor and Marcos (Western Transitional Zone) in the Middle Archaic, he seems to disregard data from Central and North-Central Texas which strongly suggest these to be Late Archaic forms (Prewitt 1981; Weir 1976; Ensor 1987b,1988; Prikryl 1987; Sorrow et al. 1967; Turner and Hester 1985; Story 1990).

It is strongly felt by this author that, given the nature of the current data regarding the temporal and cultural affiliations of the point types in Southeast Texas which Patterson (1983:254) himself recognizes as being insufficient to provide "definitive data concerning precise, narrow time periods," the best option is to be conservative in our placements. It seems highly unlikely, based on work at well-stratified sites in the eastern United States (Coe 1964; Broyles 1971; Chapman 1975,1977), that, as a rule, single types spanned three or more major periods of Southeast Texas prehistory. This is not to suggest that the Eastern Woodlands data can or should be used as a

model for Southeast Texas cultural development. However, it does indicate that close attention should be paid to those important findings and their implications should be considered in light of the Southeast Texas data. Furthermore, it is doubtful if the time occurrence of Central Texas forms such as Ensor, Marcos, Travis, Pedernales, and Wells differ enough from these same types in Southeast Texas to warrant placing them in different cultural periods, especially when the evidence is so weak. In short, the approach of assigning types to wide-ranging cultural periods when the benefit of doing so seems trivial, is counterproductive to the growth of archeological understanding in Southeast Texas. Rather, what is needed is more attention to precise descriptive methods and integration of typological theory with descriptive practice (Ensor 1987a,1988). Simple typing and sketching of points with little or no supporting descriptive data, including lack of published verbal description or metric documentation (rare), is of limited utility in building regional projectile point data bases or typologies. Obviously, this problem is not confined to Southeast Texas archeology.

Until this pattern reverses itself, the state of art of projectile point typology and, indeed, interpretation of much of the archeological record in Southeast Texas will remain handicapped. As Ensor (1988:2) has noted, after Wilmsen (1972) and Dunnell (1971), referring to artifact classification in general: "Any conclusions regarding such data based solely on subjective or intuitive criteria, whether correct or not, are not amenable to independent verification and therefore are suspect as to their potential for generalization and explanation of cultural phenomena." This author (Ensor 1987a; Ensor and Carlson 1988,1989; Ensor et al. 1989) has begun to compile a data base for the Southeast Texas region which meets the requirements for a replicable projectile point data base and continues to update it. A classification system developed by Futato (1983) has been published and used to define projectile point shapes and measurements of these artifacts. Examples of the application of this method to projectile point collections for Southeast, Central and North-Central Texas may be found in Ensor (1987a,1987b,1988), Ensor et al. (1989), and Ensor and Carlson (1989), among others.

Conclusion

In conclusion, while some progress has been made in chronology building in Southeast Texas, the region still suffers from the lack of a regional projectile point typology which can only be developed through using objective, systematic methods. Intuitive typing of points with little to no descriptive data, including virtually no metric data does not allow independent verification of a typology and is of limited utility in building sound chronological frameworks.

Until this situation is improved, the state of the art concerning point typology in Southeast Texas and our knowledge of prehistoric cultures in time and space will continue to languish. The projectile point sequence presented here is conservative and attempts to present only the best documented and defined indigenous types as its basis. Once a well-established regional typology is in place, the nature of extra-regional contacts, including the identification of South Texas, Central Texas, Northeast Texas, and western Louisiana types will become easier. New regional types will surely be found. Let us work together toward that end.

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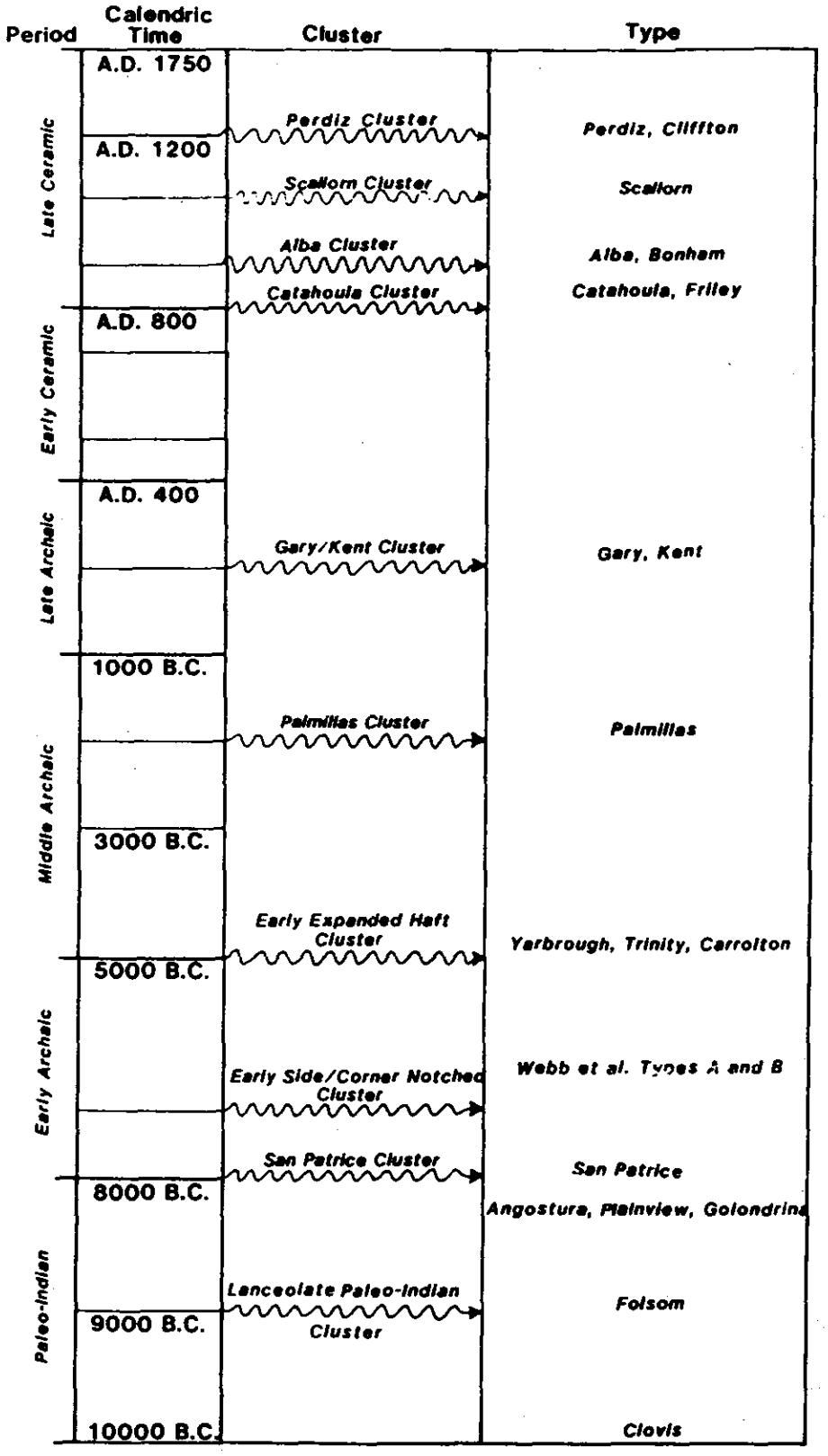

Figure 1. Chronology of major projectile point types and clusters for inland Southeast Texas

The Seaberg Collection (41HR641, 642), Harris Co., Texas

Leland W. Patterson

Introduction

This article describes surface collections of prehistoric artifacts made by Curtis Seaberg during farming operations in eastern Harris County, Texas. Two of the collections, for sites 41HR641 and 41HR642, are related to specific sites, and a third collection represents unplaced finds over the general farm area. Some field work done by the Houston Archeological Society at site 41HR641 is also summarized here.

Sites 41HR641 and 41HR642 are both located along the upper reaches of Cedar Bayou in Harris County, near the Liberty County borderline. Site 41HR642 is located about 21 miles north of the coastline of Galveston Bay. This site is on sandy soil and is an area approximately 50 feet in diameter. Site 41HR641 is located about 25 miles from the coastline on the edge of a former lake. Artifacts have been found here over an area several hundred feet in diameter.

A large collection of artifacts was found on site 41HR641 after heavy rains. Later flooding covered the area with culturally sterile sand. It appears that much of the site has been deflated by erosion, as judged by the wide age range represented by artifacts collected on the surface. Test excavations confirm the deflated nature of this site.

All of the collections have artifact types that demonstrate long occupation sequences, as has been previously noted for many sites in this region (Patterson 1983). Projectile point types at both sites represent occupations from the Paleo-Indian through the Late Prehistoric time periods. Occupations at these sites during the Paleo-Indian and Archaic periods, until about A.D. 100, represent Indians with a lifestyle adapted to the inland coastal plain. Later ceramic artifacts seem to reflect some presence of Indians adapted to a lifeway of the coastal margin. Significant indications of Indians in this region with a coastal margin lifeway are found mainly after the Late Archaic, in the ceramic periods (Aten 1983:158).

Projectile points

Projectile points from all of the collections are summarized in Table 1, and some of the specimens are illustrated in Figures 1 to 5. Each of the three collections has an Early Notched dart point specimen which represents the Late Paleo-Indian period (8000-5000 B.C.) or possibly earlier. The Early Notched point specimen from site 41HR642 (Figure 1M) has a fishtail style similar to specimens from sites 41WH2 (Patterson and Hudgins 1980: Figure 4G) and 41WH19 (Patterson et al. 1987: Figure 10H,J,K) in Wharton County. Site 41HR641 also has a San Patrice point and a Plainview point from the Late Paleo-Indian period. The general farm collection and site 41HR641 each have an Early Stemmed point that could be from either the Late Paleo-Indian period or the Early Archaic period (5000-3000 B.C.). A Wells point in the general farm collection represents the Early Archaic period. All Paleo-Indian and Early Archaic point specimens from these collections have ground basal edges.

Bulverde and Bulverde-like points represent the Middle Archaic period (3000-1500 B.C.). Some Gary and Kent specimens may also be from the Middle Archaic. Williams points from these sites represent some portion of the Middle and Late Archaic periods. Gary and Kent points were manufactured from the Middle Archaic through the Late Prehistoric periods in Southeast Texas, with sizes tending to be smaller after the Late Archaic. A major portion of the large number of Gary and Kent points in these collections is probably from the Late Archaic (1500 B.C.-A.D. 100)

and Early Ceramic (A.D. 100-600) periods, reflecting rapid population increases in these periods (Patterson 1986). Other dart point types in these collections from the Late Archaic and Early Ceramic periods include Yarbrough, Darl, Palmillas, Marcos and Ellis. Projectile point chronologies for Southeast Texas are shown in Table 2 as a updated revision of a previous publication (Patterson 1983: Table 1).

The Late Prehistoric period (A.D. 600-1500) is represented by arrow points at sites 41HR641 and 41HR642. Both of these sites have significant numbers of Alba, Catahoula and Perdiz arrow points. The relatively large number of arrow points found at these sites may be an indication of continued use of these sites by inland-type Indians in the Late Prehistoric period. Sites used exclusively by Indians of the coastal margin usually have only a few lithic artifacts of any type.

Ceramics

All potsherds larger than 15 mm square were counted for these collections. There were 12 Goose Creek Plain sandy paste sherds and 1 bone-tempered sherd found on site 41HR641. An incised sherd (Figure 6E) was also found on this site, having 5 parallel incised lines. This specimen has a contorted paste with no visible sand. It fits the description of the Tchefuncte type from the Early Ceramic period (Aten 1983:238), although Aten does not mention an incised variety of Tchefuncte for the Galveston Bay area. Tchefuncte pottery is found mainly at coastal margin sites. This specimen may reflect the presence of Indians from the coastal margin at inland site 41HR641 during the Early Ceramic period. The bone-tempered sherd from this site is probably from the Late Prehistoric period (Aten 1983: Figure 14.1), and could also represent the presence of Indians from the coastal margin at this site.

All sherds from site 41HR642 are of the Goose Creek type, including 147 plain and 4 incised specimens. The incised specimens (Figure 6A to D) have patterns similar to some patterns found on Goose Creek pottery at coastal margin sites (Aten 1983: Figure 12.2; Black 1989). These incised designs with grids of horizontal and vertical lines seem to occur most frequently in the Round Lake period (A.D. 950-1350) of Aten's (1983: Table 14.2) Galveston Bay chronological sequence. Therefore, the incised sherd specimens possibly show the presence of coastal margin Indians at inland site 41HR642 during the Late Prehistoric period.

General lithic materials

Two large prismatic blades (Figure 1) found on site 41HR642 are typical of the Paleo-Indian period. A bifacial drill was found in the general farm collection.

Site 41HR641 appears to have had significant lithic manufacturing activities, because many lithic flakes have been found here. Five dart point preforms found at this site also indicate lithic manufacturing activities. Three pebble tools made from small chert cobbles were found on site 41HR641, with one specimen shown in Figure 4. A bifacial knife (Figure 4) and two bifacial drills were found on this site. A sandstone metate, 15 cm in diameter, was found at this location. An Albany scraper (Figure 2) was recovered from site 41HR641, which is consistent with the presence of a San Patrice point. While Albany scrapers are generally found with San Patrice points (Turner and Hester 1985:230), Albany scrapers occur at a much lower frequency than San Patrice points. The Albany scraper may be a rather specialized tool type of the Late Paleo-Indian period.

The largest portion of projectile points in these collections are made from chert, with petrified wood also being widely used. A few of the petrified wood specimens are palm and golden palm. A small number of dart points are made from fine-grain quartzite. This is a lithic-poor area. Most chert raw materials were probably imported from sources located 50 to 100 miles to the west. Some

of the larger flakes, from 5 to 10 cm in length, found at site 41HR641 probably were brought to the site from the Colorado River Basin, for use as blanks for dart point manufacture. Petrified wood can be found somewhat closer, in the Trinity and San Jacinto River Basins. Petrified wood pebbles were found at both 41HR641 and 41HR642. Lithic flakes found at these sites have about the same proportion of material types as the projectile points. There is evidence for heat treating of lithic materials in the form of waxy luster, reddish coloration and potlid surface fracture scars.

Miscellaneous artifacts

Miscellaneous pieces of burned clay occur on the surfaces of the sites associated with these collections. The specimens do not appear to have been purposefully formed. Many pieces of asphalt have been found at site 41HR642. Asphalt was used by Indians to haft projectile points. This material was probably collected from coastal beaches.

Field work at 41HR641

The HAS made a surface survey and some test pits at 41HR641 on May 19, 1990. Participants in this work included Sheldon Kindall, Karen Acker, Kevin Thuesen, Marshall Black, Ray Trebbi, Lana Reedy, Lonnie Griffin, Joe Hudgins, Lee Patterson, Bob Shelby, Rita Crofton, Muriel Walker, Phyllis Bradley, Jim Wells and Bill Schurmann.

Lithic materials in the surface collection included an arrow point tip, a Kent point (chert), 4 pieces of petrified wood, a small chert cobble and 27 flakes. Twenty-two small pieces of burned clay were found. There were 21 Goose Creek Plain sandy-paste sherds collected, including 2 rim sherds and 1 conical pot bottom. A Goose Creek Incised sherd with 2 parallel lines was also found.

Four one-meter square pits were made to test the stratigraphy of site 41HR641. Two of the pits (A and C) were spaced over 100 feet apart and yielded only a few pieces of burned clay. Two other pits (B and D) were spaced a few feet apart in another area where a concentration of artifacts was observed. Culturally sterile clay was encountered in all pits at a depth of 10 cm. This demonstrates that this site is generally deflated and contains little intact stratigraphy. The upper 5 cm of soil here is mainly sand that has been deposited from recent flooding.

Materials found at 0-5 cm in Pit B included 4 small pieces of bone, 1 Goose Creek Plain sherd and 3 lithic flakes. Artifacts found at 5-10 cm in Pit B included 1 dart point preform, 1 chert cobble, 1 Goose Creek Plain sherd, 18 lithic flakes and 1 Gary point (petrified wood). Items found at 0-5 cm in Pit D included 8 lithic flakes and 4 small pieces of burned clay. Materials found at 5-10 cm in Pit D included 4 lithic flakes, 4 small pieces of burned clay and 1 Kent point (petrified wood).

Cultural relationships

Occupations at these inland sites from the Paleo-Indian through the Late Archaic periods were by Indians with a lifestyle adapted to the inland coastal plain. After the Late Archaic, however, some potsherds found at these inland sites show the possible presence of Indians from the coastal margin. Sites 41HR641 and 41HR642 may have continued to be used by Indians with an inland orientation after the Late Archaic period, with occasional contacts with Indians from the coastal margin. Other possibilities include these sites becoming locations for part of the seasonal subsistence round of Indians from the coastal margin, or these sites being seasonal gathering points for both inland and coastal margin Indians.

There was no rigid boundary in land use by Indians from the coastal margin and by their inland counterparts. It may be possible to detect some general geographic patterns, however. Patterson (1990) has proposed a model where Indians of the coastal margin utilized a band about 20 miles wide from the coastline for most of the year, with some movements farther inland in the fall and winter months. There is a need for more data, especially from sites that are 5 to 30 miles inland, to develop details on the seasonal subsistence round of Indians of the coastal margin and to better define relationships of coastal margin Indians with their inland counterparts. The land area slightly inland from the coastline in Southeast Texas has not been well surveyed for archeological sites. This land area should be given more importance in future research plans.

Summary

Collections of artifacts from sites 41HR641 and 41HR642 and the general farm area show long occupation sequences for this area of the inland coastal plain, following a general pattern for the inland portion of Southeast Texas. Occupation sequences for the two specific sites have a time range from the Paleo-Indian through the Late Prehistoric periods. From the Paleo-Indian through the Late Archaic periods, these sites were utilized by nomadic Indians with an inland adaptation lifeway. In the later Early Ceramic and Late Prehistoric periods, pottery types indicate some presence of Indians from the coastal margin. Data from sites such as these that are fairly near the coastal margin are important for obtaining more details on seasonal subsistence patterns of Indians of the coastal margin, and for better defining relationships between Indians of the coastal margin and their inland counterparts.

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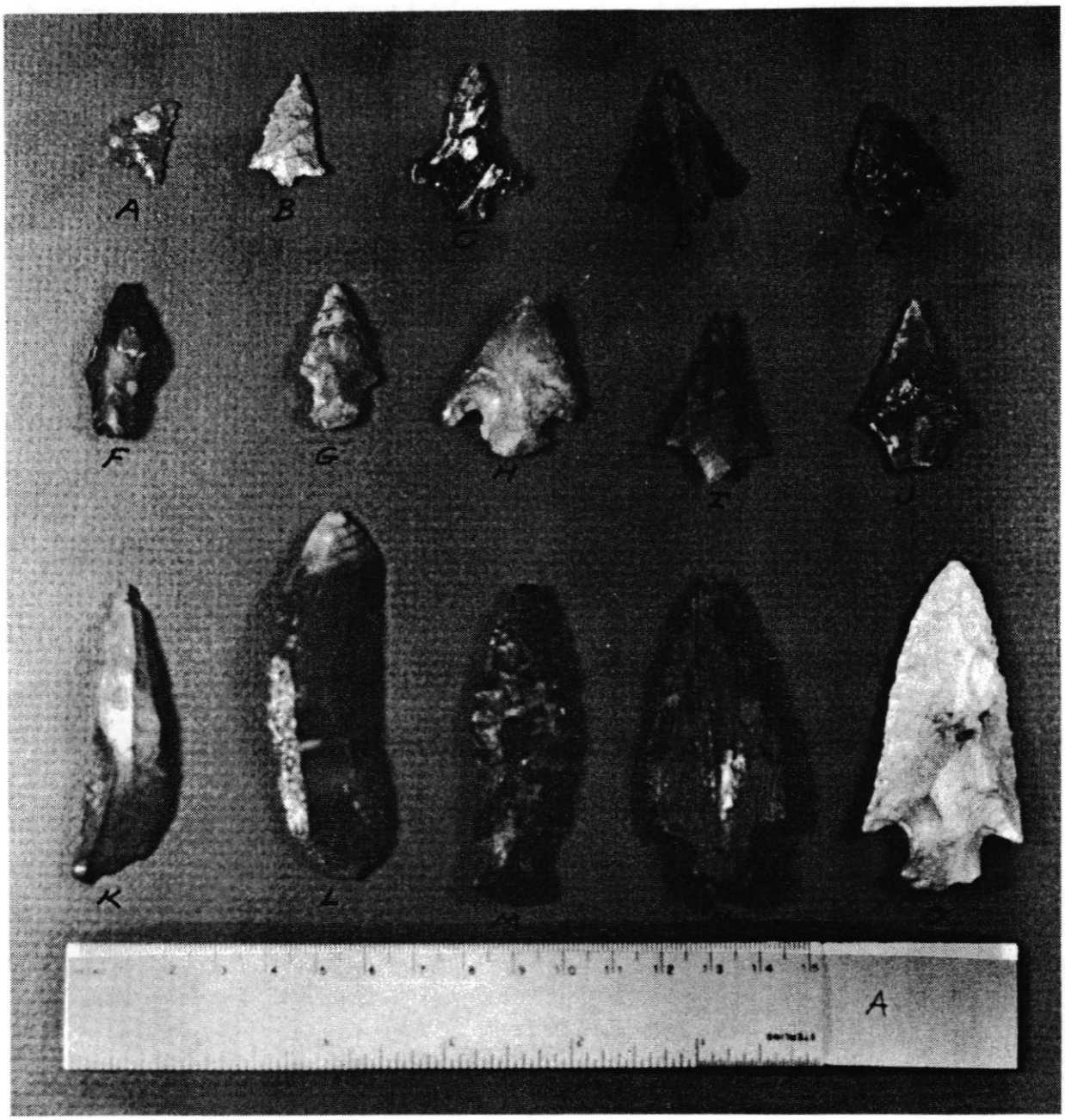
Table 1. Summary of Projectile Points

point type	general farm	41HR641	41HR642
dart points			
Early Notched	1	1	1
Early Stemmed	2	1	
San Patrice		1	
Plainview		1	
Wells	1		
Bulverde	3	1	
Bulverde like	8		3
Williams		2	1
Gary	8	67	4
Kent	14	35	4
Yarbrough	3	2	
Darl	1		
Palmillas	3	1	
Marcos	1		
Ellis		1	1
unclassified	1	4	4
preform	4	5	
total	50	122	18
arrow points			
Alba		2	5
Catahoula		6	3
Perdiz		5	9
unclassified			1
total		13	18

Table 2. Projectile Point Chronologies in Southeast Texas

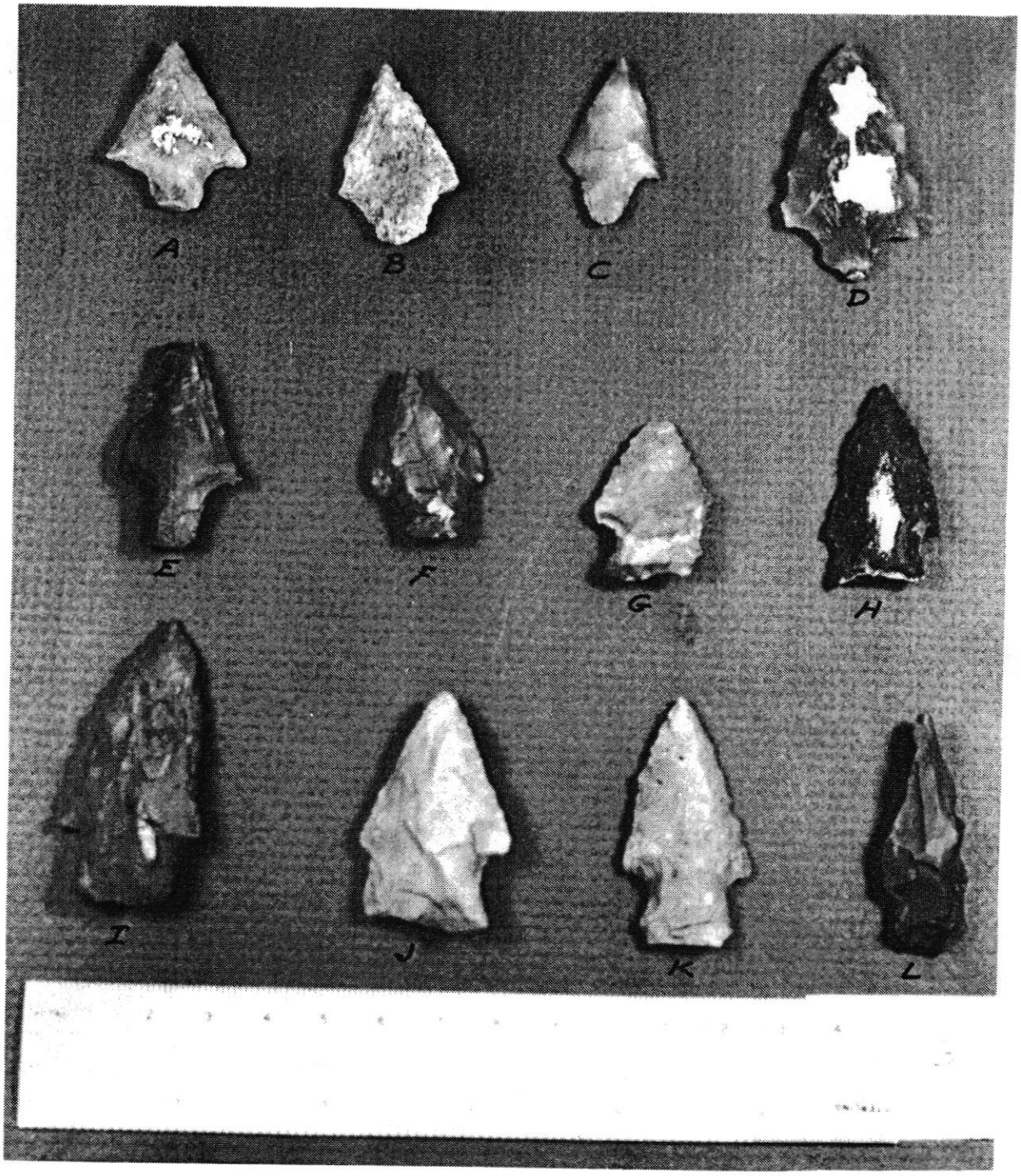
point type	Early Paleo	Late Paleo	E. Arch	M. Arch	L. Arch	Early Ceram	Late Prehist
Clovis	X						
Folsom	X						
Early Notched	X	X					
San Patrice		X					
Plainview		X					
Scottsbluff		X					
Angostura		X					
Meserve		X					
Early Stemmed		X	X				
Bell			X				
Trinity			X				
Wells			X	X			
Carrollton			X	X			
Morrill			X	X			
Bulverde				X			
Lange				X			
Pedernales				X	X		
Williams				X	X		
Travis				X	X		
large Gary				X	X		
large Kent				X	X		
Ponchartrain					X		
small Gary					X	X	X
small Kent					X	X	X
Darl					X	X	
Yarbrough					X	X	
Ensor					X	X	
Ellis					X	X	
Fairland					X	X	
Palmillas					X	X	
Marcos					X	X	
unifacial arrow points					X	X	X
bifacial arrow points							X



A – Perdiz point; B – Alba point; C,D,E – Catahoula points; F,G – Kent points;
H – Ellis point; I,J – Gary points; K,L – large prismatic blades; M – Early Notched point;
N – Bulverde-like point; O – Williams point

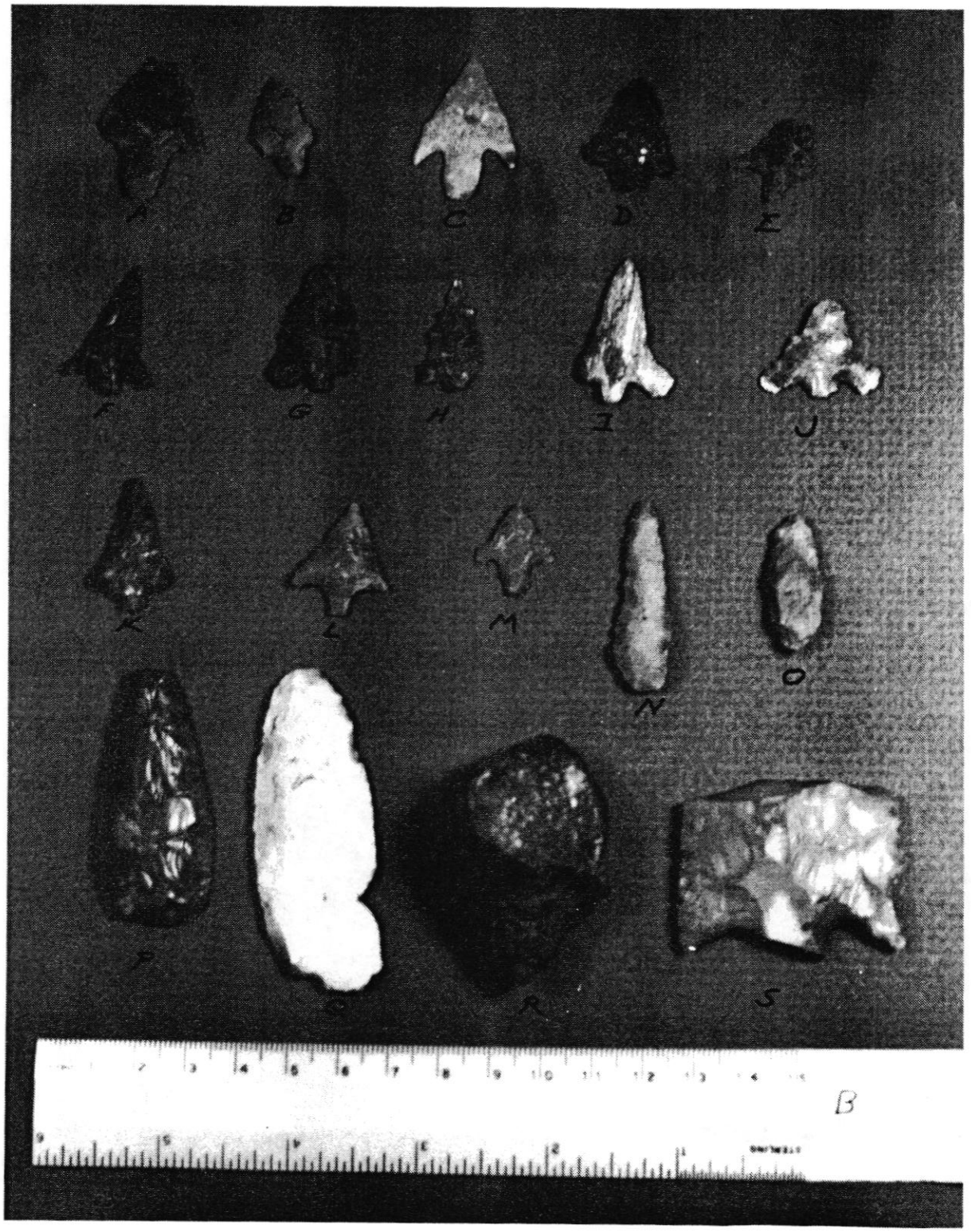
Figure 1. Site 41HR642 lithic artifacts

Figure 2. see page 21



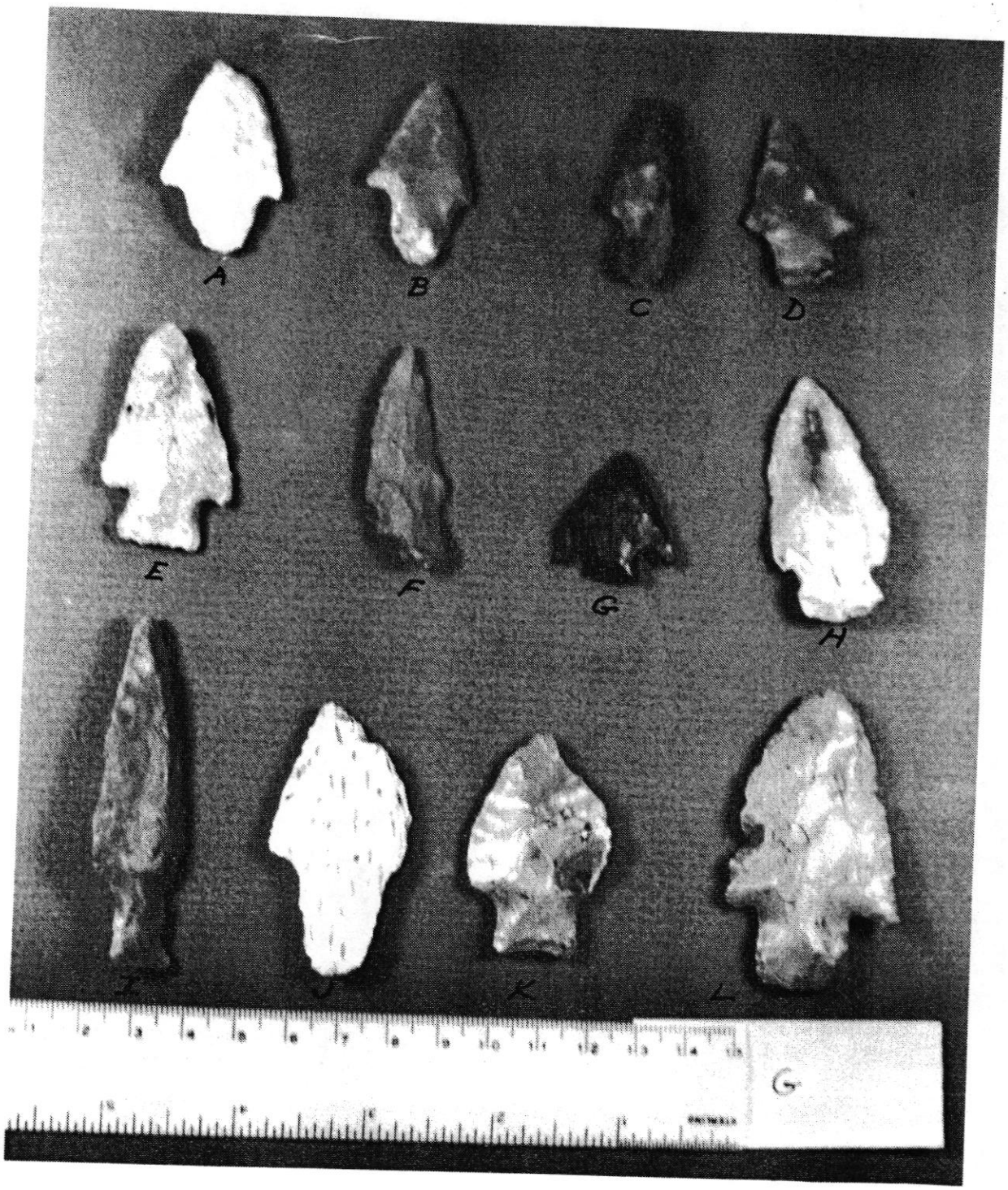
A to D – Gary; E,F – Kent; G – Ellis; H – Yarbrough; I – Bulverde; J – Williams; K,L – Yarbrough

Figure 3. Site 41HR641 dart points



A,B – Alba points; C to F – Perdiz points; G to K – Catahoula points; L,M – Alba points; N,O – bifacial drills; P – preform; Q – knife; R – pebble tool; S – unclassified point

Figure 4. Site 41HR641 lithic artifacts

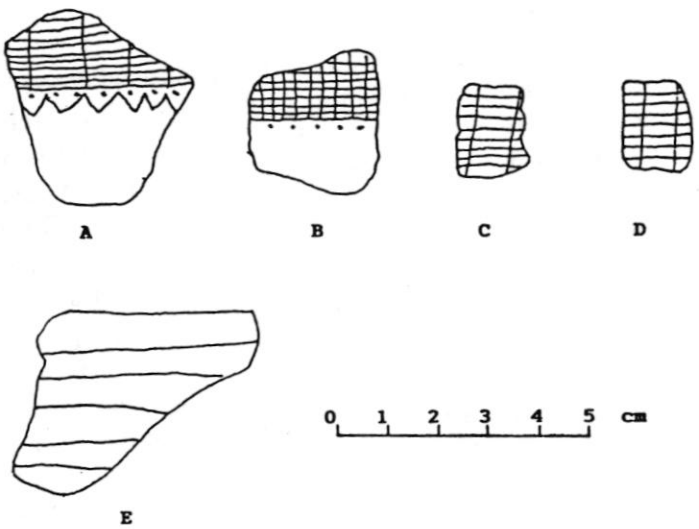


A,B – Gary; C,D – Kent; E – Yarbrough; F – Darl; G – Marcos; H – Yarbrough; I – Early Notched; J – Wells; K – Early Stemmed; L – Bulverde

Figure 5. General farm dart points

A – Early Notched point; B – Early Stemmed point; C – Plainview point; D – San Patrice point; E – Albany scraper

Figure 2. [out of order] Site 41HR641 Paleo-Indian artifacts



A to D – site 41HR642; E – site 41HR641

Figure 6. Incised sherds

Health Status and Medical Disorders at the Caplen Site (41GV1), Galveston County, Texas

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Introduction

In 1932, crews from the University of Texas under the direction of A. M. Woolsey excavated 66 burials and numerous artifacts from the Caplen site (41GV1), a Late Prehistoric and Protohistoric mortuary locale in Galveston County, Texas. Campbell (1957) provided an excellent description of the artifacts recovered, and Aten et al. (1976) presented a much-needed analysis of Caplen mortuary patterns within a regional context. Woodbury and Woodbury (1935), Woodbury (1937), and Wilkinson (1977) have described biological affinities of this population based on cranial morphology, but there has been no summary of the health status of the Caplen population. A more complete analysis of the health and demographic structure of the Caplen population can be found in Powell (1989).

This site is located southeast of the town of Caplen on Bolivar Peninsula. Prehistorically, the site was adjacent to a tidal pass (Aten pers. com. 1989) and was surrounded by freshwater, brackish, and saltwater marshes as well as grasslands (Figure 1). The Caplen site has been dated by Aten (Aten et al. 1976) to the Old River and Orcoquisac phases (A.D. 1000 – 1500) based on ceramic assemblages. Recent radiocarbon dates on human bone produced an age range of A.D. 1038 – 1660, placing the interments at Caplen within the Late Prehistoric to Historic period (Powell and Huebner 1989). One burial contained glass "trade beads" (Campbell 1957:464), which verifies that some of the individuals buried at the site had direct or indirect contact with Europeans. The epidemiological implications of an historic use of this cemetery site will be discussed below.

Methods

During the 1932 excavation, 66 burial features were exposed and recorded. However, remains from only 28 of these features, representing 48 individuals, were collected for permanent curation. These materials are presently housed at the Texas Archeological Research Laboratory, The University of Texas at Austin, and were examined by the author. Age and gender determinations for each individual (Table 1) were based on dental and skeletal development (Schour and Massler 1940; Krogman 1962), skeletal metamorphosis (McKern and Stewart 1957; Gilbert and McKern 1973; Lovejoy et al. 1985), and skeletal morphology (Phenice 1969; Keen 1950; Steele 1979).

Each of the 48 individuals was examined for evidence of skeletal abnormalities. Infectious disorders (Table 2) were broken down into three types of expression: periostitis, an inflammation of the periosteum resulting in abnormal bone deposition on the surface of a bone (Ortner and Putschar 1981; Steinbock 1976); osteitis, an inflammation of the bone cortex with cortical swelling and remodeling (Steinbock 1976); and osteomyelitis, severe infection of both cortex and marrow space resulting in drainage channels (cloacae) for pus (Steinbock 1976) and bone death. Metabolic disorders (Table 4) are skeletal anomalies resulting from some physiological insult that interrupts the normal functioning of hard tissues but is not directly attributable to infectious disease. Metabolic disorders include enamel hypoplasia, a defect in enamel development due to periodic interruption of tooth growth (Rose et al. 1985); cribra orbitalia, cortex thinning along the roof of the orbit which is associated with an anemic reaction; and porotic hyperostosis, pitting and thinning of

the cranial vault also linked to anemic response. In addition to these disorders, several types of trauma, including dislocations, fractures, and puncture wounds, were noted (Table 5). Readers should consult Ortner and Putschar (1981) and Steinbock (1976) for more complete description of these medical disorders.

Results

Table 1 shows the age and sex distribution of individuals buried at Caplen. These data should be viewed as a composite of the population's mortality experience over an extended period of time (i.e., the use of the cemetery). The gender ratio at the Caplen site is slightly skewed; of the 31 individuals for whom sex could be ascertained, 19 are female and 12 are male, with a resulting male-female ratio of 0.632. A chi-square test for differences in gender ratios, assuming a 1:1 expected ratio (Lovejoy 1971), was not statistically significant ($p = 0.25$).

Infectious disease rates at Caplen were extremely high. Nearly one-half of the individuals at the site were affected by periosteal inflammations (Table 2). Juveniles in the sample had high rates of periostitis, but low levels of osteitis and osteomyelitis. Compared to those of the adults, juvenile infection rates were low, especially for the more severe expressions of infection (osteitis and osteomyelitis). Infection rates among adults were high for all three disorders. There was also a slight female bias in the prevalence of all three infectious disease categories (Table 2). However, differences in infection by sex were not statistically significant ($p = 0.613$). Compared to those of other Late Prehistoric hunter-gatherer populations in the region, infection rates at Caplen were surprisingly high (Table 3). These data indicate that the Caplen population was exposed to more virulent agents of infection, was at greater risk for infection due to cultural practices, or had lower immunity than other prehistoric populations on the Texas coast.

Several individuals in the skeletal sample had infectious lesions with patterning similar to infection by *Treponema* sp., a microbe responsible for the tropical diseases of pinta and yaws, as well as venereal and nonvenereal syphilis (Hackett 1976). "Treponematosis" results in a characteristic series of bony changes such as bowed tibiae ("sabre shin"), crater-like lesions in the frontal bone, and destruction of the bones in the nasal region. Five individuals from Caplen had sabre shin and cranial lesions similar to those of treponematosis. The presence of a treponema-like infection along the Texas coast has been substantiated by Jackson et al. (1986), who associated this disease with seasonal aggregation. The limited number of individuals at Caplen with such infections precludes a more accurate diagnosis of syphilis or yaws, although the pattern of involvement is more similar to that of yaws (Powell 1989:111).

Metabolic disorders had a similar pattern of distribution in juveniles and adults, and between sexes (Table 4). Two cases of enamel hypoplasia, both in females, were observed in the 14 individuals who have intact enamel. Although there are almost twice as many males as females with intact enamel, the limited sample size makes it impossible to positively identify a female bias in enamel defects. It is interesting to note that the percentage of females affected by metabolic disorders (enamel hypoplasia, cribra orbitalia, and porotic hyperostosis) is consistently higher than the percentage of affected males.

Trauma rates were low overall within the sample. Dislocations and bone injuries due to puncture wounds are found only in males, while fracture rates were comparable between sexes (Table 5). The fractures in females were in the hands and feet, while the single male case involves a long bone.

Interpretations

The high disease rates at the Caplen site are attributable to several factors. It is possible that Woolsey's excavation methods led to the selection of more diseased individuals. However, Aten et al. (1976) found no archaeological evidence that prehistoric or historic coastal groups practiced age or sex segregation as part of their mortuary customs. Neither is there evidence that diseased and nondiseased individuals were separated within the cemetery (Powell 1989).

The infectious disease rate at the Caplen site was higher than that of any other prehistoric coastal population examined by the author (Table 3), and there are several possible cases of treponemal infection. The radiocarbon dates for the site extend into the Historic period, and European trade goods were present in one grave, which indicate that some of the individuals had some type of indirect (or even direct) contact with Europeans. Many native populations along the Gulf coast experienced epidemics of European-introduced disease (see Smith 1871 for Cabeza de Vaca's account) even when they had no direct physical contact with Europeans; microbes, like trade items, were rapidly transferred from one group to another.

Although the detrimental effect of European colonization on the health of native populations has been well documented in the ethnohistoric literature for the upper Texas coast (see Aten 1983 for a review), the Caplen skeletal data do not fit a pattern of virulent epidemic disease. The presence of osseous infections indicates that affected individuals lived with chronic disease rather than acute infections in which there would have been little alteration of bone tissue. It is more plausible that the prehistoric and historic populations living on the coast were affected by high endemic disease loads which elevated adult mortality but did not cause rapid, widespread death (Powell 1989). Differences in infection rates between sites appears to be associated with differences in environment rather than cultural or other factors (Powell 1989,1990).

There was a slight disparity in male and female health status in the Caplen population, although no conclusive differences could be shown given the small sample. Females had the most severe forms of infection, were more likely to have experienced disruption of tooth development, and had higher rates of anemic disease. The latter three conditions are often associated with nutritional deficiencies (El-Najjar 1976; Rose et al. 1985), which implies that there may have been some differential consumption or distribution of food resources based on gender.

Summary

The Caplen skeletal series provides excellent evidence for poor health among prehistoric and historic aboriginal peoples of the upper Texas coast. High rates of infection and metabolic disturbance in adults illustrate that endemic disease and possibly poor nutrition had a profound effect on the lives of these people. There is not strong evidence for widespread, virulent epidemic disease at Caplen. However, the late radiocarbon dates and trade goods suggest that some individuals buried there experienced the early effects of European colonization which were later to have a profound effect on the biological and cultural well-being of Native American populations in the region.

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Table 1. Age Distribution by Sex at the Caplen Site

Age Interval	Females	Males	Indeterminate	Total	Percentage
0- 9	0	0	5	5	10.4
10-19	3	0	4	7	14.5
20-29	4	3	2	9	18.8
30-39	5	6	5	16	33.3
40-49	6	2	1	9	18.8
50+	1	1	0	2	4.2
Total	19	12	17	48	100.0

Table 2. Percentage of Individuals Exhibiting Infectious Disorders

Medical Disorder	Juveniles		Adults: Males		Adults: Females		Adults: Indeterminate		Total	
	N	%	N	%	N	%	N	%	N	%
Osteitis	1/12	8.3	6/11	54.5	8/14	57.1	2/8	25.0	17/45	37.8
Osteomyelitis	1/12	8.3	4/11	36.4	8/14	57.1	1/8	12.5	14/45	31.1
Possible Treponema	0/12	0.0	2/12	16.7	3/15	20.0	0/9	0.0	5/48	10.4

N = number of individuals affected out of the number for which a particular disorder could be scored.

Table 3. Comparison of Infectious Disease Rates in Five Late Prehistoric Skeletal Series from the Texas Coast

Site	Infection Type: Periostitis N	Periostitis %	Osteitis N	Osteitis %	Osteomyelitis N	Osteomyelitis %	Total Infection Rate N	Total Infection Rate %
Caplen (41GV1)	21/45	46.7	17/45	37.8	14/45	31.1	31/48	64.6
Mitchell Ridge (41GV66)	4/13	30.8	2/13	15.4	1/13	7.7	5/13	38.5
Harris Co. Boys Sch (41HR80)	9/39	21.4	8/41	19.1	9/42	20.4	14/52	26.9
Shell Point (41BO76)	3/8	4.4	2/9	22.2	2/9	22.2	4/10	40.0
Blue Bayou (41VT94)	2/33	6.1	0/33	0.0	1/33	3.0	2/46	4.3

Table 4. Percentage of Individuals Exhibiting Metabolic Disorders

Medical Disorder	Juveniles N	Juveniles %	Adults: Males N	Males %	Females N	Females %	Indeterminate N	Indeterminate %	Total N	Total %
Enamel Hypoplasia	1/5	20.0	0/9	0.0	2/5	40.0	—	—	3/12	25.0
Cribra Orbitalia	1/7	14.3	3/8	37.5	5/9	55.6	0/4	0.0	9/28	32.1
Porotic Hyperostosis	1/7	14.3	3/8	37.5	5/9	55.6	1/5	20.0	10/29	34.5

Table 5. Trauma Rates for Adults by Gender

	Males N	Males %	Females N	Females %	Indeterminate N	Indeterminate %	Total N	Total %
Fracture	1/8	12.5	2/11	18.1	1/19	5.3	4/38	10.5
Dislocation	1/8	12.5	0/11	0.0	0/19	0.0	1/38	2.6
Sharp Trauma	1/8	12.5	0/11	0.0	0/19	0.0	1/38	2.6

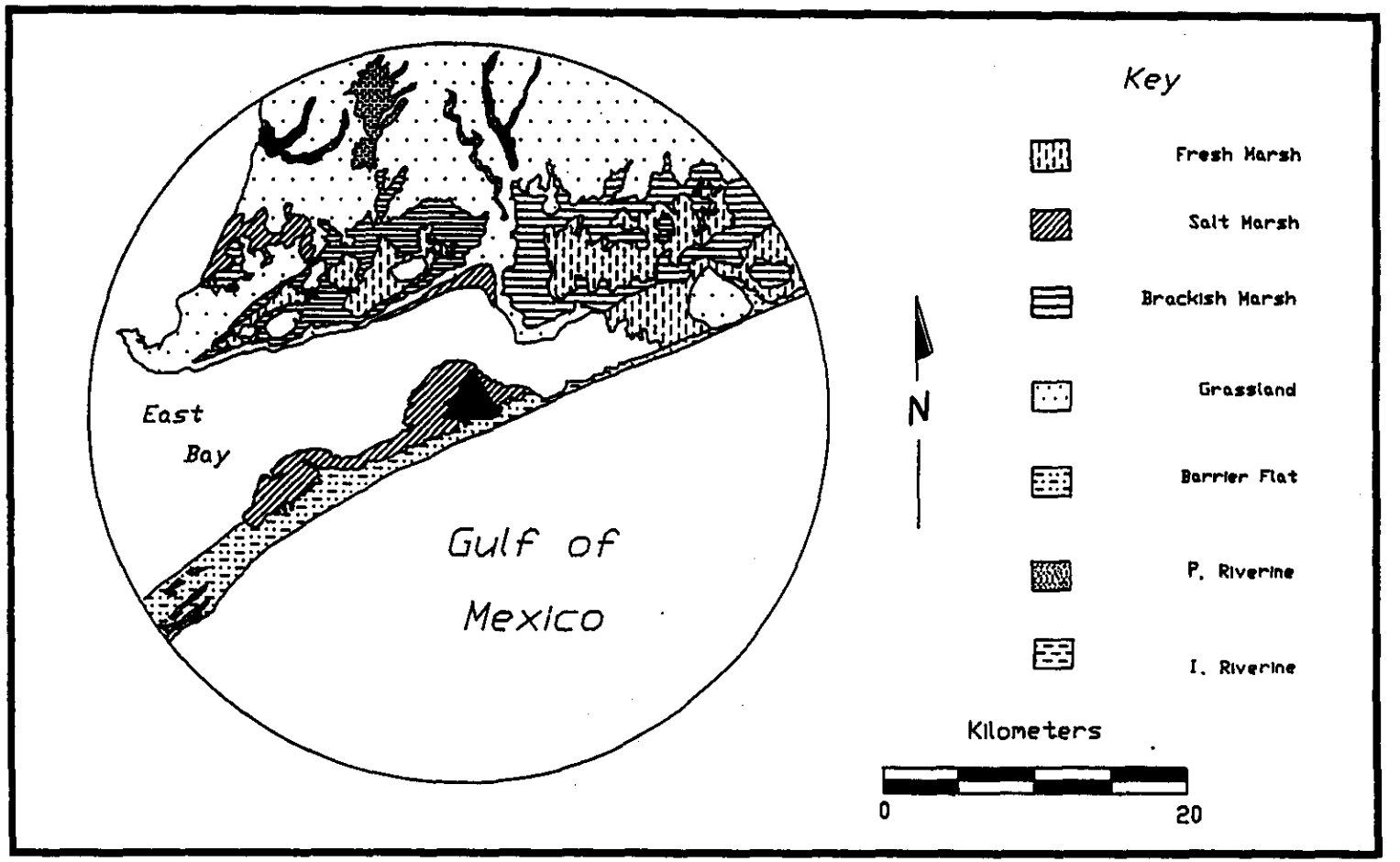

Figure 1. Site catchment analysis and biotope distribution at the Caplen site (41GV1) (from Powell 1989:Figure 6)

An Additional Radiocarbon Date for 41WH12, Wharton Co., Texas

L. W. Patterson and J. D. Hudgins

Introduction

The Houston Archeological Society conducted excavations at site 41WH12 in Wharton County, Texas in 1989, and results of this work have been published (Patterson and Hudgins 1989). Most of the important diagnostic cultural materials recovered at this site are from the Late Prehistoric period (A.D. 600-1500), with some indication of additional occupation of this site during the Historic Indian (A.D. 1500-1800) and Late Archaic (1500 B.C.-A.D. 100) time periods. Results of excavations at site 41WH12 indicate that this was probably a seasonal meeting location during the Late Prehistoric period for Indians from several adjacent geographic areas.

An additional radiocarbon date has been obtained for the 15-20 cm stratum of site 41WH12, where several distinctive types of artifacts were found. Together with a previous radiocarbon date, it is indicated that the most intense occupation of this site was during a short time interval in the middle of the Late Prehistoric period.

Radiocarbon dates

A new radiocarbon date of 960 ±80 years B.P., A.D. 990, has been obtained from a sample of freshwater mussel shell at the 15-20 cm stratum of Pit G (I-16221). Previous radiocarbon dates at this site (Patterson and Hudgins 1989) were 1050 ±80 B.P., A.D. 900, for the 18-25 cm stratum of Pit A, and 1930 ±80 B.P., A.D. 20, for the 45-50 cm stratum of Pit D, both dates also from freshwater mussel shell. All of the radiocarbon dates are consistent in regard to stratigraphic location. The oldest date, from the terminal portion of the Late Archaic period, was not associated with any time-diagnostic materials. The other two dates are from the Late Prehistoric time period.

Significance of Late Prehistoric radiocarbon dates

As shown by the concentration of cultural materials at site 41WH12 (Patterson and Hudgins 1989: Tables 2 to 5), the most intense occupation of this site occurred at an excavation interval between 15 and 30 cm. The radiocarbon dates of A.D. 900 and 990 are both from this excavation interval, and seem to show that the most intense occupation of this site occurred for only a short time interval.

As noted previously (Patterson and Hudgins 1989:2), diagnostic artifact types from the surface collection made by Hudgins seem to be related to artifact types found in-situ in the 15-20 cm stratum. This excavation interval is the first undisturbed level below the plow zone. The surface collection came from a road grading area where soil disturbance possibly occurred to a slightly deeper level than 15 cm.

Important artifact types found only in the 15-20 cm stratum and in the related surface collection at this site include bone-tempered incised pottery, large unifacial and bifacial lithic tools, fired clayballs and nonlocal chert types. The total time periods for use of these artifact types in this general area cannot be judged from data for site 41WH12 alone. Any of these artifact types could occur in this general geographic area over a longer time interval than is indicated by radiocarbon dates at site 41WH12. It is already known that fired clayballs were used over a very long time period in this area (Patterson et al. 1987).

Summary

A new radiocarbon date for site 41WH12 and a previous date together indicate that the most intense occupation of this site was during a short time interval in the middle of the Late Prehistoric time period, centered around a time interval of A.D. 900-1000. It has previously been noted (Patterson and Hudgins 1989:6) that there is evidence to indicate that Indians from several adjacent geographic ares were gathering at this location, probably on a seasonal basis in the fall.

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