

CHAPTER 12

SOCIOCULTURAL AND DEMOGRAPHIC DIMENSIONS OF MORTUARY PRACTICES

A Summary of the Chronological Data for the Mitchell Ridge Burials

This chapter considers the mortuary data from Mitchell Ridge with an eye to identifying synchronic patterning in the mortuary practices at the site, as well as possible diachronic changes or trends in those patterns over time. For such an inquiry, it is essential to first review the chronometric data for the burials. Radiocarbon dates have been obtained by Coastal Archaeological Research, Inc. on 21 individual burials from the site, and the assay results have been presented in the individual burial summaries in Chapter 8 and are listed in Figure 12.1 (and in the Appendix).

All but two of the radiocarbon dates on the burials come from assays run on bone collagen; the two exceptions are assays on wood charcoal, one sample coming from the secondary cremation, Feature 65-A, and the other from the small charcoal and ash concentration in the floor of Feature 64. The results on the bone assays are regarded as quite reliable, for two reasons. First, the corrected age of bone from Feature 64, Burial 1 is virtually the same as the corrected age on charcoal from the bottom of the same burial pit (2-sigma ranges A.D. 1663-1955 and 1644-1955, respectively). Second, the 2-sigma calibrated age ranges from various burials are in accord with the kinds of associated time-diagnostic grave goods: (a) the socketed bone points from Burial 10 (2-sigma range 45 B.C.-310 A.D.) represent an artifact type ascribed to the late Preceramic and Early Ceramic Periods by Aten (1983) and found in the relatively early Tchefuncte horizon in Louisiana (e.g., Neuman 1984); (b) the 2-sigma range for Burial 12 from the 1970s excavations is A.D. 670-998, which is in accord with the presence of two Scallorn arrowpoints in and near the vertebrae, a point type well dated to ca. A.D. 700-1250/1300 in Texas (Prewitt 1981; 1985); (c) late dates were consistently obtained on bone samples from burials associated European trade goods. Reasonable accuracy is thus indicated on the bases of paired bone-charcoal dates from Feature 64 and the fact that various classes of grave goods are known to date to the same periods as indicated by the radiocarbon determinations.

The dated burials fall into chronological periods, as follows:

1. *Late Archaic (or Preceramic)/Early Ceramic Period*. Only a single burial dates to this time period, Burial 10 excavated in the 1970s. The 2-sigma calibrated calendar date range is 45 B.C.-A.D. 310. As discussed in Chapter 8, this burial is anomalous at Mitchell Ridge by virtue of its extended body position, its eastward head orientation, and the kinds of associated grave goods (a dart point, and deer metapodial socketed bone points). As also noted in Chapter 8, in terms of body position and head orientation, the burial is more similar to the Group 2 Late Archaic burials at Ernest Witte (and other sites of comparable age on the coastal plain of Texas) than it is to later burials at Mitchell Ridge.

2. *Initial Late Prehistoric Period (A.D. 700-1250/1300)*. Four of the dated burials fall into this period. Three of these, Burials 4, 7 and 12, were excavated during the 1970s in the eastern part of the site. The fourth, Feature 25, was within the burial cluster in Area 1 investigated in 1992.

3. *Final Late Prehistoric Period (A.D. 1250/1300-1500)*. Six dated burials pertain to this period. One, Burial 3 from the 1970s, is in the eastern part of the site, the others include Feature 92-1 in Area 1, Feature 52, the isolated flexed interment in Area 3, and Features 86 and 87 in Area 4.

4. *Protohistoric Period (A.D. 1500-1700)*. Two graves in Area 4, Features 82 and 83, clearly can be placed in this period, on the basis of the radiocarbon age ranges and the presence of large blue-green glass beads (Ichtucknee Plain) as grave goods. A single semi-flexed interment in Area 1, Feature 30, yielded a 2-sigma age range extending from the end of the Final Late Prehistoric into the latter part of the Protohistoric (A.D. 1448-1638). This feature is placed in the Protohistoric Period because most of the 2-sigma range falls after 1500, and because two of the three calibrated intercept points (A.D. 1609, 1611) are in the early seventeenth century. Feature 61 is somewhat problematical in terms of chronological placement. The 2-sigma calendar range is 1443-1954, which means, solely on the statistics of the calibrated date range, it could date anywhere from the end of the Final Late Prehistoric to modern times. However, a Late Prehistoric (pre-European contact) date is rejected on the basis of the marked Caucasian features of this the adult female buried in this pit (see Powell, Chapter 9). A modern age is clearly unacceptable, given the definite aboriginal mode of burial (tightly flexed, with olive shell beads as grave offerings). The

burial thus must fall into either the Protohistoric or Early Historic. It is placed here in the late part of the Protohistoric, since the single intercept point is A.D. 1638. Also, the pit can be differentiated from nearby, definitely Early Historic grave pits (Features 62-65) by its smaller size, which is similar to that of Late Prehistoric and Protohistoric grave pits, though this in itself cannot be assumed to be chronologically definitive.

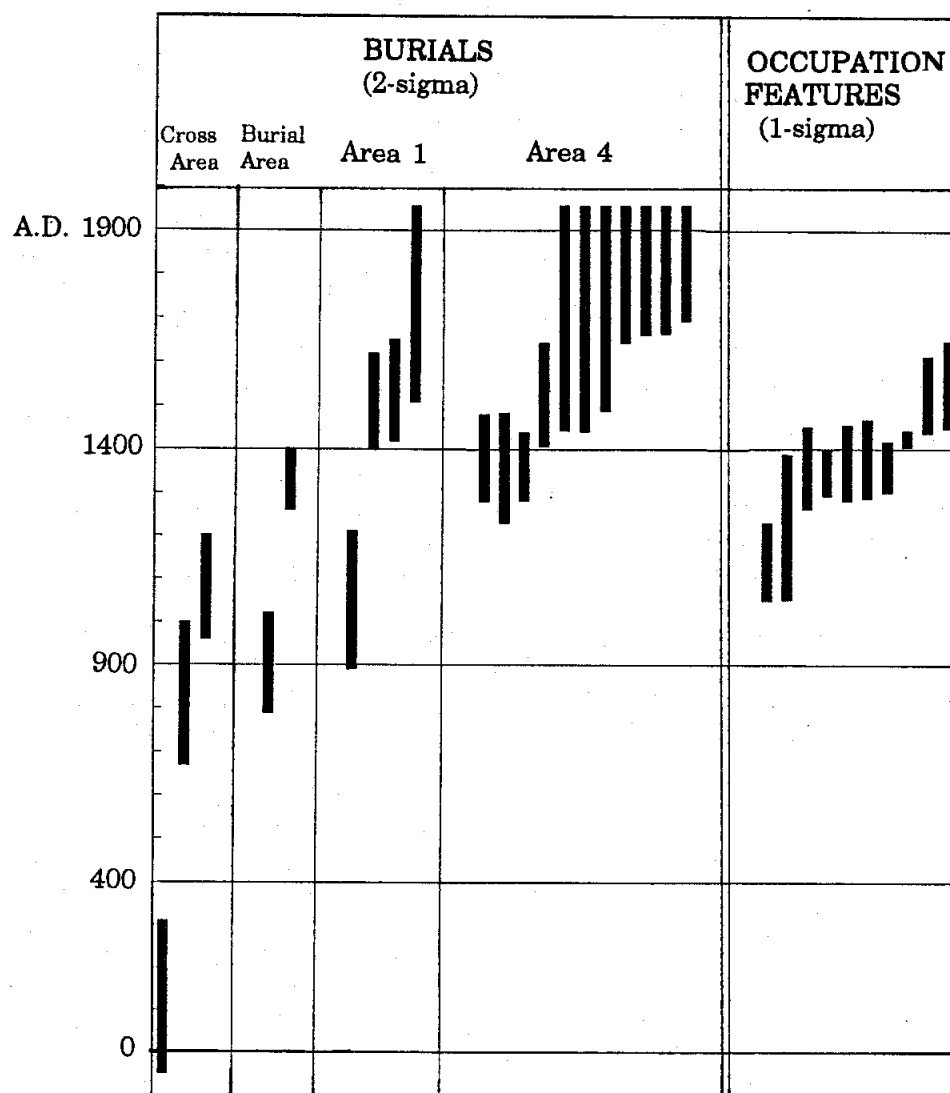
5. *Early Historic Period (1700-1800)*. Five burial pits, Feature 92-2 in Area 1 and Features 62, 63, 64 and 65 in Area 4, are placed in this period. All are radiocarbon-dated, and all have 2-sigma ranges which encompass the eighteenth century. The four pits in Area 4 can be more precisely placed chronologically, on the basis of glass trade beads, around the middle of the eighteenth century, as discussed in the last chapter. Feature 92-2 has a 2-sigma range of 1529-1954, and could thus be late Protohistoric in age, but will be treated as an Early Historic burial because four of the five intercept points post-date 1700.

Even the most liberal radiocarbon budgets cannot generally fund assays on all potentially datable archaeological materials, and the present project is no exception. Thus, thirteen burial features at Mitchell Ridge lack radiocarbon dates, and their chronological positions can only be estimated on the basis of the date ranges of assayed burials within the same clusters. The flexed and semiflexed, undated burials in the 1970s Burial and Cross Areas can probably be assigned to an undifferentiated Late Prehistoric Period, since the dated burials in those areas, with the exception of Burial 10, fall into either the Initial or Final Late Prehistoric Periods. Since none of the undated burials show the anomalous features of Burial 10 (extended body, eastward head orientation), it is inferable that they do not fall into the early time period to which that burial pertains. The other undated burials at Mitchell Ridge were in Area 1 (the secondary cremations, Features 3 and 24, and Features 26, 27, 28 and 35). Since the dated burials in Area 1 span a time frame from the Initial Late Prehistoric (Feature 25) through the Final Late Prehistoric and Protohistoric (Features 92-1, 30), and into the Early Historic (Feature 92-2), it must be assumed that the undated burials could pertain to any or all of these periods.

The chronological placement of the undated burials can, then, be estimated only very grossly, a situation which derives directly from the fact that *the radiocarbon dates for each spatial clustering of burials extend over two or more of the major chronological periods defined in this report*. In the 1970s Burial Area, one burial dates to the Initial Late Prehistoric (No. 4, 2-sigma A.D. 785-1005), and another to the Final Late Prehistoric (No. 3, 2-sigma A.D. 1268-1401). In the Cross Area, Burial 10 is terminal Pre-ceramic or Early Ceramic in age (2-sigma 45 B.C.-310 A.D.), while Burials 12 and 13 (A.D. 670-998) and 7 and 8 (A.D. 966-1205) are several hundred years later, in the Initial Late Prehistoric. As indicated above, the burials in Area 1 range in time from the Initial Late Prehistoric to the Early Historic. All of the grave pits in Area 4 are dated by at least one radiocarbon assay; they range from the Final Late Prehistoric through the Protohistoric and into the Early Historic.

Thus, despite the small size of each of the four burial clusters, each spans a period of at least several hundred years (see Figure 12.1). This fact in itself is interesting and probably socioculturally significant, since it shows long-term continuity in the use of small cemeteries. While it could be argued that the burial clusters discovered in the 1970s might have been parts of larger cemeteries, the bounds of which could not be determined by the limited extent of the hand excavations, this cannot have been the case for the clusters in Areas 1 and 4, where the extensive exposure of machine stripping indicated small, discrete groups of graves. It must be concluded, on the basis of the radiocarbon data and the spatial patternings, that well-defined locations were used as small cemetery plots over long periods of time and that long intervals of time separated many of the interments. How this was achieved is open to question, since, with the exceptions of the Early Historic burial pits Features 63 and 64, which were surrounded by wooden enclosures, no evidence was found for grave markers. The careful monitoring of the machine stripping operations almost certainly would have identified substantial stone markers, if such had been present; in fact, stone of any kind was notably absent from within (as well as outside of) the burial areas. Perhaps the selected burial areas, or perhaps individual graves, were marked by perishable materials of some sort. If this was the case, a remarkable degree of attention must have been paid to the long-term maintenance of such markers, considering the long periods of time involved. Certainly, burials within each cluster are too few to represent the kind of ongoing, year-to-year use which in itself would have afforded continuous knowledge of the location of the small cemeteries.

In any case, in order to trace long-term changes in mortuary patterns, it is essential to place each burial within a meaningful time interval, and the long time spans represented by each cluster of graves



Cross Area Burial 10 B.C. 45-A.D. 310 Burial 12 A.D. 670-998 Burial 7 A.D. 996-1205 Burial Area Burial 4 A.D. 785-1005 Burial 3 A.D. 1268-1401 Area 1 Fea. A.D. 789-1215 Fea. 92-1 A.D. 1402-1631 Fea. 30 A.D. 1432-1657 Fea. 92-2 A.D. 1529-1955	Area 4 Fea. 86 A.D. 1280-1480 Fea. 84 A.D. 1229-1483 Fea. 87 A.D. 1281-1439 Fea. 83 A.D. 1409-1641 Fea. 82 A.D. 1446-1955 Fea. 61 A.D. 1443-1954 Fea. 63 A.D. 1490-1955 Fea. 64 A.D. 1644-1955 Fea. 64 A.D. 1663-1955 Fea. 62 A.D. 1666-1955 Fea. 65-A A.D. 1694-1955	Occupation Features 1970s, shell A.D. 1051-1226 1970s, char. A.D. 1052-1385 Fea. 109 A.D. 1260-1449 Fea. 106 A.D. 1292-1396 Fea. 105 A.D. 1279-1449 Fea. 4 A.D. 1285-1465 1970s, shell A.D. 1300-1416 Fea. 114 A.D. 1405-1441 1970s, shell A.D. 1438-1611 Fea. 9 A.D. 1448-1644
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Figure 12.1. Calibrated radiocarbon ranges for burial groups and features, Mitchell Ridge.

preclude the confident placement of individual undated burials within a narrow chronological time slot. For this reason, the diachronic dimension of the following discussion is considered largely on the basis of those burials for which there are radiocarbon dates.

The Mitchell Ridge Burials and Galveston Bay Area Mortuary Practices

Leaving aside Burial 10 from the 1970s, which is anomalous both chronologically and in terms of key attributes, there is good reason to infer that the burials at Mitchell Ridge represent a single basic mortuary tradition. In the aggregate, certain fundamental similarities in the burials show long-term continuity, from the Initial Late Prehistoric into the Early Historic Periods. Perhaps most basic is the fact that, with the exception of Feature 52, the isolated primary interment in Area 3, all burials were found within small but discrete cemetery groups (assuming that the burial clusters in the Cross and Burial Areas were more or less completely exposed). The fact that the small cemeteries were each used intermittently over several centuries suggests, in itself, a rather remarkable degree of continuity representing deeply rooted traditional behavior, a strong cognitive linkage between people and place and, probably, a continuous oral tradition concerning proper locations for burial. Also seemingly fundamental is the fact of the virtually consistent pattern of headward orientation. Although there is minor variation, almost all primary (articulated) burials were oriented with the head toward the west to south quadrant of the compass, regardless of burial cluster or chronological period (see Figures 12.2 and 12.3); the sole exception is Feature 27, the neonate infant burial in Area 1. Mode of burial varies, but the most common kind of burial throughout is the single semiflexed or, less commonly, fully flexed primary interment. Secondary cremations probably extend temporally from at least the Final Late Prehistoric into the Early Historic; the only radiocarbon-dated example is the Early Historic Feature 65-A, but cremations found within clusters of Late Prehistoric and Protohistoric graves in Areas 1 and 4 (Features 3, 24, 85) probably fall somewhere within those time periods. The cremated bones in the bundle burial in Feature 63 definitely can be assigned to the Early Historic Period. Another common thread among burials of different time periods is found in certain recurrent kinds of grave offerings. Cylindrical conch columella shell beads were found with Burial 7 from the 1970s, dated to the Initial Late Prehistoric, with the Protohistoric burials in Features 82 and 83, and with Early Historic burials in Features 63 and 64. Whooping crane ulna whistles come from burials dating to the Late Prehistoric (Feature 86), the Protohistoric (Feature 82), and the Early Historic (Features 63, 64 and possibly 65-A). Finally, the presence or red ochre stains in the mid-section of the bodies buried in graves of various periods indicates a long-term pattern of mortuary behavior.

The combined burials at Mitchell Ridge (excepting Burial 10), show fundamental linkages with mortuary practices at other sites in the Galveston Bay Area, as documented by Aten. Aten based his discussion upon the findings at the cemetery at the Harris County Boys School Site (Aten 1976), with additional data garnered from other sites in the Galveston Bay area. The salient features of mortuary practices in the area (Aten 1976) are:

1. Primary flexed and semi-flexed interments as the common mode of burial. Cremations and secondary burials are rare, and the latter may not occur at all, since possible secondary interments may be only earlier burials disturbed by later interments. Isolated, single primary interments occur sporadically.
2. Only rare multiple interments. Aten noted these only from the Jamaica Beach Site on Galveston Island (he did not consider the graves with adult females and infants to be true multiple interments, since a single death event associated with pregnancy may have been involved).
3. Grouping of interments in small, discrete cemeteries which were probably located short distances from habitation areas. Aten hypothesized that the emergence of cemeteries correlated with growing populations, which were in turn systemically linked to the introduction of highly efficient resource extraction technologies such as fish weirs and the bow and arrow.
4. Offerings occur with less than one-half of the burials, and consist mainly of items of personal adornment, commonly shell beads. Occasional items of probable magico-religious significance include "bone dice", bird bone whistles and possible rattles represented by small pebbles and drum fish teeth. Items of personal adornment and implements (tools) may have been mutually exclusive as grave goods.
5. Red ochre in some graves.

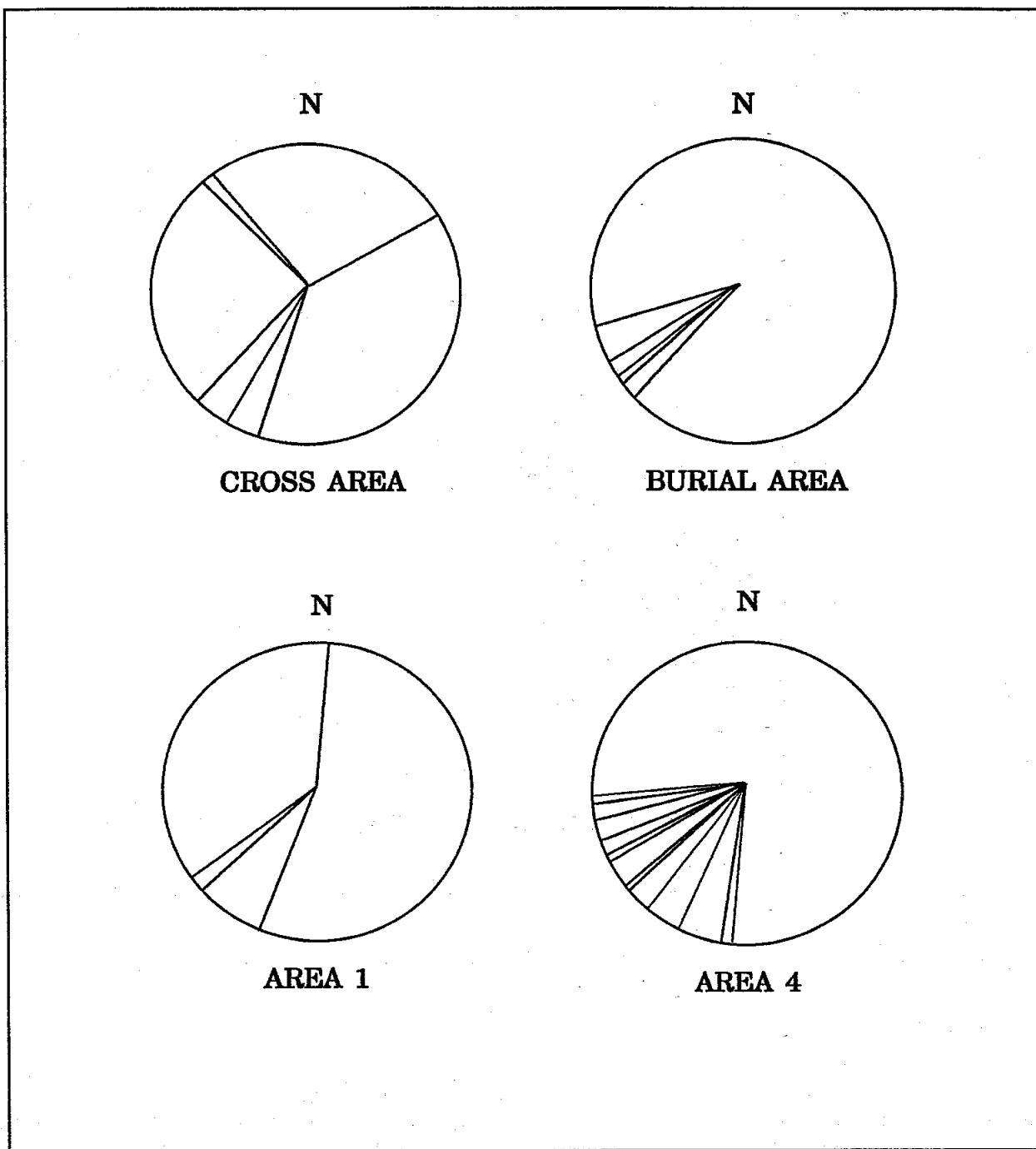


Figure 12.2. Headward orientations of primary burials in the four investigated aboriginal cemeteries at Mitchell Ridge. All orientations are shown relative to true north.

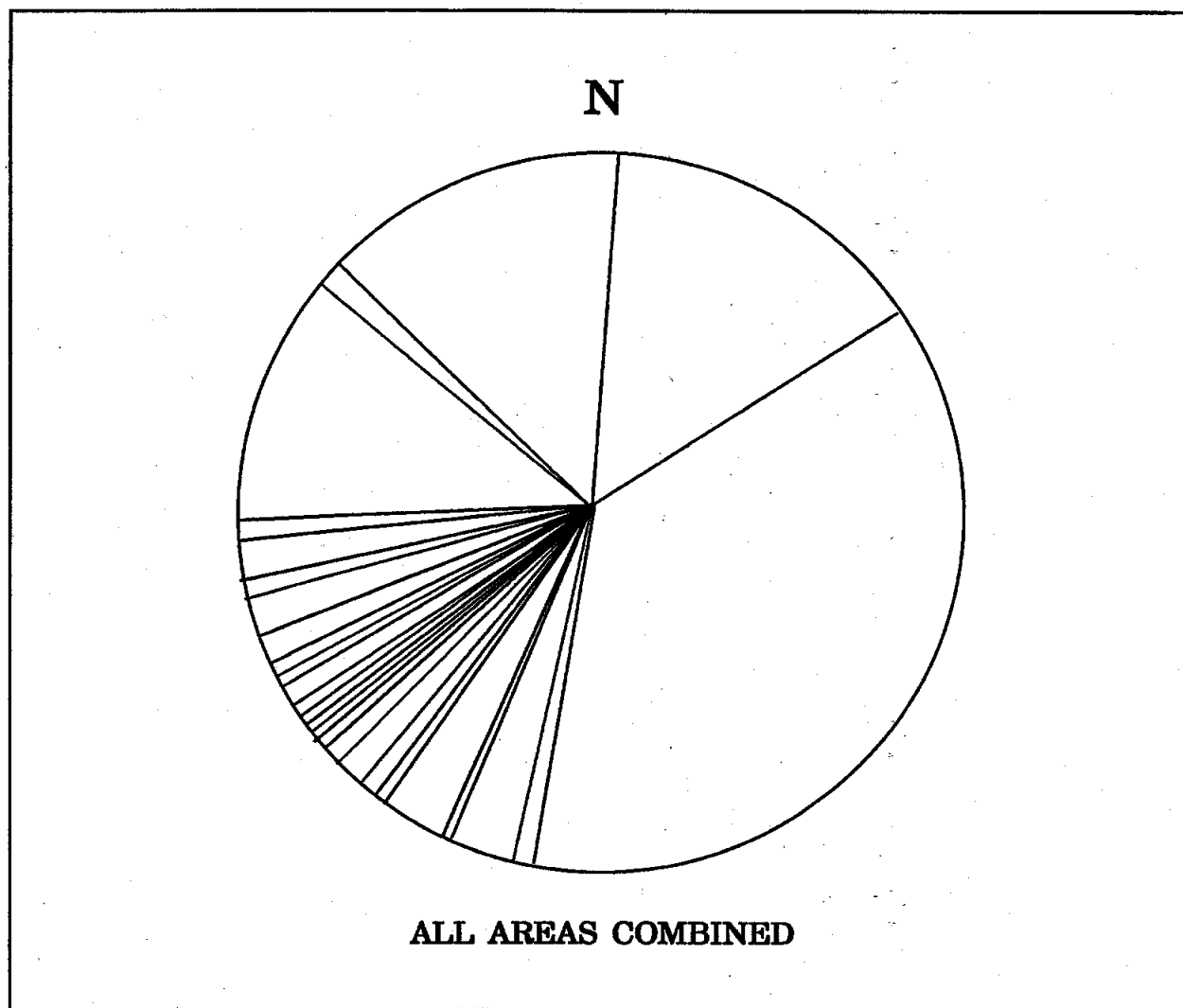


Figure 12.3. Headward orientations of all primary burials at Mitchell Ridge, shown relative to true north.

6. Chronologically, Aten believed that the tradition emerged during the Ceramic Period, and noted the absence of burials prior to his Clear Lake Period. A fundamental stability in the use of grave goods in mortuary symbolism is suggested by the apparent fact that the kinds and ranges of goods do not seem to have changed through time. However, Aten (1976:103) also suggests that the number of individuals receiving grave goods may have declined through time, so that by historic times offerings were almost non-existent with the deceased.

7. Body/head orientation are considered not to have been casual or random, but to have had religious significance. Aten suggests that there was a shift through time from eastward to westward orientation.

8. Aten believed that the occurrences of grave goods indicated an essentially egalitarian social organization, of the sort in which "formal ranking and stratification were absent and distinctions between group members (other than age and sex) are usually not enduring" (Aten 1976:98). Achieved statuses may have included shamans, headmen, craft skill statuses and, perhaps, religious status differences indicated by varying headward orientation and/or presence of red ochre in graves.

Some similarities between the Galveston Bay Area Mortuary Tradition and the Mitchell Ridge

burials are readily apparent. The predominant mode of burial-- single, flexed or semiflexed primary interment-- is the same in the Galveston Bay Area burials and at Mitchell Ridge. Also shared is an emphasis on non-mundane grave goods, items of personal adornment and objects perhaps imbued with magico-religious significance, including specific kinds of artifacts such as conch columella beads, bird bone whistles and possible rattles, and bone "dice". Red ochre is another shared class of grave inclusion which was almost certainly of symbolic ritual significance. Small cemeteries, an attribute of Aten's Galveston Bay mortuary pattern, were present at Mitchell Ridge, and may have been the rule. Additionally, the burial clusters in Areas 1 and 4 were located away from the main habitation area at the east end of the site, in keeping with Aten's suggestion of spatially separated cemetery locations.

Given these basic similarities, it appears that mortuary practices at Mitchell Ridge were closely related to Harris County Boys School and other sites around Galveston Bay, a suggestion already made by Story (1990:262-263) on the basis of the limited data available from the 1970s excavations. This is hardly surprising, considering the location of the site, and it is reasonable to conclude that the Mitchell Ridge burials represent expressions of the same general, regional pattern of behavior and cognition concerning death and burial as at the various burial sites examined by Aten.

There are, however, some apparent differences, as well. On the basis of the evidence available to Aten, cremations appeared to be extremely rare among Galveston Bay Area burials (Aten 1976); only a single instance was reported from site 41CH172 in the Trinity River delta area. Somewhat contrastingly, Mitchell Ridge produced five secondary cremations (Features 3, 25, 85, 63, 65-A). At least six individuals are represented; the MNI is 1 per feature, except for the bundle burial in Feature 63 which contained the cremated remains of at least two individuals. Thus, 12% of the individuals represented in excavated burials were cremated, indicating that cremation was a recurrent mode of burial, which in turn implies a culturally defined significance.

The presence of secondary, uncremated burials was problematical in Aten's definition of areal mortuary practices. Instances of disarticulated skeletons at sites like Harris County Boys School and Caplen on Bolivar Peninsula (Campbell 1957) were recognized as possible secondary burials, but an alternative explanation-- that post-burial disturbances (e.g. by subsequent burials with confined cemetery boundaries) resulted in disarticulation-- could not be ruled out. At Mitchell Ridge, it is possible to distinguish between true secondary burials and skeletons which were simply disarticulated by later re-opening of grave pits. Features 62 and 63 clearly contained the jumbled bones of what were originally flexed or semiflexed interments later disturbed by placement of additional individuals in the grave. On the other hand, the disarticulated bones in Feature 92-1 certainly represent a secondary burial, since Powell's examination of the bones revealed cut marks indicative of intentional de-fleshing (see Chapter 8). The Protohistoric burial, Feature 82, contained the secondary interments of two individuals, and the Early Historic bundle burial in Feature 63 contained the secondary burials of two uncremated and at least two cremated individuals.

The intentional selection of one or a few bone elements for secondary interment, herein termed "token burial", was not identifiable as a mortuary practice among the burials known to Aten, though he speculated on the existence of alternate modes of burial to account for what he believed was an under-representation of burials relative to probable population density in the Galveston Bay Area (Aten 1976:93). Aten noted the presence of rare instances of bone elements found isolated within site deposits, and suggested that such finds might represent surface disposal of bodies and subsequent natural disarticulation and scattering of bone elements (Aten 1976:64). The unambiguous definitions of pit outlines at Mitchell Ridge (probably not readily possible within the types of matrices at many of the sites reported by Aten) permits the confident assertion that selected bones were intentionally placed within pits, presumably as a token representation of the deceased individual. Seven (14%) of the 51 individuals from the excavated burials are thus represented, four in Area 1 (1 each in Feature 26 and 27, two in Feature 28) and three in Area 4 (2 in Feature 61 and 1 in Feature 63). As may be seen in Table 12.1, six of the seven individuals are juveniles, suggesting that this mode of burial was most commonly reserved for children. There also appears to have been selectivity in the bone elements, since five of the seven individuals are represented mainly by bones from the hands and wrists, and the other two are represented only by patellae.

The findings at Mitchell Ridge do not conform to Aten's suggestion that the proportion of individuals with grave goods declined through time. Among the radiocarbon-dated burials at the site, offerings are relatively abundant in the Final Late Prehistoric, Protohistoric and Early Historic Periods. In fact, as discussed further on, the data suggest, if anything, a possible trend toward greater disposal of

Table 12.1. Token burials, Mitchell Ridge Site, showing token bone elements, number of token individuals and their age group, and presence/absence of associated primary interment.

Area/Feature	Bone elements	No. Individ.	Age	Associated primary interment*
Area 1				
Feature 26	patella	1	juvenile	none
Feature 27	patella	1	juvenile	neonate
Feature 28	carpals, metacarpals, hand phalanges, proximal radius epiphyses, distal humerus epiphysis	2	2 juveniles	none
Area 4				
Feature 61	carpals, metacarpals, metatarsals	2	1 adult, 1 juvenile	adult female
Feature 63	radius, ulna, metacarpals	1	juvenile	adult male, bundle burial
* "Associated" is here defined as a primary interment within the same grave pit.				

goods with burials from Initial Late Prehistoric into Early Historic times.

As also considered below, the findings at Mitchell Ridge may require modification of the assumption of an egalitarian social organization in which status differences revolve more or less entirely around age and sex distinctions. By far the greatest abundance of interred goods-- both in terms of the percent of graves with offerings and the range of offering categories or classes-- were found in one of the four cemetery groups (Area 4), suggesting an intentional spatial segregation of status burials and a corresponding hierarchical division within aboriginal society.

A final distinction which can be made between the Mitchell Ridge burials and the burials reviewed by Aten is headward orientation. Burials from the Harris County Boys School Site and most other sites considered by Aten showed highly variable headward orientations. Among those burials for which headward orientation could be determined at Harris County Boys School, 12 were oriented toward the eastern hemisphere of the compass, 4 to the western hemisphere, and 3 to the north. A similar variability is evident at the Caplen Site and other sites around Galveston Bay. The data on headward orientation available for 76 primary burials at sites around Galveston Bay, summarized here in Table 12.2 indicates a general pattern of variability: 41, or 54%, of burials were headed to the western half of the compass, and 29, or 38% were headed to the eastern half, the small residual number being to the south (N=4) or the north (N=2).

This contrasts rather strikingly with burials not only from Mitchell Ridge, but from other upper coast cemeteries to the south of Galveston Bay and its immediate shoreline zone. As already discussed, excepting Burial 10, 27 of the 28 (96%) primary interments at Mitchell Ridge (for which headward

Table 12.2. Orientation of ceramic period burials, Galveston Bay & West Bay-Brazos Delta areas

Site	Burial number	Sex / Age	Body position	Grave goods	Headward orientation
Caplen (41GV1)	B. 1	F	flexed	columella beads	E
	B. 2	F	semi-flexed	ochre, clam shells, 14 drills, columella beads.	W
	B. 3	F	flexed	none	E
	B. 6b	adolescent	flexed	none	W
	B. 11	adult	flexed	"beads"	E
	B. 12	infant	NA	bone beads, glass beads, shell beads, tortoise shell rattle w/ 2 pebbles	E
	B. 15	adult	flexed	1 "bead"	W
	B. 16	adult	flexed	none	E
	B. 18	adult	semi-flexed	none	S
	B. 19	M	semi-flexed	none	NE
	B. 22	adult	flexed	none	NE
	B. 23	F	semi-flexed	none	E
	B. 24	F	NA	22 shell beads (necklace)	W
	B. 25	adult	semi-flexed	13 "pigment stones"	W
	B. 26	adult	flexed	none	SE
	B. 27	adult	flexed	none	W
	B. 28	adult	semi-flexed	none	W
	B. 29	adult	flexed	none	W
	B. 32	F	semi-flexed	4 "beads"	W
	B. 34	adult	semi-flexed	none	E
	B. 35	F	semi-flexed	none	W
	B. 36	adult	semi-flexed	none	W
	B. 37	adult	semi-flexed	red ochre	W
	B. 38	adult	semi-flexed	none	SE
	B. 41	adolescent	semi-flexed	none	W
	B. 42	adult	semi-flexed	pigment stone	W
	B. 43	F	flexed	none	W
	B. 44	adult F	flexed (?)	90 "small beads"	SW
	B. 46	M (?)	flexed	none	W
	B. 52	adult	flexed	"1 bead"	NW
	B. 53	M	semi-flexed	red ochre	N
	B. 54	juvenile	NA	red ochre, orange pigment	SW
	B. 56	adult	semi-flexed	4 large conch columella beads	S
	B. 57	adult	semi-flexed	"unidentifiable dark flaky substance"	NW
	B. 58	adult	semi-flexed	none	W
	B. 60	M	semi-flexed	none	NW
	B. 61	adult	semi-flexed	none	S

Table 12..2, cont.

Site	Burial number	Sex / Age	Body position	Grave goods	Headward orientation
Caplen (41GV 1) cont.	B. 62	M	flexed	none	N
	B. 63	adult	NA	none	W (?)
	B. 64	F	semi-flexed	red ochre	W
	B. 65	juvenile	NA	none	W
41HR581	F. 3	M	semiflexed	beads, whistle.	W SW
	F. 11	F (?)	bundle	none	NA
	F. 16	M	flexed	bone beads	W SW
	F. 17	f (?)	bundle	none	NA
41GV 53	B. 1	F	flexed	sherd, busycon fragments.	W
	B. 2	M	NA	core, arrowpoint, hematite, asphaltum, engraved bird bone.	NA
	B.3	M juvenile	partly articul. articulated	varied	NW(?) NA
	B.4	NA	NA	?	NA
41CH 32	NA	adolescent	semi-flexed	none	E NE
41CH 110	NA	adult M(?)	flexed	ochre	W SW
41CH110	NA	adult F (?)	flexed	ochre	W SW
41HR 7	NA	adult M	flexed	none	N NE
41HR 7	NA	adult F	semi-flexed	none	SE
41HR 7	NA	adult F	flexed	x*	SE
41HR 5	NA	adult F	flexed	none	W
41HR 5	NA	adult M	flexed	none	E
41HR 5	NA	adult M	flexed	none	S
41HR 5	NA	adult F	semi-flexed	none	E NE
41CH 16	NA	adult NA	flexed	none	W
41CH 16	NA	adult M	flexed	none	headed W
41CH 16	NA	adult M	flexed	ochre	W NW
41CH 13	NA	adult NA	semi-flexed	x*	headed W
41CH 13	NA	adult NA	flexed	none	headed SW
41CH 13	NA	adult NA	flexed	none	headed SSW
41CH 13	NA	adolescent	NA	ochre, x*	headed SSW
Harris County Boys School (41HR 80)	B. 1	30-40+ M	semi-flexed	incised bone awls	N
	B. 1a	adult F	semi-flexed	none	NA

x* Aten (1976) indicates grave goods for this burial but does not specify kind

Table 12.2, cont.

Site	Burial number	Sex / Age	Body position	Grave goods	Headward orientation
Harris County Boys School (41HR 80) cont.	B. 2	25-35 M	semi-flexed	columella beads, asphaltum, ulna awls, ochre, incised bone awls, flageolets, rattle, antler flaker, antler projectile point, antler tool-making residue	W NW
	B. 3	0-2 ?	NA	columella beads, ochre	N
	B. 4	30-40 F	flexed	shell pendant, splinter awl	SE
	B. 5	30-40 M	NA	ulna awl	NA
	B. 6	adult M (?)	semi-flexed	x*	W
	B. 7	adult ?	skull only	none	NA
	B. 8	20-30 F	skull only	none	NA
	B. 9	20-30 F	NA	none	NA
	B. 10	20-25 M	semi-flexed	none	E
	B. 11	3-5 ?	NA	none	E
	B. 12	5-8 ?	semi-flexed	none	SE
	B. 13	30-40 M	flexed	mussel shell, x*	E SE
	B. 14	30-35 M	semi-flexed	mussel shell, ochre	N NE
	B. 15	30-40+ ?	NA	none	NW
	B. 16	30-40 M	semi-flexed	x*	W
	B. 17	18-22 F	NA	none	NA
	B. 17a	adult ?	NA	none	NA
	B. 18	+5 ?	flexed	none	N
	B. 20	30-40 F	flexed	mussel shell, ochre	NA
	B. 21	22-25 M	flexed	mussel shell, ochre, x*	SE
	B. 22a	10-19 ?	NA	none	NA
	B. 22b	0-2 ?	NA	none	NA
	B. 23	NB 0-5 ?	in ceramic pot	x*	NA
	B. 24	13-17 M	NA	none	NA
	B. 25	20-30 M	disarticulated	none	NA
	B. 26	infant ?	skull only	none	NA
	B. 29	30-40+ M	flexed	none	E NE
	B. 30	?	NA	x*	E
	B. 31	20-25 M	flexed	none	NE
	B. 32	adult F (?)	flexed	none	SE
	B. 33	20-30 M	semi-flexed	none	NE
	B. 34	adult ?	NA	none	NA

x* Aten (1976) indicates grave goods for this burial but does not specify kind

Table 12.2, cont.

Site	Burial number	Sex / Age	Body position	Grave goods	Headward orientation
Jamaica Beach Site (41GV5)	A	35 (?) F	flexed	none	W NW
	B	+/-30 M	flexed	none	W
	C	+/-12 ?	flexed	none	W NW
	D	40-50 M	semi-flexed	none	E SE
	E	40-45 M	semi-flexed	none	W
	F	infant ?	disturbed	none	NA
	G	adult F	semi-flexed	none	W
	H	adult M	semi-flexed	none	NW
	I	20-25 F	flexed	none	W
	J	adult F	flexed	none	W
	K	40-45 F	flexed	shells	W
	L	35-40 M	flexed	none	W
	M	adult ?	semi-flexed	none	W
	N	adolescent ?	flexed	none	W
	O	50+ M ?	semi-flexed	none	W
P	50-55+ M ?	semi-flexed	none	W	
Q	50-55+ F?	flexed	none	W	
R	adult ?	semi-flexed	none	W	
S	adult F ?	semi-flexed	bone beads, bone pendants, bone awls	W	
Shell Point (41BO2)	1	25-30 M	flexed	none	W
	2	5-6 ?	semi-flexed	conch columella bead necklace	W
	3	+/-50 M	semi-flexed	none	W NW
	4	40+ F	semi-flexed	shell pendant	SW
	5	40+ M	flexed	none	NW
	6	10-11 ?	flexed	none	W
	7	40+ M	flexed	none	W
	8	adult F	skull only	none	NA
	9	NA	flexed	none	W

Data sources: Caplen Site, Campbell 1957; 41HR581, Gadus and Howard 1990; 41GV53, Hines 1993; Shell Point, Wilkinson and Hole 1975; all others, Aten 1976.

orientation is clear) are headed to the western hemisphere. The sole exception is the neonate infant, Feature 27, which was headed north. A similar consistency in headward orientation is evidenced at the cemetery at the Jamaica Beach Site (41GV5), located on Galveston Island just a few kilometers south of Mitchell Ridge (Ring 1963; Aten 1976; Story 1990:266-267), as well as at the Shell Point Site (41BO2) on the mainland near the mouth of the Brazos River (Hole and Wilkinson 1975). At Jamaica Beach, there were 19 flexed or semi-flexed interments, the headward orientation of which was determinable in 18 cases. Fourteen (78%) were oriented to the west and three (17%) to the west-northwest. Only a single burial was oriented to the eastern half of the compass. At Shell Point, all eight primary interments were headed to the western half of the compass, five to the west, two to the northwest and one to the southwest.

Considering all the burials listed in Table 12.2, plus the 28 primary interments from Mitchell Ridge, there are 130 burials from the upper Texas coast area for which headward orientation is documented, a sizeable combined sample. It is probably significant, therefore, that there appears to be a geographically definable shift in headward orientations, from variable (both eastward and westward) at sites immediately around Galveston Bay, to almost exclusively westward at sites on Galveston Island and in the Brazos River delta area. In view of the fact that the Mitchell Ridge burials span a time frame from the Initial Late Prehistoric through the Early Historic, this probably should be regarded as a synchronic, geographic pattern rather than a matter of long-term change in preferred burial orientations, as suggested by Aten. It can thus be inferred that, despite some basic similarities in mortuary patterns throughout the upper coast, there was at least one basic, geographically definable difference in approach to burial ritual.

It is appropriate here to consider the chronological placement of the Jamaica Beach cemetery, since Aten (1976) assigned these burials, with their nearly consistent westward head orientation, to the late end of the temporal continuum. His chronological placement was based on two uncorrected radiocarbon dates on shells (*Dosinia* and *Littorina*) apparently placed with two of the graves, and three shell samples from the occupation midden adjacent to the burial cluster (2 oyster, 1 *Littorina*). The *Dosinia* and *Littorina* shells from the burials produced dates of A.D. 1460 +/-150 and A.D. 1500 +/-110 (490 +/-150 B.P. and 450 +/-110 B.P.). The shell samples from the midden, one of *Littorina* and two of oyster, yielded uncorrected dates of A.D. 1500 +/-110, A.D. 1280 +/-120 and A.D. 1120 +/-120, respectively. At face value, a Final Late Prehistoric or even Protohistoric age would seem to be indicated. However, considering the consistent 300-400 year 13C correction factor required for estuarine shells, as discussed in Chapter 3, the calendar dates for the burials should probably be pushed back into the Initial Late Prehistoric Period (*Littorina* is estuarine, though *Dosinia* is a higher-salinity marine species; see Andrews 1977). The same correction presumably must be made for the oyster and *Littorina* samples from the midden at Jamaica Beach. In short, the Jamaica Beach cemetery is probably several hundred years older than Aten's original estimate, so that the predominant westward headward orientation should not be assumed to be the product of a long-term trend. Jamaica Beach is thus congruent with the findings at Mitchell Ridge, insofar as a nearly consistent westward head orientation appears prior to the Final Late Prehistoric.

The precise cultural mechanism(s) which underlay the geographic differences in headward orientation cannot be determined with our presently available data. Presumably it involved differences in socioculturally informed cognition concerning mortuary rites, but exactly what level of sociocultural difference is represented is open to question. It is tempting to infer a correspondence with a major sociocultural or linguistic boundary (e.g. Akokisa vs. Karankawa), but less fundamental or smaller-scale sociocultural differences may actually be indicated, such as the sodalities which Aten (1976) suggested for explaining variable orientation in the his Galveston Bay Area burial samples. With the presently available empirical evidence, it is only possible to conclude that, while mortuary patterns at Mitchell Ridge are fundamentally linked with Galveston Bay area mortuary practices, there is patterned spatial variability, the cultural significance of which remains to be elucidated.

The Mitchell Ridge Burials and the Question of Social Statuses

It has long been an archaeological axiom that the variable treatment of individuals at death, as expressed in prehistoric burials, reflects in some way how those persons were regarded by the members of their communities during life. This is obviously true in extreme cases, i.e., when the prehistoric culture in question involved a highly ranked social structure in which wealthy elites were buried under very different circumstances and with very different kinds and quantities of accoutrements than were people of distinctly lower status. However, while the elite tomb burial of a Maya ruler, for example, could hardly

be mistaken for the simple grave of a Mayan peasant, the social significance of differences between graves produced by a less hierarchically organized society may be less obvious. Nonetheless, there are certain differences among the Mitchell Ridge burials which appear to correlate in a patterned way, which inferably reflect status differences among living individuals, and perhaps socially defined groups of individuals within aboriginal society. To the extent that such correlations can be identified, it is possible to gain a degree of insight into aspects of the social relations which informed the lives of the aboriginal occupants of the site.

Modes of Burial as Possible Indicators of Status Differences

There are four basic modes of burial at Mitchell Ridge (once again excluding Burial 10 in the Cross Area), representing the remains of 50 individuals (excluding Burial 8 in the Cross Area, which could have been either a secondary burial or a disturbed primary burial): Primary interments (generally flexed or semi-flexed), secondary burials, token burials, and secondary cremations. By far the single most common form of burial is the primary interment, which accounts for 30, or 60%, of the individuals. Thus, the question arises as to whether the less common forms of burial might reflect status differences within the society.

The significance of the secondary interments is difficult to assess, since there are no clear correlations with either wealth (as represented by grave goods), age or sex. Some secondary burials have no accompanying grave goods (Feature 92-1), while others are accompanied by considerable numbers of grave goods (Features 82 and 63). Also, various ages and both sexes are represented: Feature 92-2 contained the remains of an adult male and a juvenile of indeterminate sex; the bones in Feature 82 represent an adolescent female and an adult of indeterminate sex, and the non-cremated secondary interments in the bundle burial in Feature 63 represent an infant and a juvenile, both of indeterminate sex. The one characteristic which all of these burials have in common is that in each case the pertinent grave pit contains the disarticulated remains of two individuals. Though rather speculative, particularly considering the small sample, it is possible that the secondary burials represent individuals whose death preceded burial by some time, and that the bones of more than one individual were curated so that the remains of related individuals could be interred together in the same location.

The case of the token burials is interesting in that six of the seven individuals represented (86%) are subadults. This suggests a correlation between the mode of burial and a distinct age group within the larger population, though the small sample size does not justify a confident conclusion to that effect. If the correlation did actually exist, it presumably was linked to a difference in the way children as opposed to adults could legitimately be treated in the context of mortuary ritual and belief, and this in turn must have been related to special concepts/attitudes regarding children.

Finally, there are the five secondary cremations, which account for at least six (12%) of the individuals known from the site. Interpretation is on shaky ground here, since in most cases it is difficult to ascribe sex or gender to cremated bones. Most appear to represent adults, but of indeterminate sex. On the other hand, one of the two cremated individuals in the bundle burial, Feature 63, is a subadult. If Cabeza de Vaca is to be believed, cremation was a mode of burial reserved for shamans in the upper coast area (see Chapter 4), in which case it certainly would correlate with a distinct social role and, considering Cabeza de Vaca's statement that only shamans could have multiple wives, probably a distinct status as well. At the same time, Cabeza de Vaca wrote that shamans were older adult males, whereas at least one of the cremated individuals from Feature 63 died before reaching adulthood. To make the correlation even a bit more uncertain, the only grave good which can reasonably be inferred to be a shaman's possession-- the rat-tooth bloodletting instrument in Feature 87-- accompanied an uncremated, primary interment (albeit an older adult male). The differential treatment of the cremated individuals sets them apart, but it is possible that factors other than role or status, such as ease of storage and transport of remains, may have been involved.

Grave Goods as Indicators of Status

A common approach to defining status differences in burial populations is the differential degrees of wealth that accompanied different individuals (e.g., Binford 1964, 1972; Peebles and Kus 1977; Chapman and Randsborg 1981; Brown 1981; O'Shea 1984). When there are discernable correlations between relative wealth in burials and identifiable differences in individuals, such as age or sex, or when there are

spatial patterns of differential wealth within or between cemeteries, social and/or socioeconomic distinctions can be inferred to be reflected in mortuary patterns.

According to age/sex classes within the burial population at Mitchell Ridge, adult males comprise the class of individuals most frequently provided with burial accoutrements. Eight of thirteen adult males, or 61.5%, were buried with grave goods (see Table 12.3). Adult females were buried with offerings much less frequently; only four of a total of nine individuals, or 44.4%, had grave goods. Offerings were placed with a similar percentage of subadults; six of the fourteen children, or 43%, were buried with grave goods. In terms solely of the frequency with which grave goods were placed according to age sex, males were clearly given priority, and children and adult females were given at least one class of offering with about equal frequency (see graph, Figure 12.4).

The placement of material in graves according to age/sex is further elucidated by considering the number of classes of goods present, since the quantity and variety of material is as much a reflection of who received the most interred wealth as is the mere presence/absence of offerings. According to this criterion, adult males once again received priority, since the average number of classes of goods with individuals accompanied by offerings is 4.38 (see bottom of Table 12.3 for a listing of classes of grave goods). Children are a close second, with an average of 3.3 classes of grave goods. Adult females comprise a distant third, with an average of 1.0 class of goods (expressed graphically in Figure 12.5).

Thus, the combined information on the presence/absence of grave goods and the number of classes of goods in those graves with offerings clearly indicates that adult males were the group within the population provided with the greatest amount of material wealth. Children comprise the second group, since the relatively large number of offering classes per burial represents a proportionately high degree of wealth disposal. Adult females were least likely to receive material goods, judging from the fact that none were accompanied by more than a single class of offering. Assuming that the amount of wealth placed with the dead in some way reflects the social position of individuals during life, it follows that, as a group, adult males were generally accorded the highest status in aboriginal society, followed by children. Adult females would appear to comprise the group with the least ascribed status.

Certain observations recorded by Cabeza de Vaca, discussed in Chapter 4, appear to agree with the archaeological evidence, insofar as he noted the considerable concern expressed upon the death of men and children, but did not mention any special attentions paid to deceased women (Bandelier 1905:66-67). Concerning the death of children, Cabeza de Vaca stated that "...should a child...die, parents and relatives bewail it, and [so does] the whole settlement, the lament lasting a full year, day after day." The generally high regard for children is indicated by his statement that "of all the people in the world, they are those who most love their children and treat them best" (Bandelier 1905:63-64).

The status ascribed to males-- apparently both adult and juvenile-- is suggested by the statement that "when a son or a brother dies no food is gathered by those of his household for three months, preferring rather to starve...." This may be in keeping with the bits of information left by Cabeza de Vaca which hint at a social authority for adult males, and their ability to accumulate some measure of wealth. This is highlighted in the passage cited in Chapter 4 which refers to husbands' paying bride price to the wife's father.

Authority on the part of adult males is clearly indicated by later, eighteenth century documents pertaining to native people of the Galveston Bay area. Aten (1983a) discusses at some length the fact that Akokisa were divided into several constituent groups, and that each group was under the authority of, or at least represented by, a headman (again, see discussion in Chapter 4). The existence of such leaders clearly implies that all men were not of equal standing in aboriginal society, a pattern which may be reflected by the burials at Mitchell Ridge insofar as there is considerable variation in the quantity of burial goods interred with adult males; some were accompanied with as many as six classes of grave goods while others had none (see Table 12.3).

Spatial Clustering of Grave Goods by Cemeteries: Possible Sociocultural Implications

One of the archaeological criteria for establishing differential status groupings within a burial population is spatial clustering of the kinds and quantities of graves goods, either within a cemetery or between cemeteries (Freid 1960, 1967; Service 1971; Brown 1981; O'Shea 1984; Mainfort 1985). The basic working assumption is that different segments of prehistoric society tended to inter deceased members within spatially discrete cemeteries, or sections of cemeteries, and that such spatial distinctions can reflect

Table 12.3. . Correlations between presence/absence of grave goods and number of classes of goods and age/sex of individuals (where associations can be determined; in cases where more than one individual is present in a grave and either sex/age are indeterminate, or association with grave goods is questionable, feature or burial is not included).

ADULT MALES	Grave Goods?	No. classes		Grave Goods?	No. classes
Burial 1 (1970s)	no		Feature 92-2	no	
Burial 4 (1970s)	no		Feature 35	no	
Burial 6 (1970s)	no		Feature 61	yes	1
Burial 7 (1970s)	yes	2	Feature 62	yes	1
Burial 10 (1970s)	yes	5			
Feature 25	no		SUBADULTS		
Feature 52	yes	2	Burial 3 (1970s)	no	
Feature 84	no		Burial 8 (1970s)	no	
Feature 86	yes	6	Burial 11 (1970s)	no	
Feature 87	yes	5	Burial 12 (1970s)	no	
Feature 63	yes	3	Burial 13 (1970s)	no	
Feature 64, Burial 4	yes	6	Feature 26	no	
Feature 65	yes	6	Feature 27	no	
ADULT FEMALES			Feature 28	yes	2
Burial 2 (1970s)	no		Feature 83	yes	4
Burial 3 (1970s)	no		Feature 63, bundle	yes	4
Burial 5 (1970s)	yes	1	Feature 63, token	no	
Burial 9 (1970s)	no		Feature 64, B. 1	yes	5
Feature 30	yes	1	Feature 64, B. 2	yes	3
			Feature 64, B. 3	yes	2

Offering classes are as follows:

Lithics

1. Flakes, prismatic blades
2. Bifacial tools
3. Drills/perforators

Shell

4. Modified freshwater mussel
5. Cylindrical conch beads
6. Olivella beads
7. Olive beads
8. Olive tinklers
9. Freshwater mussel ornaments

Bone/Antler

10. Bird bone beads

11. Whooping crane ulna whistles

12. Bone "dagger"

13. Antler billets

14. Drum fish teeth

15. Shark teeth

16. Bone points

17. Engraved pin

18. Deer skull (fragmentary)

Other

19. Ochre deposits

20. Rattles (clusters of drum teeth, pebbles)

European items

21. Mirror fragment

22. Iron tool fragments

23. Brass bell

24. Glass beads

Adult males: 61.5% have grave goods; average no. of classes is 4.38

Adult females: 44.4% have grave goods; average no. of classes is 1.0

Subadults w. grave goods: 43% have grave goods; average no. of classes is 3.3

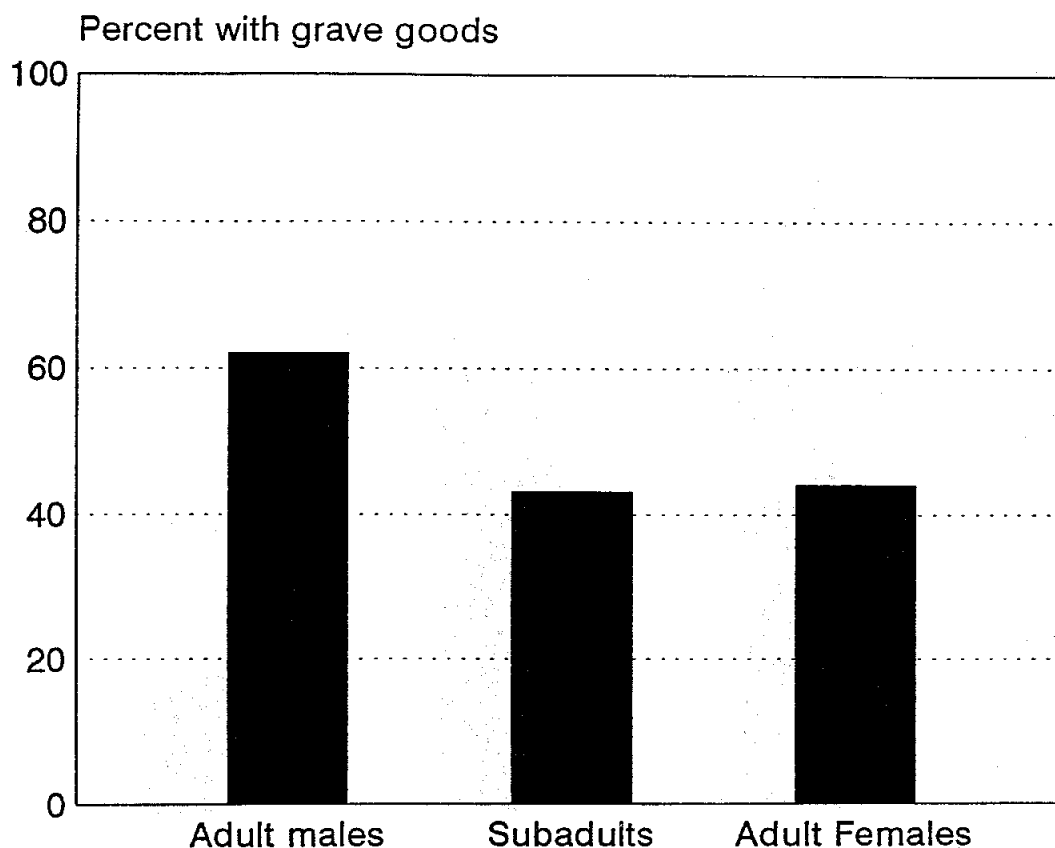


Figure 12.4. Bar graph showing percent of graves with offerings within age/sex categories, Mitchell Ridge Site.

living social groups with differential access to wealth and, by implication, differing social status.

The four small cemeteries investigated at Mitchell Ridge do in fact show marked differences in the proportion of burials with grave goods, as well as in the quantity and range of goods within each cemetery. The three burial groups in the Burial Area, the Cross Area, and Area 1 are remarkably similar in this regard. In these three areas, only 20-25% of the grave pits contained burials with grave goods, and few classes of offerings were present (see Table 12.4 and Figure 12.6). The Cross Area produced one grave with two classes of offerings (not including Burial 10, which, for reasons repeatedly noted, may pertain to an earlier mortuary tradition), the Burial Area had one pit with only one class of offerings, and Area 1 yielded two pits containing a total of three classes of offerings. In marked contrast is Area 4, in which 10, or 91%, of the burial pits contained grave goods. Equally striking is the fact that 24 offering classes are represented, over ten times the average of the number found in each of the other burial groups.

In order for such marked differences to be interpreted as corresponding to differing amounts of wealth among different segments of the population, the burial groups must be demonstrated to be essentially contemporaneous. If different time periods are represented, the between-group variability in quantities and ranges of grave goods could represent long-term changes in mortuary practices, as opposed to synchronic variation in wealth and/or status within the society. For this reason, data from the Burial Area and the Cross Area are of questionable comparative value, since (a) available funds did not permit extensive dating of these cemeteries, so that chronological control is somewhat weak, and (b) the dates that we do have suggest that both burial groups are somewhat earlier than Area 4, since neither has burials of demonstrable Protohistoric or Early Historic age.

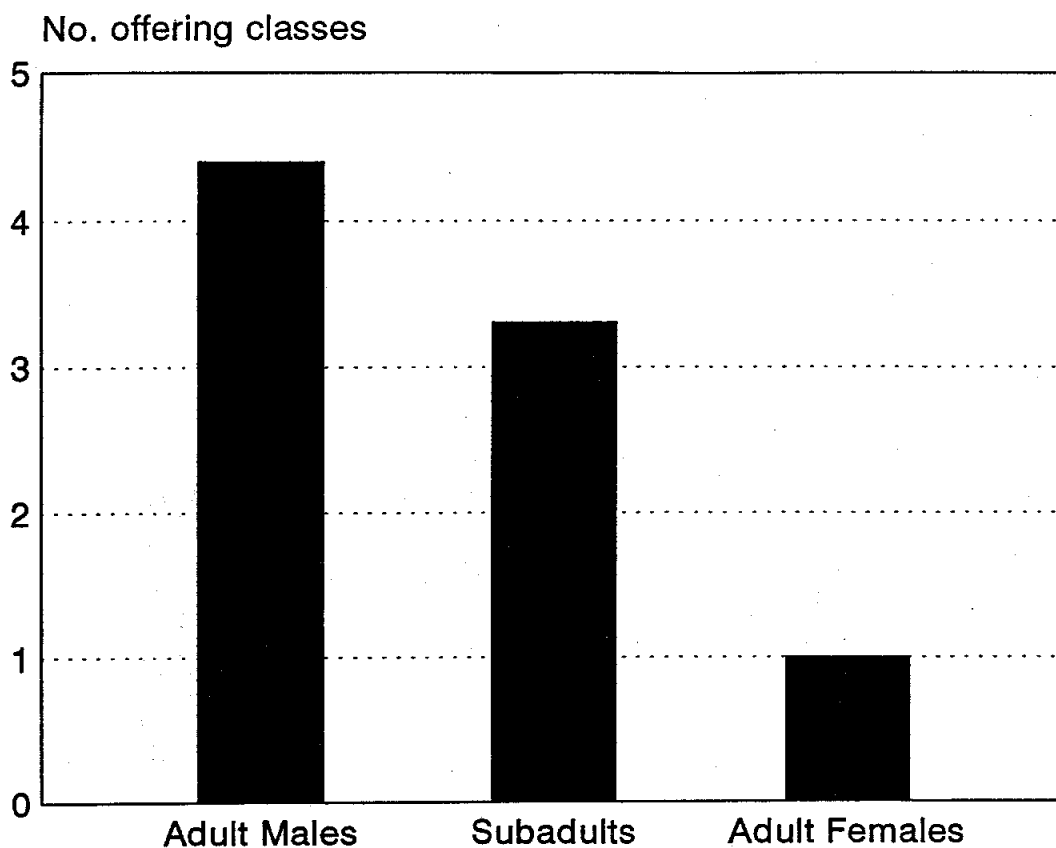


Figure 12.5. Bar graph showing average number of offering classes with burials by age and sex groupings, Mitchell Ridge Site (average based only on burials with offerings).

On the other hand, Area 1 appears to be largely coeval with Area 4, since both areas produced burials radiocarbon-dated to the Final Late Prehistoric, the Protohistoric and the Early Historic Periods. Although Area 4 is the better-dated cemetery, with radiocarbon dates from 10 of the 11 eleven burial pits, the fact that three of the four dated burials from Area 1 fall into the Final Late Prehistoric through Early Historic suggests that the cemetery pertains mainly to those periods. The contrast in quantity and range of grave goods between only these two groups remains striking, suggesting a patterned distinction in burial groups in terms of wealth disposal during mortuary ritual and burial.

It follows that certain segments of the society-- perhaps specific lineages-- either controlled greater wealth than did others, or were at least allotted greater wealth within the context of mortuary rites. This in turn suggests that not all statuses were personally achieved or ascribed solely on the basis of age and/or sex. Area 4 would seem to represent a distinct space reserved for burial of individuals who were members of a segment of society which was accorded special treatment by (a) burial within its own cemetery area, and (b) interment with a far greater quantity and range of material goods than was the case with other social groupings. The fact that the Area 4 burials span several hundred years suggests that the interred individuals were distinguished on the basis of traditional, culturally informed perceptions of social hierarchy. Certainly, not all of the status presumably represented by offerings in Areas 4 was personally achieved, since considerable wealth was interred with young children (i.e, Features 83, 63 and 64).

The ultimate implication is that aboriginal society in the Galveston Bay area was not strictly "egalitarian", but was to some degree organized according to principles of hierarchical ranking. Each burial

Table 12.4. Number and percentages of grave pits with grave goods by burial group, total number of offering classes from all burials in each group, and chronological periods of burial groups as indicated by radiocarbon-dated burials.

Burial Group	No. Grave pits w. offerings	% of pits in area w. goods	Total no.. offering classes in group	Chronological Periods represented by burials
Cross Area	1	25%	2	Initial Late Prehistoric
Burial Area	1	20%	1	Initial Late Prehistoric, Final Late Prehistoric
Area 1	2	22%	3	Initial Late Prehistoric, Protohistoric, Early Historic
Area 4	10	91%	24	Final Late Prehistoric, Protohistoric, Early Historic,

group represents long-term (albeit highly intermittent) use, so that there must have been an ongoing, consistent spatial segregation of wealth disposal which depended on a traditional control of goods, rather than a short-term or episodic situation in which a particular social group fortuitously was able to gain temporary access to wealth. The burials from all periods represented in Area 4-- Final Late Prehistoric, Protohistoric and Early Historic-- all contain more classes of goods than any burials of comparable age in other burial groups at Mitchell Ridge, indicating that the interment of relatively large quantities of goods is not restricted to any one time period.

The Diachronic Perspective: Evidence for Long-Term Increase in Emphasis on Wealth Disposal?

A purely diachronic perspective on the radiocarbon-dated burials at Mitchell Ridge suggests a possible long-term trend toward increasing quantities of grave goods placed with the dead. This is summarized in Table 12.5 and presented graphically in Figures 12.7 and 12.8. Of the four burials dated to the Initial Late Prehistoric, only one had grave goods. Three of the five burials dated to the Final Late Prehistoric were accompanied by grave goods, and all of the four burials dated to the Protohistoric had grave goods. All but one of the six dated Early Historic individuals had accompanying goods. In terms of classes of offerings-- our measure of the range of wealth placed with the deceased-- the average number of classes for all dated burials, by chronological period, increases markedly through time. The average for the Initial Late Prehistoric is 0.5 classes, which increases progressively to 2.6 in the Final Late Prehistoric, 3.25 in the Protohistoric and 3.83 in the Early Historic (Figures 12.8). If these data reflect a real trend, they imply an increasing concern with interment of wealth in the context of mortuary ritual over a period of about 1,000 years.

This diachronic trend may be, however, more apparent than real. The great majority of burials with grave goods are in Area 4, which was used for burials from the Final Late Prehistoric through the Early Historic and which may be largely later in time than the cemeteries in the Cross Area and the Burial Area. The diachronic data may thus be skewed by the introduction of data from the Area 4 burials, which, as discussed, may reflect interment of a relatively large number of offerings related to differential status

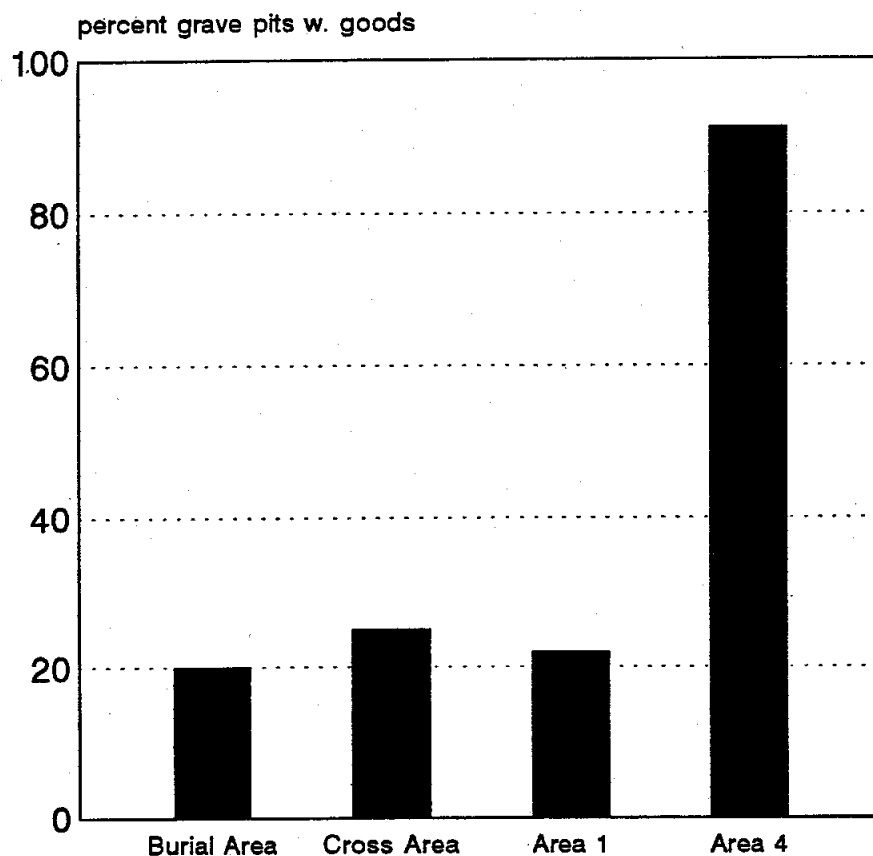


Figure 12.6. Bar graph showing percent of grave pits with offerings for each of the four burial groups at Mitchell Ridge.

of social groups. The limited radiocarbon evidence for the Cross Area and the Burial Area do suggest that these burial groups may pertain largely to the Initial Late Prehistoric and, if this is the case, then there may be a diachronic dimension to the relative wealth placed with the generally later burials in Area 4. On the other hand, this inference is not supported by the evidence from Area 1, where most burials are probably coeval with those in Area 4, but which also produced only scant quantities of grave goods. Based on the available data, the best explanation for the relative abundance of offerings in Area 4 is that they reflect synchronic internal societal distinctions, as opposed to a long-term trend. The latter possibility should not, however, be excluded from consideration in future research in the upper Texas coast region.

Demographic Implications of the Mitchell Ridge Burials

A detailed discussion of the human osteological data relevant to aboriginal demography has been presented by Powell in Chapter 9, and need not be reiterated here. A key point which merits additional discussion, however, is an apparent shift in patterns of mortality in Early Historic times. The change is manifest in two ways. First, the rate of mortality appears to increase, as evidenced by a marked increase in the average number of individuals interred in graves. Second, an increase in the rate of child mortality is suggested by the fact that a greater proportion of individuals represented in Early Historic graves are subadults than was the case during earlier times.

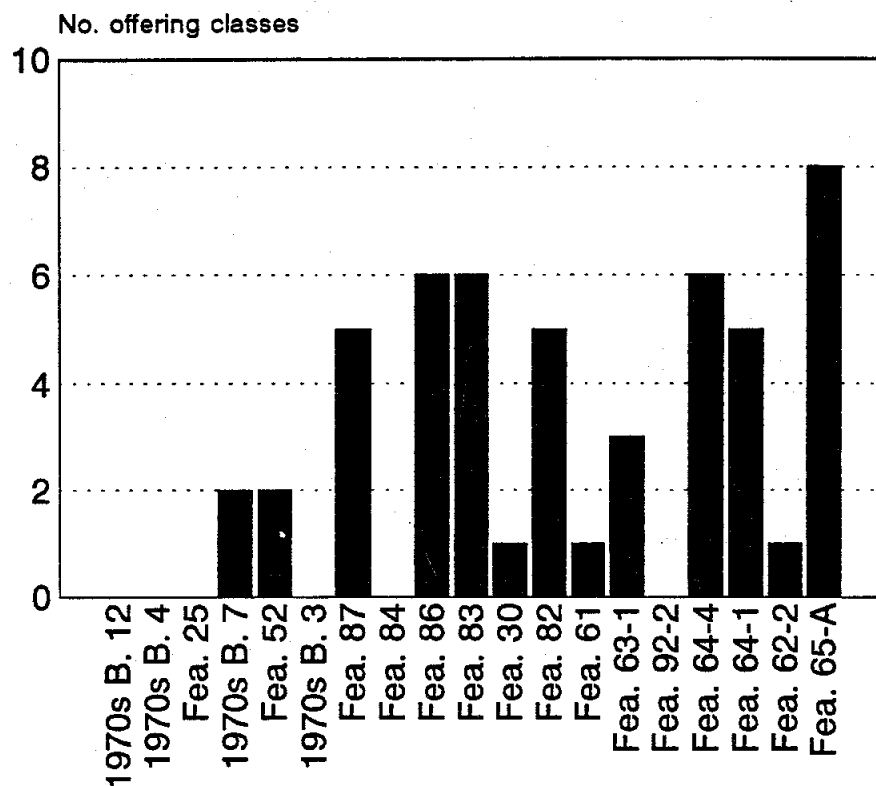


Figure 12.7. Bar graph showing number of offering classes associated with radiocarbon-dated individuals in burials at Mitchell Ridge.

Average Numbers of Individuals per Grave, by Chronological Periods

It has been suggested that one way of assessing relative mortality rates within an archaeological burial population is to count the number of individuals interred within individual graves (Milner 1980; Smith 1987). The rationale is that under conditions of high mortality, a sufficient number of people may die within relatively short periods of time that the survivors can feasibly bury them together in common graves. A significantly increased rate of death within a population may thus result in an increase in the average number of people buried in graves.

At Mitchell Ridge, the number of individuals represented within grave pits shows a marked increase in the Early Historic Period. Taking into account only those grave pits which can be definitely assigned to one or another chronological time period (see Table 12.6), the average number of interred individuals per pit increases about threefold from the Late Prehistoric to Early Historic times, from 1.2 to 3.5 (Figure 12.9). Adding those burials for which the radiocarbon data are somewhat less clear, but which can probably be assigned to one or another period (i.e., Features 92-1, 92-2, 30 and 61, for which the 2-sigma ranges span parts of two periods, but for which the intercept[s] fall well within one or another period), there is still more than a twofold increase in the average number of individuals per grave pits: The Late Prehistoric Period averages 1.3 individuals per pit and the Early Historic averages 3.0 (see Figure 12.9).

The average for the Protohistoric Period is close to that for the Late Prehistoric, at 1.5 for graves definitely attributable to the period (Features 82 and 83) and 1.75 when graves are included that are probably attributable to the period on the basis of calibrated intercepts. The marked increase in the

Table 12.5. Number of offering classes per radiocarbon-dated burial, arranged chronologically by periods, and showing average number of offering classes per individual for each period.

Burial	2-Sigma range	No. Classes*	Period	Period Average
1970s Burial 10	B.C. 45 - A.D. 310	4	Late Archaic / Early Ceramic	4.0
1970s Burial 12	A.D. 670-998	0	Initial Late Prehistoric	0.5
1970s Burial 4	A.D. 785-1005	0		
Feature 25	A.D. 789-1215	0		
1970s Burial 7	A.D. 996-1205	2		
Feature 52	A.D. 1217-1393	2	Final Late Prehistoric	2.6
1970s Burial 3	A.D. 1268-1401	0		
Feature 84	A.D. 1229-1483	0		
Feature 86	A.D. 1280-1480	6		
Feature 87	A.D. 1281-1439	5		
Feature 30	A.D. 1432-1657	1		
Feature 82	A.D. 1446-1654	6		
Feature 83	A.D. 1409-1641	5	Protohistoric	3.25
Feature 61	A.D. 1443-1954	1		
Feature 92-2	A.D. 1446-1955	0		
Feature 63-1	A.D. 1511-1955	3		
Feature 64-1	A.D. 1663-1955	5	Early Historic	3.83
Feature 64-4	A.D. 1644-1955	6		
Feature 62-2	A.D. 1666-1955	1		
Feature 65-A	A.D. 1694-1955	8		

* Offering classes are listed at bottom of Table 12.3.

average number of individuals per pit thus appears to have occurred during Early Historic, rather than Protohistoric, times. However, the number of pits and individuals is particularly small for the Protohistoric, so no strong inferences can be drawn concerning mortality trends for this period.

Possible Increases in Child Mortality During the Early Historic

Another change in patterns of mortality during the Early Historic Period is an increase in the proportion of subadults within the burial population. Among the burials which can be definitely attributed to one or another chronological period, the percentage of Early Historic subadult individuals is double that of the Late Prehistoric Period: 25% of the Late Prehistoric individuals are subadults compared to 50% for the Early Historic (see Table 12.6 and Figure 12.10). The percentage of subadult individuals in graves definitely attributable to the Protohistoric is 33%, but the sample of individuals is too small (N=3) to be meaningful. Including individuals from dated graves which can probably be assigned with somewhat less confidence to a time period, on the basis of calibrated radiocarbon intercepts, the percentage remains

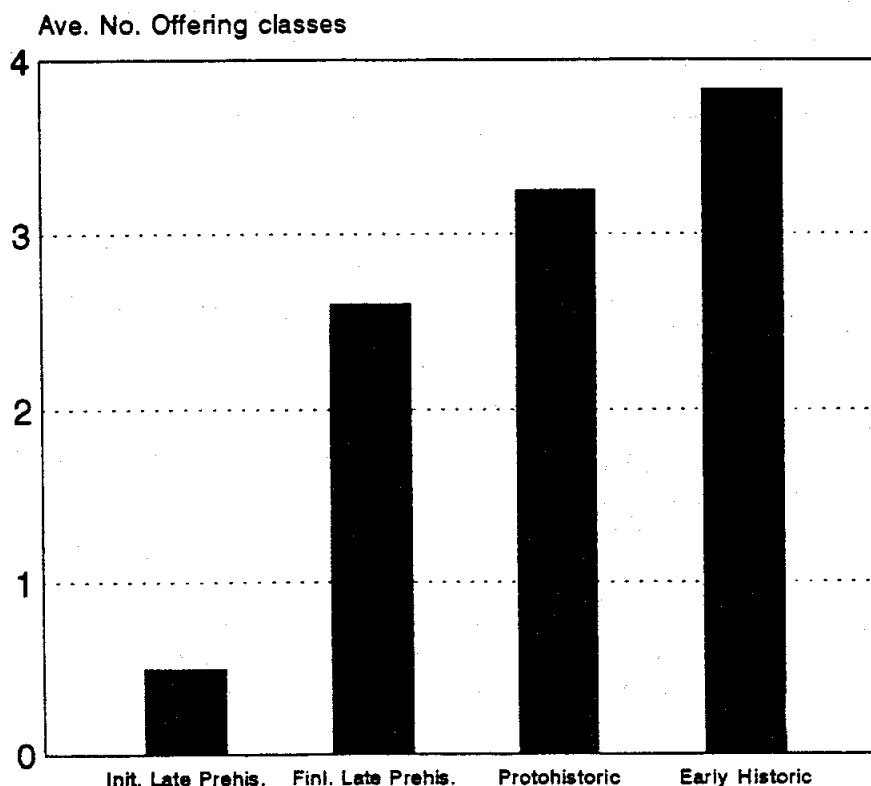


Figure 12.8. Bar graph showing average number of classes of grave goods with burials.

unchanged for the Late Prehistoric, and nearly the same (at 47%) for the Early Historic. The Protohistoric percentage (29%) comes to more closely approximate that for the Late Prehistoric, though the sample of individuals is still too small ($N = 7$, see Table 12.6) for making confident inferences.

Changing Mortality Rates and Early Historic Epidemics

There is little doubt that the native peoples of the Texas coast must have been experiencing rapid depopulation during Early Historic times. Outbreaks of smallpox, measles and other Old World diseases are documented in the greater Texas area beginning in the late seventeenth century, and recurred throughout the Early Historic Period (see Table 12.7). Research in recent decades has shown conclusively that various introduced diseases, for which native New World peoples had little or no natural immunity, reduced aboriginal populations drastically, often within a matter of a few decades (e.g. Denevan 1976; Dobyns 1983; Smith 1987; Reff 1991; Perttula 1992). It has become increasingly apparent that the native populations recorded by Europeans within a given region of the New World had already been markedly lowered by epidemics which preceded written documentation. Whether or not initial depopulation preceded European settlement as a result of widespread pandemics, or resulted only from more localized epidemics attending direct (though perhaps unrecorded) contact, is currently a subject of debate (cf. Ramenofsky 1987; Snow and Lamphear 1988). It is virtually certain, however, that aboriginal population levels were generally considerably higher than the original estimates published in the first half of this century (e.g. Mooney 1928; Swanton 1952).

Table 12.6. Number of individuals per grave pit, arranged chronologically by periods, and showing average number of individuals per pit for major time periods.

Burial	2-Sigma range	No. individ.	Period	Period Average
1970s Burial 10	B.C. 45-A.D. 310	1	Late Archaic/ Easrly Ceramic	1
1970s Burial 12	A.D. 670-998	2	Late Prehistoric	1.2
1970s Burial 4	A.D. 785-1005	1		
Feature 25	A.D. 789-1215	1		
1970s Burial 7	A.D. 996-1205	2		
Feature 52	A.D. 1217-1393	1		
1970s Burial 3	A.D. 1268-1401	1		
Feature 84	A.D. 1229-1483	1		
Feature 86	A.D. 1280-1480	1		
Feature 87	A.D. 1281-1439	1		
Feature 92-1	A.D. 1402-1631*	2		
Feature 30	A.D. 1432-1657*	1	Protohistoric	1.75
Feature 82	A.D. 1446-1654	2		
Feature 83	A.D. 1409-1641	1		
Feature 61	A.D. 1443-1954*	3		
Feature 92-2	A.D. 1446-1955*	1	Early Historic	3.5
Feature 63	A.D. 1511-1955	6		
Feature 64	A.D. 1663-1955	4		
Feature 62	A.D. 1666-1955	2		
Feature 65	A.D. 1694-1955	2		

* Chronological period placement is considered probable because the greater part of the 2-sigma range falls into the period, and/or the intercepts fall into the period (in the case of multiple intercepts, most fall into the period; see complete radiocarbon data in Appendix)..

Just how early epidemics affected the aboriginal groups of the Texas coast remains open to question. Limited data have been presented elsewhere (Ricklis 1990:501-508) which suggest that the population of the Karankawa groups of the central coast may not yet have been greatly affected at the time of La Salle's initial incursion in the Matagorda Bay area in 1685; contemporary observations suggest that the aboriginal population for the combined Karankawa groups may have been as high as about 8,000, and further suggest that relatively large seasonal population aggregates of 400-500 people were not uncommon in the late seventeenth and early eighteenth centuries. On the other hand, population had been reduced to around 2,500 by 1750, and recorded observations suggest that the largest seasonal aggregates were by that time considerably smaller. The available data show that the Karankawa experienced drastic depopulation between ca. 1680/1700 and 1750, after which time population size tended to stabilize, probably in large part due to influx of inland peoples who merged with the indigenous coastal population (Ricklis 1990:512-515). Final, dramatic population decline began around 1820, as the coastal prairies were aggressively settled by Angloamericans; by 1850 the Karankawans had been either killed off

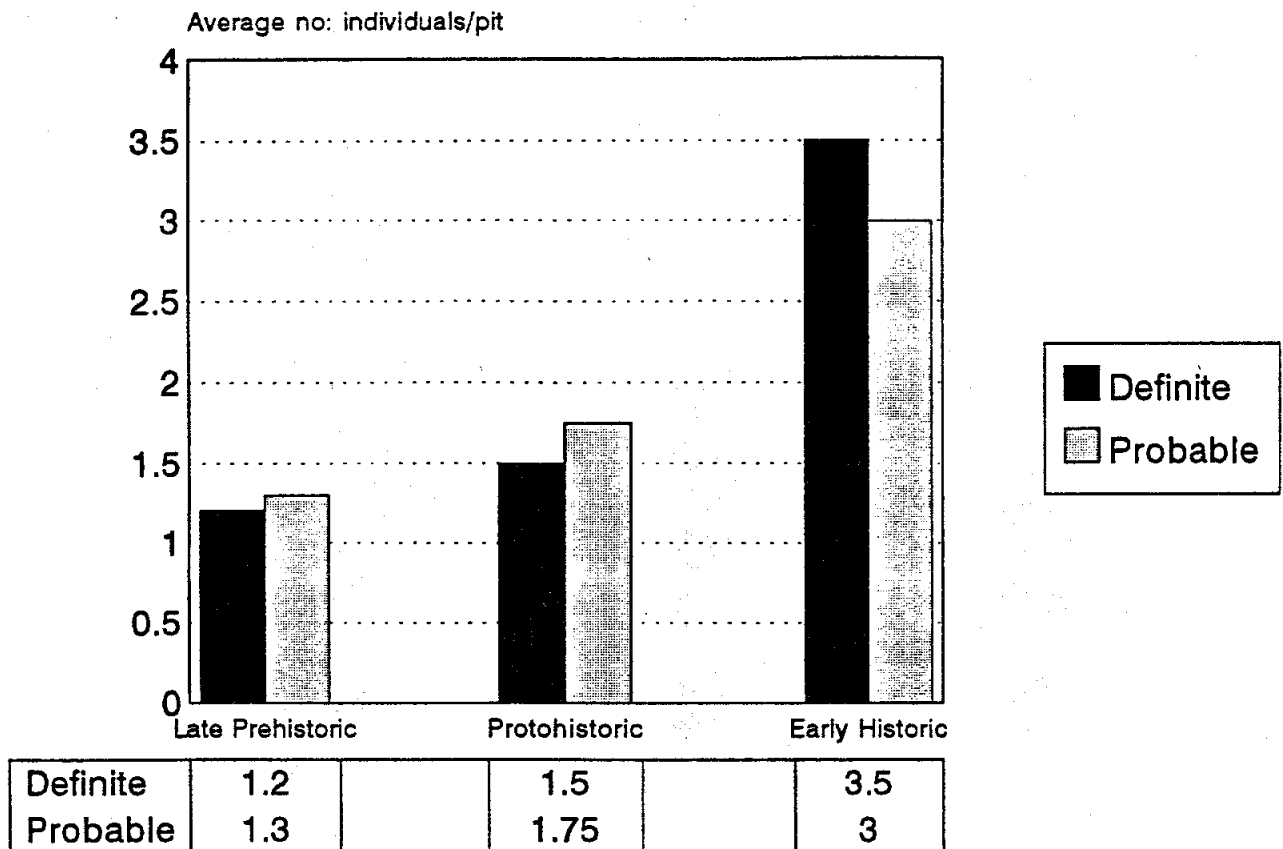


Figure 12.9. Bar graphs showing average numbers of individuals per grave pits for three major chronological periods. "Definite" includes those individuals for which calibrated intercept(s) and 2-sigma ranges fall within the pertinent period; "probable" includes burials for which intercept(s) and/or 2-sigma range are largely within the pertinent time period.

or forced to abandon their traditional homeland. The population data for the Karankawa are summarized graphically in Figure 12.11, which shows a population curve in essential agreement with that presented by Aten (1983a, Figure 4.1).

Aten (1983a) has pulled together extant information on historic population decline for the upper coast Akokisa. Once again, the data suggest precipitous population decline through the middle part of the eighteenth century, subsequent stabilization or slight recovery until about 1820, and subsequent rapid decline to the point of extinction ca. 1840. However, Aten leaves open the possibility that the Akokisa population of ca. 1750, estimated at about 1,200, may approximate the pre-epidemic population level, and that population decline between about 1750 and 1770 may represent the first major demographic effects of European disease on this group (see Akokisa population curve in Figure 12.11, redrawn from Aten 1983a, Figure 4.1). Such a relatively late date for major depopulation can be questioned, however, considering that (a) the neighboring Karankawans had probably already suffered heavy losses, (b) epidemics were reported among other nearby native peoples, in the first half of the eighteenth century, including the coastal Atakapa (see Table 12.7), of which the Akokisa were a constituent or closely related group, and (c) epidemics were certainly present and widespread throughout the southeast and northern Mexico prior to the early eighteenth century (e.g. M. Smith 1987; Reff 1991; Perttula 1992). The hunter-gatherers of the Texas coast may have been insulated by geographical and/or social distance from the worst effects of early epidemics, but it seems unlikely, in view of the regional ethnohistorical information, that this could have continued until the second half of the eighteenth century. The estimated mid-eighteenth century Akokisa population of 1,200 (Aten 1983a) may well have already been significantly reduced from

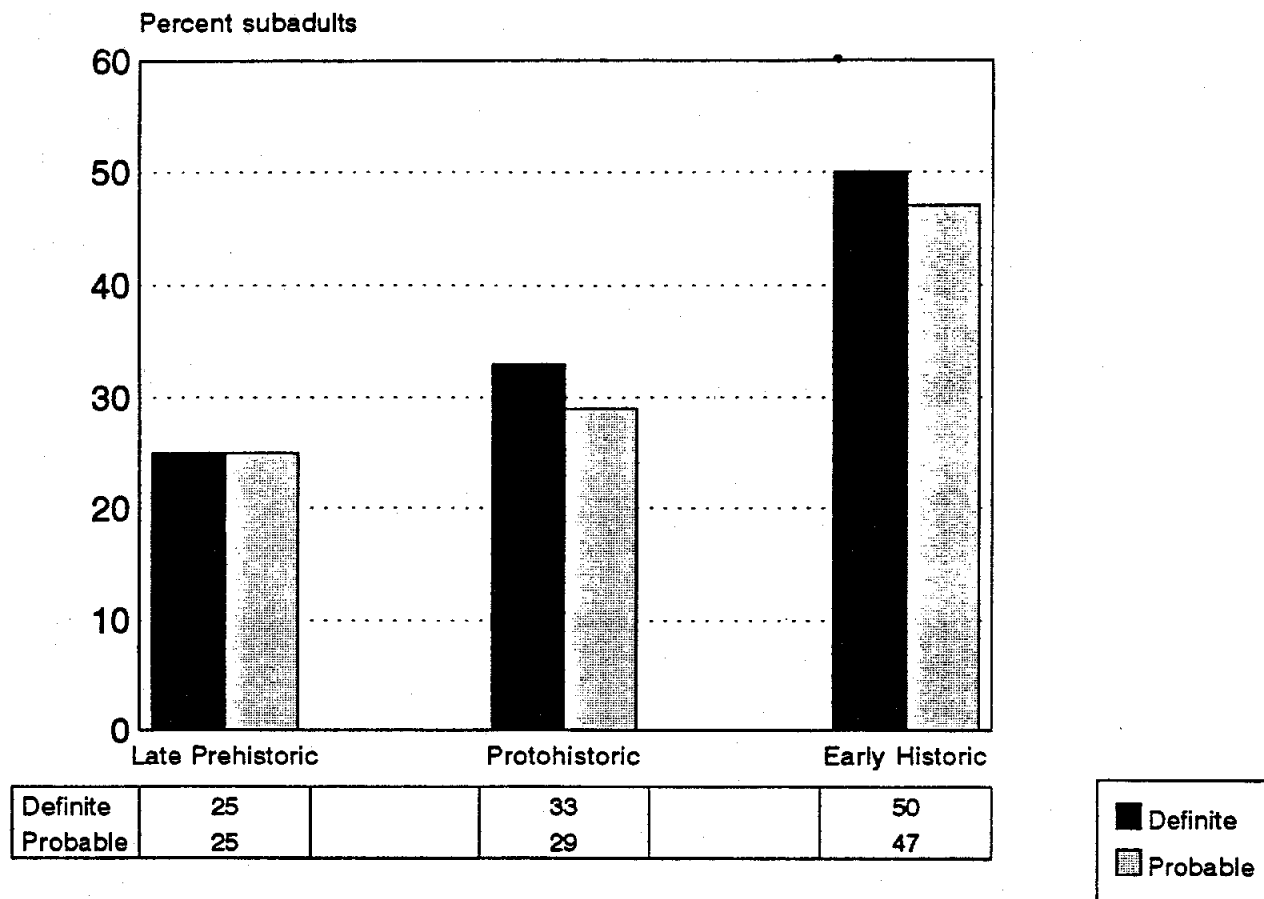


Figure 12.10. Bar graph showing percent of individuals in burials which are subadults, by major chronological periods, Mitchell Ridge Site, based exclusively on radiocarbon-dated burials. "Definite" includes those burials for which calibrated intercept(s) and 2-sigma ranges fall within the pertinent period; "probable" includes burials for which intercept(s) and/or 2-sigma range are largely within pertinent time period.

a pre-epidemic maximum.

The combined data on average numbers of individuals per grave, and the percentages of subadult individuals, strongly suggest that the Mitchell Ridge burials reflect the effects of introduced Old World pathogens. Increasing overall mortality rates during the Early Historic Period, and particularly an increase in the death rate of children, a segment of the population which would have been particularly vulnerable to disease, appear to be congruent with the overall population curves for Texas coastal groups presented in Figure 12.11. For both the Karankawa and the Akokisa, the documentary evidence points to rapid population decline during the early to middle eighteenth century, with slowed decline or stabilization in the latter part of the century. The Early Historic graves at Mitchell Ridge, as discussed earlier, probably date to the second or early third quarter of the eighteenth century, just that period during which the effects of epidemics were apparently particularly drastic. Thus, the archaeological and ethnohistoric evidence combine to indicate that the people who inhabited the site during this period were suffering population losses.

Unfortunately, the data for the Protohistoric Period are too limited to indicate whether depopulation was already underway prior to the period of ongoing, direct contact between native groups and Europeans beginning at the end of the seventeenth century and intensifying during the first half of the eighteenth century. Taken at face value, the Protohistoric burial data suggest a slight increase in

Table 12.7. List of Protohistoric and Early Historic Period epidemics in eastern part of Texas, with location of reported outbreaks, groups known to have been affected, and bibliographic sources. Two or more reports of a single disease, closely spaced in time, may reflect different observations of the same epidemic.

DATE	DISEASE	LOCUS, AFFECTED GROUPS	SOURCE
1528	?	"Isla del Malhado" (Cabeza de Vaca)	Bandelier 1905
1688-9	Smallpox	Ft. St. Louis, Karankawans(?)	West 1905
1691	Smallpox, measles	Caddoan tribes	Ewers 1973, Gerhard 1978
1718	?	Caddoan tribes	Ewers 1973
1739	Typhus, smallpox	San Antonio missions	Ewers 1973
1746	Smallpox, measles	Atakapan groups, Tonkawa	Ewers 1973
1749	Smallpox, measles	Cocos (Karankawan)	Morfi 1935:307
1750	Smallpox	Atakapan groups, Tonkawa	Ewers 1973
1750-1	Smallpox	San Antonio area	Ewers 1973
1753	?	Atakapan groups	Gerhard 1978
1759	Smallpox	Nacogdoches	Ewers 1973
1759	Measles	Caddoan tribes	Ewers 1973
1763	?	San Antonio area	Ewers 1973
1764	Smallpox	Presidio de la Bahia	Ewers 1973
1766	?	Karankawan groups	Ewers 1973
1777-8	Bubonic plague(?)	Cadooans, Atakapans, Tonkawa	Ewers 1973
1778	Smallpox, measles	Karankawan groups	Ewers 1973
1780s	Smallpox	Provincia de Tejas	Gerhard 1978
1789	?	Presidio de La Bahia	Espadas, letter of 1789
1793	?	Refugio Mission	Rodrigues, letter of 1793
1801-2	Smallpox	Caddoan tribes	Ewers 1973

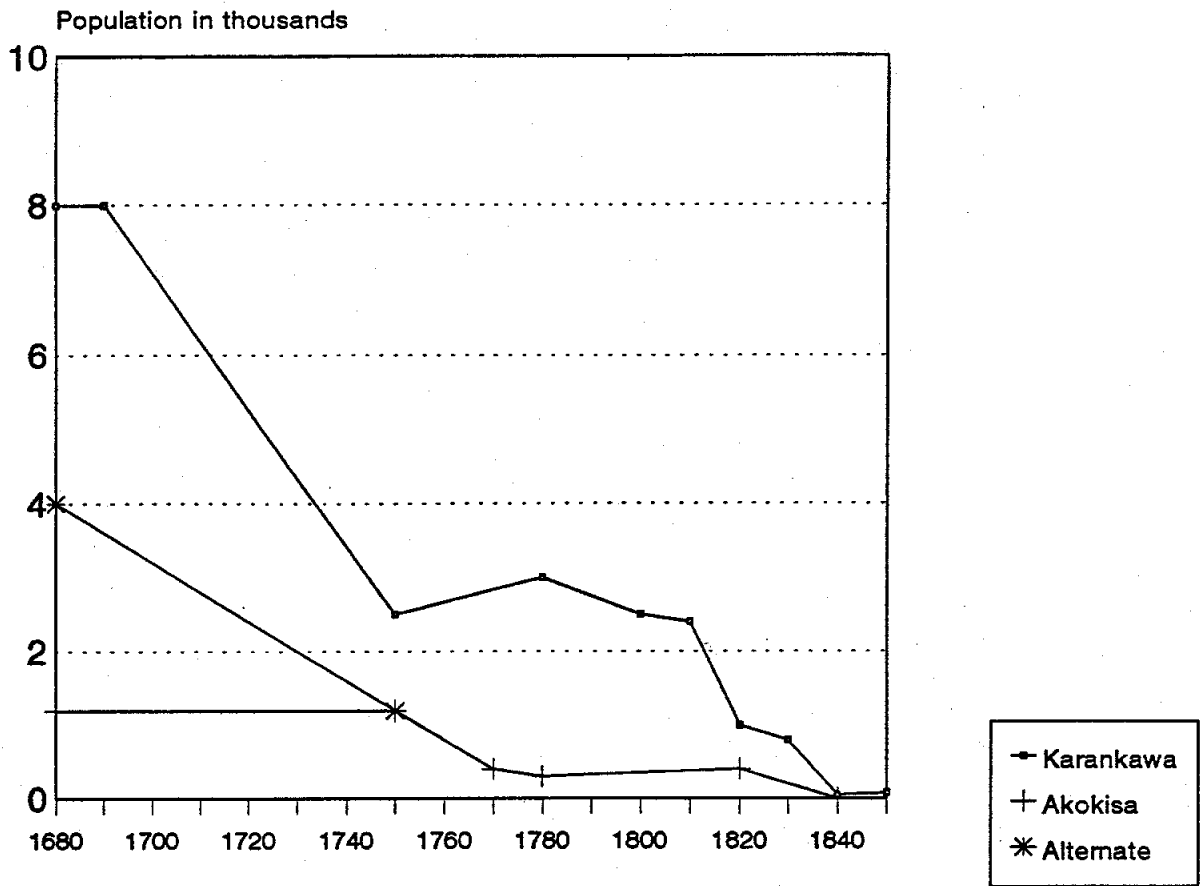


Figure 12.11. Early Historic population curves for the Akokisa and Karankawans. Karankawan curve from Ricklis 1990; Akokisa curve based on Aten 1983a. Alternate initial population level for Akokisa based on inferences derived from regional data on early effects of epidemics (see discussion in text).

average number of individuals in graves and little or no increase in child mortality (see Figure 12.10), but the sample sizes are simply too small to inspire confident conclusions. It can at least be noted that no Protohistoric grave yielded as many individuals, or contained the remains of as many subadults, as did some of the Early Historic graves. Intuitively, the Protohistoric graves look more like Prehistoric ones as regards demographic indicators, and it is tempting to infer that the effects of epidemic disease did not reach the upper Texas coast with full force until the period of direct and repeated contact with Europeans in the early eighteenth century. However, more data will have to accumulate for the crucial Protohistoric Period before this question can be adequately addressed.

Evidence for Early Historic Population Mergers at Mitchell Ridge

Powell has discussed, in Chapter 9, the evidence for increasing biological heterogeneity in the Mitchell Ridge burial population. Certain anomalous cranial traits in the individuals in Features 86 and 87 hint at such a trend during the Final Late Prehistoric. Nonetheless, it is for the period of European contact that there is the greatest indication of biological mixing of populations.

The earliest example is presented by the flexed adult female in Feature 61. Discrete trait analysis

of the cranium from this individual showed strong affinities with European Caucasians, leading to the conclusion that this person was probably either of European or mixed European-Native American ancestry. With a calibrated 1-sigma date range of A.D. 1482-1660 and a single intercept point at A.D. 1638, this burial has been assigned to the Protohistoric Period, though an early historic placement cannot be ruled out, considering the 2-sigma range of A.D. 1443-1954. What seems reasonably clear is that an individual of at least partial European ancestry reached Galveston Island during the seventeenth or eighteenth centuries, to become enculturated by local society to the extent that she was buried within a native cemetery, in the traditional flexed body position, and accompanied by grave goods of native manufacture (olive shell beads in the form of a headband).

The Early Historic burials in Area 4 present additional, and more varied, evidence for cultural and biological mixing. Discrete cranial traits among the individuals buried in Features 62 and 65 show certain caucasian affinities, though these are not as pronounced as in the case of the adult female from Feature 61, and may represent as yet poorly understood variation in the Native American population of the upper Texas coast.

On the other hand, Burial 4 in Feature 64, a young adult male, exhibits a number of characteristics which clearly set him apart from the local native population. Discrete trait analysis of the cranium demonstrated strong European affinities, suggesting partial European ancestry for this individual. The definite fronto-occipital cranial deformation of the skull is morphologically identical to examples frequently found among Southeastern agriculturalists, including the Caddoans and various groups of the Lower Mississippi Valley (e.g. Bennett 1961; Morse 1973; Steele and Olive 1990:155). This individual also stands apart in the absence of tooth wear and lack of development of muscle attachment, suggesting a different diet and lifestyle than generally evidenced for Texas coastal hunter-gatherers. This is in line with Huebner's findings, presented in Chapter 10, which indicate a stable carbon isotope signature for this individual which diverges from expectations for local hunter-gatherers but which is similar to the stable carbon components indicated for Caddoan agriculturalists.

Finally, like the other three burials in Feature 64, this individual was buried resting on the back in an extended position, a body position common in Mississippian and Caddoan burials but absent in the Late Prehistoric hunter-gatherer burials at Mitchell Ridge, the Galveston Bay area, and the surrounding coastal plain of Texas (e.g. Aten 1983a; Campbell 1957; Hall 1981, n.d.; Huebner and Comuzzie 1992). The consistent extended position of all four individuals, and the nearly perfect alignment of the bodies, carefully placed one on top of the other, combine to indicate that all four were buried according to the same principles of interment. These individuals may in fact have been part of a single family or kin group, whose surviving members ensured that all were buried together in the same pit and according to the same culturally informed-- and locally anomalous-- expectations concerning proper burial. The young age of the individuals in Burials 1-3 precludes assessment of the degree of genetic affinities of the four individuals (as was possible with the two adult females in Feature 62), but the complete absence of tooth wear in the adolescent female, Burial 1, suggests that she may have lived by the same diet-- and thus may have had the same cultural origin-- as did the young adult male, Burial 4.

A complex personal history is suggested for the latter individual: He was probably of mixed racial origin, perhaps the offspring of an Indian mother and a European trader or *coureur de bois* (such relationships being quite common in the southeast by the early eighteenth century). At the same time, the intentional cranial deformation indicates that he was raised within an aboriginal society. And, finally, he found his way to Galveston Island, to die as a young man and to be interred within the bounds of an indigenous cemetery, suggesting that he was adopted or otherwise accepted into a local societal context.

The structural containment of both Features 63 and 64 is a trait absent in other graves at Mitchell Ridge, as well as from the trait inventory of burials and cemeteries at other reported sites in the upper coast area and from the larger Texas region. In this regard, both graves suggest the introduction of outside influences into Early Historic mortuary ritual at the site. However, the geographic and/or cultural point of origin for this trait cannot be precisely defined. The practice is vaguely reminiscent of ethnohistoric reports from the Lower Mississippi valley and adjacent regions, which note mortuary treatment of elite individuals according to customs involving the use of funerary structures or charnel houses (Swanton 1911:138; 1946). The probably related, archaeologically documented pattern of burials associated with temple structures placed on platform mounds may have survived into the European contact period in the Lower Mississippi Valley, possibly as late as the beginning of the eighteenth century (Brain 1988:204-232). The structures which contained Features 63 and 64 definitely do *not* appear to be

Southeastern charnel houses, and they certainly were not mound-top temples. It may be possible, however, that they represent an attempt to transplant, in a token sort of way, the idea of placement of the deceased within an artificially bounded sacred or ritual space. Indeed, it is worth noting that small pole-frame structures, or "gravehouses", enclosing individual burials, are documented for various Southeastern Indian cemeteries of the later historic period (Jordan 1982), and Features 63 and 64 at Mitchell Ridge may well represent eighteenth century prototypes and thus provide a historical link between Southeastern aboriginal burial practices and the mortuary traditions of the nineteenth and early twentieth centuries.

While such interpretations are hardly conclusive, the extended body positions and cranial deformation found in Feature 64 do have their closest analogs in the general Southeastern Mississippian cultural tradition. The highly volatile political and sociocultural situation in the Lower Mississippi Valley during the early-to-middle eighteenth century, discussed in Chapter 4, resulted in widespread displacements and/or amalgamation of numerous native peoples, some of whom are documented to have taken refuge among coastal Atakapa peoples. The findings in Features 63 and 64 are clearly locally anomalous, and probably are an archaeological example of the kinds of movements and amalgamation of people which are evidenced in the historical record.

It is important to note that, despite the presence of undoubtedly "foreign" elements, all of the Early Historic burials share basic traits with earlier burials at Mitchell Ridge. The consistent southwestward head orientation matches the pattern of earlier interments, and recurrent kinds of grave goods such as the whooping crane ulna whistles and conch and olive shell ornaments have Late Prehistoric and/or Protohistoric counterparts. Also, aside from the extended burials in Feature 64, the modes of burial--primary semiflexed, secondary, secondary cremation, and token-- all occur earlier at Mitchell Ridge and most are documented at other upper Texas coast sites. Probably of fundamental importance is the fact that all Early Historic burials are found within burial clusters which contain Late Prehistoric and Protohistoric graves, strongly suggesting continuity in the use of traditional mortuary space.

In sum, the Early Historic burials at Mitchell Ridge evidence both continuity of tradition on the one hand, and the influx and absorption of new people and cultural ideas on the other. Furthermore, the evidence of Burial 4, Feature 64, suggests that the newcomers had already experienced a degree of racial and/or cultural miscegenation prior to their arrival on the upper Texas coast.

The merging of peoples probably can be viewed as an adaptive mechanism by which native groups were able to maintain viable populations levels by which economic and social organizations could continue to function. In fact, the apparent stabilization of population levels for both the Karankawa and the Akokisa during the latter half of the eighteenth century may reflect bolstering of locally depleted populations via this mechanism. Certainly, epidemic diseases continued to rage in the region up to and after the turn of the nineteenth century, so the apparently stable population levels cannot be attributed to a disease-free environment after 1750. The Texas and Louisiana coastal zones were probably refuge areas for dispersed remnant native peoples during the eighteenth century, a pattern suggested ethnohistorically (see Chapter 4, herein; also Aten 1983a; Ricklis 1990), and now evidenced archaeologically by the findings at Mitchell Ridge.

Evidence for Changing Economic Patterns in Early Historic Times

With the onset of direct contact with French traders, the demographic, social and psychological stresses of epidemic disease, as well as reformulations of social identities and relations that must have attended merging of peoples, the eighteenth century was clearly a dynamic period of rapid and multidimensional change for the native people who occupied the Mitchell Ridge Site. There is also some evidence that fundamental changes were taking place in the native subsistence economy. Powell has discussed the dental data from the Mitchell Ridge burials, which point to a shift in diet during the contact period, with the teeth of Early Historic individuals exhibiting less wear than found in earlier individuals and, conversely, greater incidence of dental carries. A shift to a softer diet is suggested by the comparative dental evidence, and Powell suggests that this may have involved the introduction of horticultural products into the local subsistence base. Additionally, Huebner suggests in Chapter 10 that shifts in stable carbon isotopic data may signal dietary changes between the Late Prehistoric and Early Historic Periods.

These findings may help to resolve an apparent contradiction in the ethnohistoric literature concerning subsistence practices in the upper coast region. As noted in Chapter 4, Cabeza de Vaca

described upper coast subsistence patterns as non-horticultural in the sixteenth century, and as late as 1720 De Bellisle stated that the native people of the area lived by hunting and gathering and possessed no fields or permanent dwellings ("cabins"). On the other hand, the Spanish commander, Orobio y Bazterra, noted Indian gardens with corn and vegetables near the mouth of the Trinity River in May of 1748. Assuming that these various observations are essentially accurate, it must be concluded that either (a) Orobio y Bazterra was observing a different traditional adaptive pattern than were Cabeza de Vaca and De Bellisle, or (b) the natives of the Galveston Bay area began to practice horticulture sometime between 1720 and 1748. The fact that the Early Historic burials at Mitchell Ridge (which probably date to, or very close to, just this time interval) show evidence for dietary change from the preceding Protohistoric and Late Prehistoric Periods offers some support for the latter possibility.

Given the archeological evidence from the burials which suggests the influx of peoples from Southeastern agricultural societies, it is possible that the practice of horticulture was introduced by such immigrant people. Of course, it is also possible that indigenous Galveston Bay area people adopted horticultural practices as an adaptive response to internal systemic developments in their own socioeconomic and demographic situation. Certainly, they would not have had to look far afield to find the requisite technological information, since the Caddoans directly to the north had long practiced maize horticulture. Aten (1983a) has in fact suggested that the people of the region may have been poised for an adaptive transformation due to long-term population growth and attendant systemic pressures. However, a rather strong case for subsistence change based on new, external cultural input is represented by the chronological conjunction in the early eighteenth century of (a) group disruptions in the Southeast and resultant displacements of peoples, (b) influx of outsiders to the upper Texas coast, (c) the ethnohistorically documented appearance of horticulture, and (d) the osteological evidence for dietary change. Furthermore, a rapidly declining eighteenth century population would, presumably, not place the kind of pressure on environmental carrying capacity that would provide an internal systemic catalyst for a shift to food production.

CHAPTER 13

SUMMARY DISCUSSION: KEY POINTS AND THEIR ECOLOGICAL AND SOCIOCULTURAL IMPLICATIONS

Human Ecological Patterns Through Time

The data recovered at Mitchell Ridge indicate that subsistence was based importantly on fishing, with significant inputs from hunting (deer) and trapping of hispid cotton rats. Plants can be inferred to have been highly significant, since, as discussed in Chapter 5, protein-rich caloric intake from fish and red meat would have needed to be balanced by carbohydrates. In fact, the accounts of Cabeza de Vaca and De Bellisle both indicate an important dietary role on the upper coast for starchy roots and tubers.

Occupation at Mitchell Ridge was probably intermittent, and recurrent on a seasonal basis. The relevant data are limited, but the seasonality analyses of oysters and fish otoliths suggest an emphasis on fall-winter occupation. This fits with Cabeza de Vaca's observation that his Isla del Malhado (which may or may not have been Galveston Island but was almost certainly somewhere in the upper coast area) was occupied during the fall and winter, with subsistence relying heavily on fishing and the gathering of aquatic roots. The pattern may in fact be analogous to that suggested archaeologically and ethnohistorically for the central Texas coast, where spawning-related fish concentrations are suggested to have attracted fall-winter shoreline occupation by relatively large human population aggregates (Ricklis 1988; 1990; 1992b). Fish were certainly available year-round, but fall-winter concentrations would have reduced risk in heavily relying on fishing, particularly if group sizes were seasonally large, as they probably were during the fall and winter on the central coast. Winter population aggregations of humans are posited by Aten for the inland areas of the upper Texas coast, and perhaps on barrier islands as well. Dering and Ayers (1977) suggest shoreline aggregation on barriers at this time of year, based on Cabeza de Vaca's observations.

There is no direct evidence concerning the size of groups that occupied Mitchell Ridge. The presence of probable domiciles, indicated by small round or oblong post mold patterns, and what were probably storage pits (Feature 9 and perhaps other smaller pits in the Block Excavation and Area 3) suggests that occupation of the site involved more than very short-term residence. In conjunction with the very limited ethnohistoric data provided by Cabeza de Vaca (discussed in Chapter 4) it can be at least suggested that sizeable groups, perhaps of up to several hundred people, lived seasonally at Mitchell Ridge and other locales on upper coast barrier islands. Certainly the quantity and range of artifacts recovered, and the presence of discrete cemeteries, suggest that the site (and presumably the island in general) saw occupation geared to more than short-term resource extraction activities.

Our data provide some insight into diachronic patterns of occupation of Mitchell Ridge and, inferentially, suggest some long-term trends in the prehistoric human ecology of the Galveston Bay area. Use of the site was apparently infrequent and/or small-scale prior to the Initial Late Prehistoric Period. Only the 1970s burial 10 dates prior to ca. A.D. 800, and occupation probably intensified (in the sense at least of becoming more frequent), during the Final Late Prehistoric Period. Most radiocarbon-dated features pertain to this period (see Fig. 12. 1), and burials are slightly more abundant during the Final Late Prehistoric than the Initial Late Prehistoric. Considering that the Final Late Prehistoric Period (ca. A.D. 1250-1500) lasted about half as long as the Initial Late Prehistoric (ca. A.D. 700-1250), the greater number of radiocarbon dates for the Final Late Prehistoric suggests a markedly increasing frequency of site use after ca. A.D. 1250. In short, the available radiocarbon data suggest only sporadic occupation prior to ca. A.D. 700/800, and increasingly frequent and/or extensive use of Mitchell Ridge by the Final Late Prehistoric.

Time-diagnostic lithics also provide some reasonably reliable indicators of the relative intensity of site use over the long-term. Dart points, which probably predate ca. A.D. 700 or so (in light of lithic chronological data from the larger surrounding Texas region), are extremely scarce at the site: The only extant specimens which actually appear to represent dart points (as opposed to other relatively large, thick bifacial tool forms) are two fragments in the 1970s collection (see Chapter 6). All other definite projectile points from the site are arrowpoints, suggesting relatively light occupation prior to the Initial Late Prehistoric. Moreover, the Final Late Prehistoric Period Perdiz type is far more abundant than the Scallorn type, which elsewhere in Texas is diagnostic of the earlier part of the Late Prehistoric, ca. A.D.

700-1250/1300. Only four Scallorn points are known from the site (1 from the 1992 Block Excavation, 1 from the 1970s excavation, 2 from Burial 12 in the 1970s Cross Area, probably the cause of death). In marked contrast, the Perdiz type is represented by 35 specimens, not including a number of Perdiz-like points and several probable Perdiz on which the diagnostic stem is broken off but which otherwise resemble the type in size and shape.

Ceramics are also helpful as a very general indicator of the chronology of site use. It is doubtless significant, for example, that in the large ceramic collection from the site, there are no specimens of what are clearly types representing the earliest part of the ceramic continuum in the upper Texas coast (i.e., Tchefuncte ware, Mandeville Plain, or cord-mark-decorated Goose Creek pottery). Though these early types are in general not common at sites in the early part of the ceramic sequence (see Aten 1983a, Figure 13.1), their presence is well documented in Aten's total ceramic sample of over 16,000 sherds from 71 site components. The fact that not a single specimen is present in the still larger Mitchell Ridge sample of over 26,000 sherds can be taken as indicative of scant occupation of the site in the earliest part of the Ceramic Period.

Two basic alternative hypotheses can be formulated to explain the chronology of occupation at Mitchell Ridge:

1. The site (and, by extension, Galveston Island as a whole) may not have been particularly attractive for habitation prior to the Initial Late Prehistoric, because of ecological factors. The island may have still been an unstable landform subject to frequent washover, marked by numerous, shifting tidal passes connecting a still incipient lagoonal environment in West Bay with the open Gulf of Mexico. Concomitantly, the local aquatic environment of West Bay and Eckert Bayou would as yet be an immature lagoonal system, and the highly protected, extensive shallows-- of the sort conducive to establishment of high primary productivity, extensive subaqueous vegetation and the establishment of dependent, high biomass of primary (molluscs) and secondary (fish) consumer populations-- may not yet have emerged. Extensive, shallow-water estuaries are far more productive in terms of aquatic biomass than open oceans (e.g. Odum 1971; Perlman 1980; see also discussions in Ricklis 1993a). If Galveston Island was not yet a stable, continuous barrier, the lagoonal systems may simply not have provided the kind of protected, resource-rich environment which was optimally suited to exploitation with a limited extractive technology. The available and/or accessible resource base may have been sufficiently limited or unreliable that prehistoric people did not perceive a favorable cost-benefit outcome in its occupation, insofar as the time and effort required to reach the island may not have made sense in terms of the potentially inadequate returns in subsistence resources.

2. Alternatively, the island may have been suitable for resource extraction, and thus for occupation, but people living on the mainland may have simply had no need to invest the time and effort required for its occupation prior to the Initial Late Prehistoric. In other words, according to a least-risk, least-effort strategy (e.g. Jochim 1981), the mainland provided a resource base which was adequate to sustain the standing human population of the Galveston Bay area. The converse implication is that increasing use of the island beginning in the Initial Late Prehistoric must reflect an increasingly unfavorable ratio of human population to environmental productivity on the mainland, either through (a) environmental deterioration and attendant reduction of available food resources, or (b) growth of areal human population to the point at which stress was placed on existing resources and thus on the adaptive viability of the existing human ecosystem. Since there is presently no evidence for a decline in environmental productivity after ca. 2000 B.P., either in the Galveston Bay area (e.g. Aten 1983a) or on the western Gulf coastal plain in general (e.g. Story 1985b), and since, if anything, the general productivity of Texas coastal estuaries was probably increasing after ca. 2000 B.P. (see Ricklis 1993a), the latter explanation at present seems the more reasonable. This is in fact in line with Aten's (1983a) suggestion of a directional increase in upper Texas coast human population after ca. 1800 B.P.

Hypothesis 1, which posits a very minimal occupation of Mitchell Ridge prior to the Initial Late Prehistoric due to an immature barrier island/lagoonal environment, does not appear to fit with the geoarchaeological situation observed at Mitchell Ridge. As noted in previous chapters, all intact aboriginal occupational debris was found *within* the dark brown, fine sand soil which blankets the site. It was never found at the base of the soil, that is, resting at the unconformable contact with the underlying, wave/storm surge-deposited light colored sand/shell hash. Thus it is apparent that the major change in sediment depositional regime which represents a shift from high-energy wave deposition to eolian deposition of fine sands (with high organic content involving establishment of permanent vegetation, probably mainly

grasses), took place *prior* to the first intensive occupation of the site. Since the shift in depositional regime must represent a changed relation between sea level and island topography (i.e., the core of the island was now higher than the level generally attained by storm surges, and a source for eolian sands was already present as the island's seaward ridge and swale topography had begun to develop), it is likely that the island was essentially a mature barrier some time considerably prior to initial intensive occupation; enough time elapsed between the attainment of the essentially modern landform and intensive human occupation for the lower part of the organic-rich fine sand cumulic soil to develop.

This interpretation is in accord with general assumptions concerning the geologic history of Galveston island (and the Texas barrier islands in general), which posit mature barriers along the coast by ca. 2500 B.P. (Fisher et al. 1972; Brown et al. 1976). It also accords with geoarchaeological inferences for the central Texas coast, where the available data indicate increasing intensity of shoreline site occupation based on exploitation of a high estuarine biomass-- under basically modern estuarine conditions-- by ca. 2000 B.P. (Ricklis 1993; Ricklis and Cox 1991). Intensive fishing emerged on the central coast by about this date, and this is inferred to reflect the emergence of extensive, vegetated estuarine shallows behind a more or less mature barrier system. Thus, while additional research is certainly in order concerning the chronology of ecosystemic evolution of the upper coast estuarine environment, the data we have at present tend to support hypothesis 2.

In sum, Mitchell Ridge saw its first major occupation ca. A.D. 700/800, and an apparently increasing intensity of occupation in the Final Late Prehistoric, a trend inferentially keyed to (a) a growing areal population and (b) a geographic expansion of resource exploitation to include barrier islands. The question then arises as to what were the human ecosystemic factors which led to the inferred population growth?

Aten (1983a) has suggested that a catalyst for population growth was the introduction of new technologies into the areal coastal adaptation, technologies which increased the efficiency of resource extraction and processing and thus the human carrying capacity of the environment. The archaeologically demonstrated introduction of the bow and arrow and pottery may constitute increasing efficiency in food procurement and processing, respectively. Aten also suggests that increased efficiency in fish procurement may have resulted from the introduction of artificial devices such as weirs.

Alternatively, environmental change may have played a crucial role in an increasingly productive human ecosystem. With the attainment of essentially stable, modern sea level on the Texas coast after ca. 3,000 B.P. (e.g. Fisher et al. 1972, Brown et al. 1976; Paine 1991), ongoing wave action and longshore drift deposited sands and shell to form the modern barrier islands which, in combination with sedimentation of estuarine bays and lagoons, created protected, extensive shallows, ideal nursery grounds for important fish species such as black drum, trout, redfish and others (Ricklis 1993a). Under these conditions, the productive potential of the coastal human ecosystem may have increased dramatically, initiating a trend toward growing regional populations. At a certain threshold of population density, the barrier islands would have become an attractive, additional resource zone to be exploited, thus relieving the cumulative stress placed on the resource base of the mainland and the shoreline shallows directly accessible from mainland habitation sites.

Cultural Tradition and Change at Mitchell Ridge

The combined findings from occupation and burial areas at Mitchell Ridge provide a body of information which elucidates patterns of cultural continuity and change over time. At a very general level, the non-perishable material culture from the occupation areas of the site show conservative tendencies, and at the same time evidence technological change. The ceramics, though apparently influenced/inspired by Lower Mississippi Valley-south Louisiana ceramic stylistic tradition, are of the same sort of simple, functional wares reported from numerous other sites in the Galveston Bay and adjacent areas, and obviously represent one site-specific expression of the regional ceramics which largely define Story's (1990) Mossy Grove tradition. On the other hand, lithic artifact forms reflect the participation of local folk in the larger processes of technological change which were taking place throughout a much larger, encompassing region. Though few specimens were found at the site, the Scallorn type arrowpoint appears to pre-date the Perdiz type, judging by the Initial Late Prehistoric age of Burial 12 in the Cross area, with which Scallorn points were associated. As elsewhere in Texas (Prewitt 1981, 1985; Turner and Hester 1993), the Perdiz type apparently replaced Scallorn (and in some places, other arrowpoint types) in the latter part of the Late Prehistoric, as evidenced at Mitchell Ridge by the predominance of the type in apparent

association with features in the Block excavation which date to the Final Late Prehistoric Period. Also part of the Final Late Prehistoric lithic assemblage at Mitchell Ridge are expanded base drills made on blades or long flakes, prismatic blades and, though uncommon, thin bifacial knives, all of which typify the latest prehistoric assemblages elsewhere in Texas (e.g., the inland Toyah Phase or Horizon [see Hester 1975; Prewitt 1981; Black 1986; Highley 1986] and the central coast Rockport Phase; see Ricklis 1992b).

Elsewhere in Texas, this Final Late Prehistoric lithic assemblage-- Perdiz points, blades, expanded-base drills, bifacial knives-- appears ca. A.D. 1250/1300, in association with more or less abundant quantities of bison bone. It has been suggested, therefore, that the rather abrupt appearance of the assemblage in the archaeological record is in some basic way related to bison hunting, either through (a) immigration into Texas of outside peoples, perhaps from points north or west (Prewitt 1985; Johnson n.d.), who were following southward-expanding bison herds (see Dillehay 1974; Creel et al. 1989; Huebner 1991b) and bringing with them the new technological package, or (b) though non-migrational spread of a lithic tool kit which was particularly well-suited to the hunting and processing of large game (e.g. Hester 1975; Black 1986; Mallouf 1987). In the central Texas coast Rockport Phase, the same shift is discernable, with the lithic assemblage appearing ca. A.D. 1250-1300, in association with bison bone (Ricklis 1992a).

The findings at Mitchell Ridge appear to provide an upper coast analog, since we have Perdiz points, prismatic blades, expanded-base flake drills and bison bone showing up in the Block Excavation area in association with radiocarbon dates clustering in and around the fourteenth century A.D. The unifacial end scrapers and thin bifacial knives, relatively common at inland sites, are very scarce at Mitchell Ridge, however. Only a single end scraper, from the 1970s excavation, is in the lithic sample from the site, and there are only two thin bifacial knives (one of which was with an adult male burial, Feature 86, dated to the Final Late Prehistoric). On the other hand, scrapers and knives are part of the general upper coast lithic assemblage (see Aten 1983a), and the presence of these tool forms, including the "classic" alternately beveled knives often found on inland sites with bison bone, were recovered at the Addicks Reservoir just west of Houston (Wheat 1953), in the sort of upland prairie environmental setting where large game hunting must have been focused. Since beveled knives and end scrapers are generally thought to have served, respectively, in the skinning of large game and in hide processing (e.g. Creel 1991), it is not surprising that they are particularly scarce at Mitchell Ridge, where there was a major economic focus on fishing; inferably, these items are rather function-specific tool forms which can be expected to occur primarily at mainland sites where activity revolved significantly around the procurement and processing of large game animals (once again, we can turn to De Bellisle's early eighteenth century observations, which provide ethnohistoric documentation of bison hunting on the coastal prairies by the native people of the Galveston Bay area). In short, then, the data from Mitchell Ridge indicate that the site's occupants were participating in some of the same shifts in subsistence regime and associated technologies which are evidenced elsewhere within the larger region which is now Texas.

Certain classes of data recovered at Mitchell Ridge shed light on the nature of aboriginal culture beyond the material dimension of subsistence economy and associated technological patterns. Primarily, this kind of information is provided by the burials at the site, features which were doubtless created within a cultural matrix of ritual and an attendant super-mundane belief system. Certain pertinent points have been touched upon in the previous pages; here they are explicitly enumerated and discussed.

1. Assuming that material remains from occupation areas represent different dimensions of aboriginal culture-- the technoeconomic or material on the one hand and the ritualistic on the other-- the occupational and burial artifact assemblages should show differences which reflect those different dimensions of behavior and cognition. This is the case at Mitchell Ridge and, in fact, there is a striking dissimilarity between the two assemblages.

The artifact assemblage from domestic debris deposits is dominated overwhelmingly by ceramics and certain kinds of redundantly occurring lithic forms, mainly arrowpoints. Both pottery and arrowpoints are remarkable for their absence in burials (excepting the 2 Scallorn points in Burial 12, which were almost certainly the cause of death rather than offerings). These commonly occurring tool forms, designed for food procurement and processing, were apparently not regarded as suitable items with which to express non-mundane concerns or concepts. Conversely, one of the most common classes of burial offerings, shell ornaments, is remarkably under-represented in the domestic debris: Only a single disk-shaped shell bead, from the 1970s excavation (and unprovenienced), can be assumed to come from a domestic context, compared to hundreds of conch, olive, and olivella beads from the burials. Interesting and perhaps significant as well is the fact that small bird bone beads, presumably ornaments, were found sporadically

in occupational areas, but none were found with the burials. Several much larger bird bone beads were found in burials (Features 85 and 86) but were not recovered from excavations in living areas. Also, as noted earlier, all of the bird bone whistles from burials were made from ulnae of whooping cranes, whereas the only two fragments of whistles from occupational debris (in the Block Excavation) are from smaller, heron-sized birds.

Overall, then, there seems to have been a significant dichotomy between the kinds of material culture produced for mundane, daily use, and that considered appropriate for use within a ritual or magico-religious context. The implication here is that the aboriginal occupants of Mitchell Ridge were possessed of a rather highly developed and thus cognitively circumscribed super-mundane belief system, whose material appurtenances were clearly defined and largely confined to use within specific ritual settings. This should not be interpreted to mean that mortuary offerings were necessarily and expressly produced only as burial goods; they may have been, and perhaps probably were, used in context other than mortuary ritual. However, given the rarity of items in the debris of daily life, it seems likely that their use was restricted largely to ritual contexts, and that they were disposed of within graves because of inherent magical or ideologically powerful properties.

The nature of the aboriginal belief system is, of course, largely unknown, and very difficult to discern, leaving aside pure speculation. We have briefly suggested in Chapter 11 that the presence of whooping crane whistles may be related to concepts concerning the final flight of the spirit (as articulated by Turpin, 1994), which seems reasonable in view of the consistent use of crane ulnae for whistle manufacture, the impressive nature of the bird, and the redundancy of whistles as mortuary objects at Mitchell Ridge and other sites in the surrounding region. Dreiss has suggested, in her discussion of the shell artifacts Chapter 11, that shell ornaments associated with the burials at Mitchell Ridge may have had significance beyond their immediate value in terms of labor investment. This makes good sense, considering, as noted above, the lack of such items in domestic debris deposits. Along with the presence of smoothed/polished freshwater mussel shell (most notably the large specimen resting on the chest of the individual buried in Feature 86), the bright and/or whitish color of shell ornaments may have had a symbolic significance, perhaps associated in some way with life or light. George Hammell, in an innovative exploration of the symbolic significance of beads and other brightly colored objects among the Iroquois and other Northeastern native American groups, suggests that quartz crystals and other bright white objects represented

a psychobiological expression of human perception's and cognition's dependency upon qualities of lightness, brightness, transparency, visiblenss and 'whiteness'. Light, bright, and white things are good to think (with). They are reflective substances, literally and figuratively" (Hammell 1983:14).

A similarly non-mundane significance may have been perceived in the whiteness or brightness of shell beads at Mitchell Ridge.

It is practically certain that the use of ochre in burials or on buried bodies had some kind of magico-religious significance. Red is a color of warmth, associated with life, and Aten (1983a) has suggested a possible red-black, life-death dichotomy in the belief system of the Akokisa and Karankawa. The placement of red ochre in graves on the bodies of the deceased may well have been intended as a material metaphor for life, and an affirmation of the rebirth of the individual, or the transference of his/her spirit, into an afterlife. The apparent solar symbol painted in masses of red and yellow ochre powder on the abdomen of the child in Feature 83 certainly suggests some kind of connection between the deceased and the power, light, warmth and/or life-giving properties of the sun.

Still, some of the burial goods consisted of artifacts which clearly must have served mundane functions in daily life (though they are a minority among the offerings). These include lithic tools (flakes and prismatic blades, drills, and a bifacial knife), bone points, and antler billets. These all come from contexts which suggest that they represent tool kits associated mainly with adult males. The Final Late Prehistoric Burials, Features 86 and 87, both contained clusters of flakes and/or blades with evidence of edge utilization, and a utilized chert prismatic blade was found with the Early Historic adult male burial in Feature 63. Feature 65, the burial of another Early Historic adult male, contained a suite of domestic tools including bone points, an antler billet of the sort generally used in flaking stone tools, and a chert drill (as well as iron tool and wrought nail fragments). It is probably relevant to note too that Burial 10

in the Cross Area, although much earlier in time and probably pertaining to an older mortuary tradition, was also an adult male buried with socketed bone points and what appear to be bone blanks and tools for the production of such points.

It would seem, then, that mundane items in burials represent collections of tools, either for use in some conceptualized afterlife situation or as items which highlighted the individual's role in life. The association of these items with adult males-- they did not occur with children or adult females-- suggests a gender/role correlation, and perhaps represents an attempt on the part of survivors to encourage continuity of personal identity or being (as expressed by his personal socioeconomic role) of the deceased in the afterlife. Thus, although the artifacts were mundane tools, their depositional context was a ritual one and they were probably intended to affirm basic beliefs about the nature of life and death.

2. The production of the various non-mundane items associated with burials was inferably contingent upon sufficient time and energy being available after the demands of subsistence activities had been met. At least some members of aboriginal society had to have had enough time to devote to labor-intensive activities such as the grinding, cutting and drilling of columella beads, and the procurement of whooping crane bone for whistles, not to mention the time invested in creating the intricate designs which adorn some specimens. By implication, it can be suggested that the subsistence patterns followed by the occupants of Mitchell Ridge must have yielded a favorable cost-benefit ratio as output (food/calories) to input of time in energy in the search for and procurement of food resources, and this generated sufficient surplus to permit some focus on non-mundane activities. This should not be unexpected in a coastal adaptive system involving reliance on a shallow-water, high biomass estuarine environment; worldwide, such environments are generally highly productive, and in places sufficiently so to provide a basis for sedentary life, or at least semi-sedentism, fairly dense hunter-gatherer populations, and the emergence of relatively complex societal organizations (e.g. Perlman 1980; Yesner 1980).

While it is advisable not to "over-interpret" our limited data on this point, it is worth noting that the various non-mundane grave goods evidence rather sophisticated levels of workmanship, and may very well represent some degree of part-time craft specialization, one indicator of internal differentiation within a socioeconomic system (beyond the most basic distinctions based on age and gender). Shell ornament production, at least the drilling of tubular columella beads, would presumably require a fairly sophisticated level of skill, the development of which would probably take some practice. Certainly, the intricate engraved decorations on some of the bird bone whistles, which are remarkably precise and free of mistakes, could not be executed at a first attempt by a complete novice.

3. As discussed in the preceding chapter, the variable placement of wealth as burial offerings correlates with age and sex groupings, and clusters according to spatially discrete cemeteries. Both patterns are probably indicative of status differentiation within aboriginal society. The age-sex related correlation, in which burial goods are overwhelmingly placed with adult males and subadults, as noted, appears to indicate a preferential treatment in death of men and children, and correspondingly less attention to women. Assuming that this reflects to some degree social relations among the living, status was more readily according to men and children than to women. Following the same line of reasoning, not all men were of equal status, since not all adult male burials contained material wealth. Differential male status has been discussed by Aten (1976, 1983a), who has presented archaeological evidence for variability in male mortuary status and ethnohistorical documentation indicative of leadership/authority roles for band headmen. This degree of role and status differentiation, rooted in social distinctions based on age and sex, and on personal achievement is, as Aten notes, in accord with expectations for an essentially egalitarian social organization.

However, our findings at Mitchell Ridge have suggested that aboriginal social organization may have been somewhat more complex than that, insofar as age/sex and achieved statuses may not have been the only basis for social distinctions. The abundance of burial offerings in the Area 4 cemetery, as opposed to the other cemeteries at Mitchell Ridge, is remarkable, with 91% of the graves containing offerings (compared to 20-25% in other cemeteries) and with the range of offerings including 24 classes of goods, compared to only one to three in other cemeteries. Although the number of individuals in each cemetery is not large, the facts that (a) the great majority of individuals with offerings are spatially segregated within one cemetery, and (b) the overwhelming bulk of burial goods from the site come from that cemetery, strongly suggests that Area 4 was reserved for some segment of society which was accorded greater wealth in death, and, presumably some kind of differential status during life.

The archaeological data cannot tell us the precise nature of the social distinction involved, and the

ethnohistorical record is too skimpy concerning social organization to provide much insight into the nature of societal segmentation which might be represented. At this stage of our knowledge of aboriginal culture in the area, about all that can be suggested is that the social organization was probably not strictly egalitarian, and involved some degree of institutionalized status ascription, perhaps involving certain lineages.

The origin of this sort of incipient hierarchical social structure is also impossible to define with presently available information. If the postulation that the upper Texas coast experienced a growing population during the Ceramic Period is valid, it would be expectable to find the emergence of a degree of internal sociopolitical complexity, as pressure on resources and territorial boundaries would have been a systemic catalyst for the emergence of a segment of society in which was vested a certain authority to control, or at least influence, the use of resource zones and perhaps even, to some extent, the distribution of the actual resources (e.g. Service 1971; Price and Brown 1985).

If such a need developed, the indigenous people of the Galveston Bay area would not have had to look too far afield for appropriate sociopolitical models. Relatively complex and hierarchical sociopolitical systems were operative among the Caddoan groups to the north (e.g. Perttula 1992), and had a long history among the populous Mississippian and proto-Mississippian cultures of the Lower Mississippi Valley and coastal southeast Louisiana (Phillips 1970; Neuman 1984). In fact, platform mounds, a diagnostic feature of Mississippian culture and presumably an indicator of sociopolitical hierarchy, are found as far west along the coast as south-central Louisiana (Weinstein and Kelly 1992; Neuman 1977; Fullen and Fullen 1987), close to, if not within, the traditional range of Atakapa-speaking groups who in turn were linguistically related to the Akokisa of the Galveston Bay area. If the Atakapa of Louisiana had ready access to cultural information concerning more complex modes of sociopolitical organization, or were even in a limited way participating in such patterns, it is not difficult to envision such information flowing along the coast to influence developments in the Galveston Bay area. Certainly, a very general pattern of influence from that direction is evidenced in the ceramics of the area, beginning in Tchefuncte times and continuing with the dissemination of Coles Creek stylistic influence. While all of this probably stretches our data to its interpretive limits, it does so in the direction which seems to be indicated by available information, and suggests significant lines of inquiry for future investigation into the kinds of cultural processes which may have been operative along the northwest Gulf coast.

4. A remarkable fact of the Mitchell Ridge burials, noted earlier but worth reiterating, is that each of the small cemetery groups was used for several hundred years, suggesting a deeply rooted linkage between people and place, and a strong oral tradition concerning proper locations for burial of the dead. The very extensive exposure, in 1992, of the western part of the site makes clear the fact that the burial clusters in Areas 1 and 4 were spatially discrete, and that, with the exception of only a single isolated burial (Feature 52 in Area 3), other burials were not present. Thus, the cemeteries in these areas were not simply fortuitous phenomena in which repeated interments create a false impression of intentional groupings of burials. The cemeteries are simply surrounded by too much ground which is devoid of burials to allow for any suspicion that they do not represent intentional clustering of graves. At the same time, too few individuals were interred in either Area 1 or Area 4 for the knowledge of where to place burials to have been acquired consistently through direct observation: Years or decades must have passed during which burials were not placed in any given cemetery. The pertinent knowledge concerning burial locations must have been maintained, then, by oral tradition, perhaps among a select lineage of shamans or some other specially designated set of individuals.

Also indicative of deeply rooted tradition are the headward orientations of the Mitchell Ridge burials. Beginning in the Initial Late Prehistoric Period and continuing into the Early Historic, bodies were interred with the heads oriented to the west or southwest, with virtual consistency. As noted in Chapter 12, this is a pattern which is apparently shared at sites to the south along Galveston Island and at least to the area of the Brazos River delta (i.e., at the Jamaica Beach and Shell Point sites), and which, judging from the chronological data from Mitchell Ridge, had a considerable time depth.

5. Finally, the burials dating to the Protohistoric and Early Historic Periods present a remarkable body of information relevant to cultural and demographic change during the period of European contact. In combination with the historic documentation, the data indicate that local people were involved in the deerskin trade, probably by the second quarter of the eighteenth century. More surprising is that goods of European manufacture were reaching the area in Protohistoric times, probably by the first half of the seventeenth century, as indicated by the large blue-green glass beads (Ichtuknee Plain) in Features 82 and

83. Such items may have been a great rarity in the area so early on, and it may be that their presence in burials in Area 4 is one more indication of a special status for the individuals buried there. Marvin Smith (1987) has pointed out that early European goods tended to be controlled by elite groups in the Southeast, and to have been buried with the dead accordingly, and it is possible that Features 82 and 83 present an analogous situation (though this does not imply a similar level of sociopolitical evolution on the upper Texas coast). The source of these early glass beads cannot be pinpointed, but the common presence of the type in the Southeast, discussed in Chapter 8, hints at an origin in the early Spanish settlements and missions of the eastern Gulf coast. Direct contact between Spaniards and Galveston Bay people is perhaps unlikely at this date, but trade goods could have reached the latter people through indirect means, perhaps via down-the-line trade between indigenous coastal peoples.

The probable indications in the Early Historic mortuary data of eighteenth century epidemic disease and increased mortality, and biological mixing of peoples, have been discussed by Powell in Chapter 9, as well as in Chapter 12, and need not be reiterated in any detail here; the biological and cultural mixing of peoples during Early Historic times is one of the more striking aspects of the burial data, and affirms the highly volatile sociocultural situation created by European colonization of the Gulf coastal plain as indicated by the historic record and by archaeological data for the Southeast. Particularly interesting is that the mixing process apparently involved people who were the offspring of native-Euroamerican matings or marriages. If the small Early Historic burial sample from Mitchell Ridge is at all representative of the genetic makeup of the population, the local population by the mid-eighteenth century was already the product of considerable miscegenation. More bioarchaeological data will be required, however, in order to assess the overall degree of biological mixing by this time, considering the small sample size from Mitchell Ridge.

Finally, the presence of anomalous cultural traits of probable or possible Southeastern origin, such as intentional cranial deformation and structural enclosure of mortuary space, may provide one more linkage between the Galveston Bay area and points east. Although these traits appeared as the result of disruptions of traditional patterns, they could reflect long-established lines of communication/interaction along the coast which linked Galveston Bay area people to the Atakapa, and perhaps less directly, with other groups further removed.

In sum, the findings at Mitchell Ridge are suggestive of an aboriginal lifeway deeply rooted in tradition but also affected by, and responsive to, change. They also suggest a rather more complex cultural system than has generally been ascribed to the native peoples of the Texas coast, a culture which probably involved a complex belief system (of which we so far have only glimpses), a measure of aesthetic sophistication in the production of ritual artifacts and, if the present interpretation of the burial data has validity, at least an incipient hierarchical social organization heretofore unrecognized in the archaeological or ethnohistorical records for the upper Texas coast.

Despite a strongly traditional way of life, evidenced in what seems to be a redundant, long-lived ceramic tradition and in a long-lived mortuary tradition, the upper coast people who resided at Mitchell Ridge were interconnected with people and developments in the larger world of which they were a part. They found inspiration for their ceramic stylistic expressions from pottery traditions to the east, and shared in a Late Prehistoric lithic technological pattern with peoples of inland areas. During Protohistoric times, they had limited access to European materials which probably came from some considerable distance, and they seem to have quickly responded to the perceived opportunities of the Early Historic deerskin trade, once French traders began to operate along the northwest Gulf coast. Under the pressures attending colonization, particularly the drastic impacts of disease and population loss, Galveston Bay area people accepted outsider refugees into their local society, judging from the presence of anomalous burials and individuals buried within traditional cemetery space.

Future research on the upper Texas coast will hopefully more fully elucidate the various dimensions of regional aboriginal culture evidenced at Mitchell Ridge, by addressing key questions concerning (a) rates and magnitudes of long-term prehistoric population growth in the context of an emerging, high-productivity coastal environment, (b) the evolution of native culture as an adaptive system and definition of its level of internal complexity, and (c) extra-areal cultural relations, particularly with the still poorly investigated area of southwest Louisiana, and, ultimately, the rest of the northwestern part of the Gulf coast, with which important linkages appear to be indicated.

APPENDIX

Radiocarbon Data from the Mitchell Ridge Site

Appendix: Radiocarbon data from the Mitchell Ridge Site listed in chronological order (except for geologic shell hash dates at end of table).

Sample* number	Provenience & material **	Raw 14C Age	C13- corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma. All calibrations use Stuiver and Reimer 1993.
<u>Beta-58748</u>	1970s Burial 10 HB	NA	1920+/-70	1 sigma BP 1932 (1866) 1753 AD 18 (84) 197
				2 sigma BP 1995 (1866) 1753 BC 45 (AD 84) AD 310
<u>Beta-58749</u>	1970s Burial 12 HB	NA	1200+/-70	1 sigma BP 1223 (1078) 994 AD 727 (872) 956
				2 sigma BP 1280 (1078) 952 AD 670 (872) 998
<u>Beta-64565</u>	1970s Burial 4 HB	980+/-60	1110+/-60	1 sigma BP 1065 (983) 945 AD 885 (967) 945
				2 sigma BP 1165 (983) 924 AD 785 (967) 1005
<u>Beta-53666</u>	Feature 25 HB	NA	1040+/-90	1 sigma BP 1055 (939) 800 AD 895 (1011) 1150
				2 sigma BP 1161 (939) 735 AD 789 (1011) 1215
<u>Beta-58747</u>	1970s Burial 7 HB	870+/-90	990+/-60	1 sigma BP 946 (925) 794 AD 1004 (1025) 1156
				2 sigma BP 984 (925) 745 AD 966 (1025) 1205

* Underlined samples were assayed with accelerator mass spectrometer.

** HB = Human bone, C = Charcoal, O = Oyster shell

Appendix, continued.

Sample number	Provenience & material	Raw 14C Age	C13-corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
TX-2606	1970s "Feature 10" Shell	510+/-50	880+/-50	1 Sigma BP 899 (774) 724 AD 1051 (1176) 1226
TX-2605	1970s "Feature 10" C	780+/-150	----	2 Sigma BP 922 (774) 673 AD 1028 (1179) 1277
<u>Beta-53670</u>	Feature 52 HB	NA	730+/-60	1 Sigma BP 898 (675) 565 AD 1052 (1275) 1385
				2 Sigma BP 966 (675) 514 AD 984 (1275) 1436
<u>Beta-64564</u>	1970s Burial 3 HB	570+/-50	680+/-50	1 sigma BP 665 (652) 654 AD 1285 (1298) 1386
				2 sigma BP 733 (664) 557 AD 1217 (1286) 1393
Beta-55867	Feature 106 O	280+/-50	650+/-50	1 sigma BP 658 (645, 583, 577) 554 AD 1292 (1305, 1367, 1373) 1396
				2 sigma BP 670 (645, 583, 577) 542 AD 1280 (1305, 1367, 1373) 1408

Appendix, continued

Sample number	Provenience & material	Raw 14C Age	C13-		Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
			corrected	14C age	
Beta-55863	Feature 109 C	650+/-90	610+/-90		1 sigma BP 657 (628, 610, 557) 529 AD 1293 (1322, 1340, 1393) 1421
					2 sigma BP 690 (628, 610, 557) 501 AD 1260 (1322, 1340, 1393) 1449
Beta-58746	Feature 87 HB	440+/-70	610+/-70		1 sigma BP 653 (628, 610, 557) 539 AD 1297 (1322, 1340, 1393) 1411
					2 sigma BP 669 (628, 610, 557) 511 AD 1281 (1322, 1340, 1393) 1439
Beta-64563	Feature 84 HB	430+/-110	600+/-110		1 sigma BP 660 (622, 617, 555) 517 AD 1290 (1328, 1333, 1395) 1433
					2 sigma BP 721 (622, 617, 557) 1483 AD 1229 (1328, 1333, 1395) 1483
TX-2598	1970s "Feature 28" Shell	230+/-70	600+/-70 (estimated correction)		1 Sigma BP 650 (622, 617, 555) 534 AD 1300 (1328, 1333, 1395) 1416
					2 Sigma BP 667 (622, 617, 555) 509
Beta-55862	Feature 105 C	650+/-170	590+/-170		1 sigma BP 671 (552) 496 AD 1279 (1398) 1454
					2 sigma BP 898 (552) 293 AD 1052 (1398) 1657

Appendix, continued.

Sample number	Provenience & material	Raw 14C Age	C13-corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
Beta-58673	Feature 4 C	610+/-80	570+/-80	1 sigma BP 645 (547) 517 AD 1305 (1403) 1433
Beta-58745	Feature 86 HB	NA	520+/-70	2 sigma BP 665 (547) 485 AD 1285 (1403) 1465
Beta-58866	Feature 114 O	140+/-50	510+/-50	1 sigma BP 552 (529) 506 AD 1398 (1421) 1444
Beta-58668	Feature 92-1 HB	NA	450+/-60	2 sigma BP 648 (529) 467 AD 1302 (1421) 1483
Beta-58744	Feature 83 HB	NA	420+/-60	1 sigma BP 545 (524) 509 AD 1405 (1426) 1441
Beta-58668	Feature 92-1 HB	NA	450+/-60	2 sigma BP 630 (524) 483 AD 1320 (1426) 1467
Beta-58744	Feature 83 HB	NA	420+/-60	1 sigma BP 525 (506) 472 AD 1425 (1444) 1478
Beta-58744	Feature 83 HB	NA	420+/-60	2 sigma BP 548 (506) 319 AD 1402 (1444) 1631
Beta-58744	Feature 83 HB	NA	420+/-60	1 sigma BP 515 (496) 334 AD 1435 (1454) 1616
Beta-58744	Feature 83 HB	NA	420+/-60	2 sigma BP 541 (496) 309 AD 1409 (1454) 1641

Appendix, continued.

Sample number	Provenience & material	Raw 14C Age	C13-corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
TX-2604	1970s Shell	50+/-70	420+/-500 (estimated correction)	1 sigma BP 512 (496) 339 AD 1438 (1454) 1611 2 sigma BP 531 (496) 315 AD 1419 (1454) 1635
Beta-53667	Feature 30 HB	NA	370+/-60	1 sigma BP 502 (462, 341, 339) 312 AD 1448 (1488, 1609, 1611) 1638
Beta-53672	Feature 9 C	380+/-70	360+/-70	2 sigma BP 518 (462, 341, 339) 293 AD 1432 (1488, 1609, 1611) 1657 1 sigma BP 502 (439, 350, 334) 306 AD 1448 (1511, 1600, 1616) 1644
Beta-64566	Feature 82	220+/-50	320+/-60	2 sigma BP 520 (439, 350, 334) 0 AD 1430 (1511, 1600, 1616) 1952 1 sigma BP 468 (420, 413, 315) 296 AD 1482 (1530, 1537, 1635) 1654
Beta-55870	Feature 61 HB	190+/-70	310+/-70	2 sigma BP 504 (420, 413, 315) 0 AD 1446 (1530, 1537, 1635) 1954 1 sigma BP 468 (312) 290 AD 1482 (1638) 1660 2 sigma BP 507 (312) 0 AD 1443 (1638) 1954

Appendix, continued.

Sample number	Provenience & material	Raw 14C Age	C13-corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
<u>Beta-55872</u>	Feature 63 HB	NA	220+/-70	1 sigma BP 306 (284) 0 AD 1644 (1666) 1954
				2 sigma BP 489 (284) 0 AD 1511 (1666) 1955
<u>Beta-53669</u>	Feature 92-2 HB	NA	200+/-60	1 sigma BP 296 (278, 169, 155, 4, 0) 0 AD 1654 (1672, 1781, 1795, 1946, 1953) 1954
				2 sigma BP 421 (278, 169, 155, 4, 0) 0 AD 1529 (1672, 1781, 1795, 1946, 1953) 1955
Beta-55865	Feature 64-4 C	150+/-80	130+/-80	1 sigma BP 281 (255, 225, 134, 28, 0) 0 AD 1669 (1695, 1725, 1816, 1922, 1954) 1955
				2 sigma BP 306 (255, 225, 134, 28, 0) 0 AD 1644 (1695, 1725, 1816, 1922, 1954) 1955
Beta-55873	Feature 64-1 HB	modern	130+/-50	1 sigma BP 272 (255, 225, 134, 28, 0) 0 AD 1678 (1695, 1725, 1816, 1922, 1954) 1955
				2 sigma BP 287 (255, 225, 134, 28, 0) 0 AD 1663 (1695, 1725, 1816, 1922, 1954) 1955
Beta-55871	Feature 62-2 HB	modern	60+/-80	1 sigma BP 261 (0) 0 AD 1689 (1955) 1955
				2 sigma BP 284 (0) 0 AD 1666 (1955) 1955

Appendix, continued.

Sample number	Provenience & material	Raw 14C Age	C13-corrected 14C age	Calibrated age range B.P. and calendar date, with intercepts in () at 1 and 2 sigma.
Beta-53674	Dog burial (assay on dog bone)	modern	50+/-80	1 sigma BP 255 (0) 0 AD 1695 (1955) 1955
				2 sigma BP 281 (0) 0 AD 1669 (1955) 1955
Beta-55864	Feature 65-A C	60+/-50	30+/-50	1 sigma BP 0 (0) 0 AD 1955 (1955) 1955
				2 sigma BP 256 (0) 0 AD 1694 (1955) 1955
Beta-55874	Feature 63 post mold, wood	modern	modern	cannot be calibrated
Beta-55868	Geologic shell hash West canal cut	4640+/-80	5050+/-60	1 sigma BP 5900 (5854, 5829, 5753) 5727 BC 3950 (3905, 3880, 3804) 3777
				2 sigma BP 5932 (5854, 5829, 5753) 5651 BC 3974 (3905, 3880, 3804) 3701
Beta-55869	Geologic shell hash West canal cut	4260+/-80	4650+/-80	1 sigma BP 5560 (5440, 5432, 5321) 5296 BC 3610 (3491, 3483, 3372) 3346
				2 sigma BP 5584 (5440, 5432, 5321) 5053 BC 3634 (3491, 3483, 3372) 3103