THE BIFURCATE TRADITION IN THE SOUTH ATLANTIC REGION

DAVID G. ANDERSON
INTERAGENCY ARCHEOLOGICAL SERVICES DIVISION
NATIONAL PARK SERVICE

ABSTRACT

Bifurcate projectile points are well-represented in the Piedmont and Blue Ridge provinces in the South Atlantic region, where they have been recovered in good excavation context at sites such as Rose Island and Icehouse Bottom in Tennessee and Haw River and Baucom in North Carolina. In the Coastal Plain of South Carolina and Georgia, in contrast, bifurcate projectile points are rare, suggesting either this part of the region was unoccupied, or that other projectile point forms, such as Kirk variants, may have been in use. The irregular distribution of bifurcate points, predominantly in the interior portions of the South Atlantic region, may reflect a response to the onset of the mid-Holocene warm interval and the emergence and expansion of pine forests throughout the Coastal Plain.

INTRODUCTION

In this paper I shall briefly review available evidence for the presence of bifurcate occupations in the South Atlantic area, encompassing North Carolina, South Carolina, Georgia, Florida, and eastern Tennessee. It is appropriate that a collection of papers on the bifurcate tradition in the Middle Atlantic region include a discussion about these materials in the South Atlantic area, since much of the primary research used to date and interpret bifurcate occupations throughout the Eastern Woodlands is derived from research accomplished in this general region.

Although bifurcates had been recognized in surface collections from the Southeast since the 1950s, when the LeCroy Bifurcated Stem type was identified in the Tennessee area by Madeline Kneberg (1956:27-28), little was actually known about bifurcate assemblages in the region until the mid-1970s. Few bifurcates had been found or reported in the early rockshelter excavations at sites like Stanfield-Worley or Russell Cave in Alabama, or from the stratified floodplain or upland sites such as Hardaway and Doerschuk in North Carolina (Figure 1) (Coe 1964:122; DeJarnette *et al.* 1962:99; Griffin 1974:38). Although a LeCroy-like bifurcate form was found with Eva points at the Eva site in the 1950s and was dated to 5200 B.C. (Lewis and Kneberg 1961), the dating of bifurcates remained uncertain until the mid-1960s and was the subject of much speculation, with both Archaic and Woodland ages for the forms advanced (Fitting 1964). With the publication of Broyles' (1966, 1971) work at the deeply stratified St. Albans site near Charleston, West Virginia, however, an Early Archaic temporal placement for bifurcates, in the seventh millennium B.C., was securely established. Three new bifurcate types were advanced by Broyles (1966: 23-28), the MacCorkle Stemmed, the St. Albans Side Notched, and Kanawha Stemmed. The MacCorkle Stemmed type appears, in retrospect, to be a larger, contemporaneous variant of the St. Albans type. Based on the work by Broyles and later

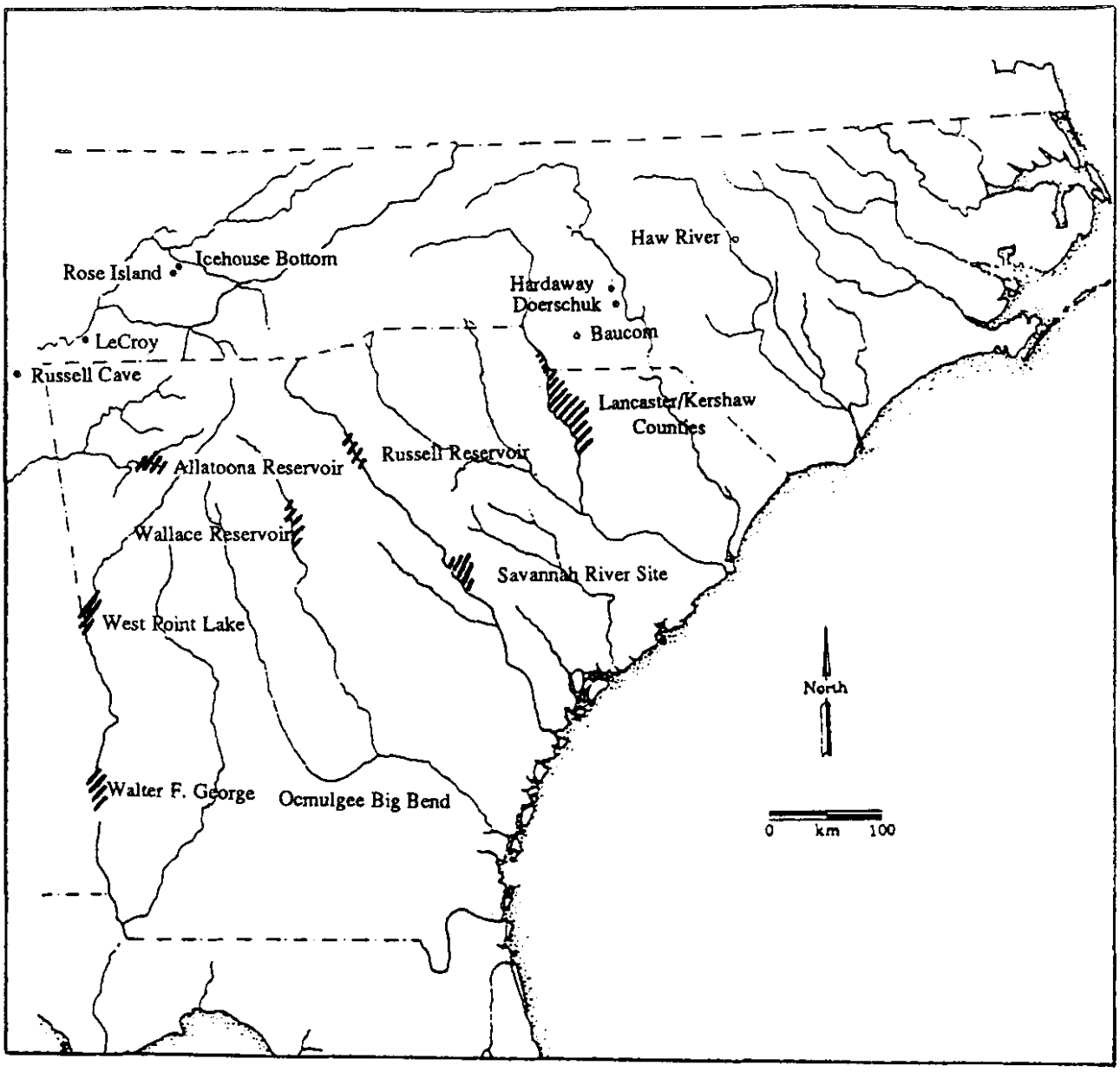

Figure 1. Bifurcate tradition sites and localities in the South Atlantic region.

researchers, a morphological succession in bifurcate forms is thought to occur, from the early side and corner notched MacCorkle and St. Albans types, to the predominantly straight stemmed LeCroy type, to the weakly notched Kanawha type (Chapman 1985:148).

Since the 1960s, a marked increase in information about the Early Archaic in the Southeast has occurred, the vast majority of it collected during CRM projects. Bifurcate materials have been found in good stratified contexts and from large excavation blocks at sites such as Rose Island, Icehouse Bottom, and other sites in eastern Tennessee, and at the Haw River site in Piedmont North

Carolina (Chapman 1973, 1975, 1985; Claggett and Cable 1982). In addition to these large scale, well-reported excavations, more limited testing or surface collection activity has occurred at tens of thousands of locations across the region. As a result, thousands of Early Archaic sites are now known from the lower Southeast. The vastly increased fieldwork, and the rise of strong amateur archaeological societies in many southern states, furthermore, has led to even more information about early assemblages in the region. Unfortunately, much of this new data remains to be systematically examined and synthesized. Chapman's (1975) doctoral dissertation on the 1973 and 1974 excavations at Rose Island, which includes a synthesis of the bifurcate tradition in the Eastern Woodlands using data collected largely before the modern CRM research boom, remains the best region-wide summary for this time period.

DATING THE BIFURCATE TRADITION

In the lower southeast, Early Archaic components are recognized almost exclusively by the presence of diagnostic side and corner-notched and bifurcate-based projectile points. These hafted biface forms and their inferred period of occurrence, from earliest to latest, include the Dalton and Hardaway-Dalton types, dating from approximately 8500 - 7900 B.C.; the Taylor-Big Sandy-Bolen side-notched types, dating from about 8200 - 7500 B.C.; the Palmer and Kirk corner-notched types, dating from about 7500 - 6800 B.C.; and, the subject of present concern, a series of bifurcate forms, including the MacCorkle, St. Albans, LeCroy, and Kanawah types, dating from approximately 6900 - 5800 B.C. The end of the Early Archaic in the region, which occurred around 6000 B.C., was characterized by the replacement of these notched and bifurcate forms by square and contracting stemmed Stanly, Kirk Stemmed, and Morrow Mountain types (Anderson 1990; Chapman 1976, 1985:146; Coe 1964; Dunbar *et al.* 1988; Goodyear 1982).

The best evidence for both the temporal placement and the composition of terminal Early Archaic bifurcate assemblages in the Eastern Woodlands unquestionably comes from the lower Little Tennessee River Valley, where well-defined, stratified, and separable St. Albans, LeCroy, and Kanawha horizons were examined by Chapman and his colleagues at sites such as Icehouse Bottom, Bacon Farm, Rose Island, Patrick, and Calloway Island in the 1970s (Chapman 1973, 1975, 1978, 1985). It cannot be too strongly stated that the reports on these sites make absolutely essential reading for any serious student of the bifurcate tradition in the Eastern Woodlands. The multiple radiocarbon determinations and stratigraphic relationships obtained from these sites, in conjunction with the lesser numbers of dates available from other sites in the region, such as at St. Albans, Haw River, and Baucom, form the basis for the dating of specific bifurcate forms throughout the Eastern Woodlands. In addition, the areally extensive excavations provide valuable data on the composition of occupation floors and tool assemblages, giving an unparalleled view of floodplain site structure during this period. Kimball's (1981) analysis of the St. Albans and LeCroy occupations at Rose Island, where the existence of residential structures and the performance of a wide range of activities have been inferred, stands as the most comprehensive intrasite analysis performed to date with bifurcate horizon assemblages.

Chapman (1985:146) subdivided the bifurcate tradition in the Little Tennessee River Valley into three phases, corresponding to the occurrence of the St. Albans, LeCroy, and Kanawha point forms. Morphological gradation between the side-notched Kirk and St. Albans types was noted, indicating probable continuity in the occupations. Chapman dated the St. Albans phase between 6900 and 6500

B.C. and the LeCroy phase between 6500 and 5800 B.C. The Kanawha phase overlapped with LeCroy and was dated between 6100 and 5800 B.C. About the same time, from ca. 6000 - 5800 B.C., serrated and stemmed forms were being made. These had unfortunately been previously named the Kirk Stemmed and Kirk Serrated types (Coe 1964:70), terminology that has since caused considerable confusion, since these forms date to almost 1000 years after what is currently held to be the latest date for Kirk Corner Notched points, at ca. 6800 B.C. After ca. 5800 B.C. the square stemmed, weakly notched Stanly type appeared, which was in turn replaced around 5500 B.C. by contracting stem Morrow Mountain forms.

In the Little Tennessee River sequence true bifurcates occur from ca. 6900 - 5800 B.C. Bifurcate forms appear to have been derived from corner-notched Kirk forms, and then developed into or were replaced by a range of stemmed forms, of which Stanly and Morrow Mountain are perhaps the best known and most widespread. The specific temporal ranges for individual bifurcate types advanced by Chapman should not be accepted uncritically, however, particularly in areas as far removed from the Little Tennessee as the mid-Atlantic region. As with any archaeological sequence, refinement and revision will occur as more information is collected. Since the work in the Little Tennessee River, additional dates from the South Atlantic supporting this bifurcate chronology have been obtained from the Haw River and Baucom sites in the North Carolina Piedmont (Claggett and Cable 1982:Appendix 4; Albert C. Goodyear: personal communication 1990).

GENERAL OBSERVATIONS ABOUT SETTLEMENT DURING THE TERMINAL EARLY ARCHAIC

In its most common and traditional expression, the Early to Middle Archaic transition is viewed as the time when the generalized or diffuse "Archaic" hunting and gathering way of life, which had replaced the more focal Paleo-Indian-initial Early Archaic adaptation, became firmly established. Beyond obvious changes in projectile point morphology, pronounced changes in toolkit composition are also evident over the course of the Early Archaic. A general trend over time toward expedient technologies and foraging adaptive strategies occurred during this period, at least in the South Atlantic region (Blanton and Sassaman 1989). Assemblages dominated by formal, curated tools such as gravers or hafted end- or sidescrapers were replaced by assemblages dominated by expedient, situational tools, with utilized flakes much more prevalent. This pattern has been most clearly demonstrated at the Haw River sites in North Carolina by Claggett and Cable (1982:773-777).

Small, exogamous, probably patrilineal and patrilocal egalitarian bands moving over large areas are inferred to have been present during the Early Archaic, with territorial ranges becoming increasingly restricted over time as populations grew and the landscape filled. Periodic aggregation for ceremonial purposes and information sharing at specific times of the year may have occurred also. Geographically wide-ranging adaptations during the initial Early Archaic are inferred from the presence of appreciable quantities of extralocal lithic raw materials within assemblages, with materials sometimes occurring at distances of up to 300km from their source areas (Anderson and Hanson 1988:280-281; Sassaman *et al.* 1988:85-87). The high incidence of extralocal raw materials is what might be expected if low numbers of people were moving rapidly over the landscape, particularly in the absence of any evidence of production for exchange.

The increasing use of locally available lithic raw materials that characterizes later Early Archaic bifurcate assemblages in the lower Southeast, in contrast, suggest continuing territorial circumscription and reduction in group

mobility. By the terminal Early Archaic, when bifurcates were in use, most group activities, except for possibly seasonal or annual aggregation events, may have occurred within fairly small areas, possibly within portions of individual drainages or within specific physiographic provinces. By the start of the ensuing Middle Archaic period in the South Atlantic area, assemblages throughout the region were made almost exclusively on locally-occurring lithic raw materials, which suggests year-round occupation within small territories. Change appears to have been most pronounced during the terminal Early Archaic, when the replacement of extralocal with local raw materials was most pronounced.

On a larger, regional scale, Chapman (1975:265-268) observed that the distribution of bifurcate points was associated with that of the Eastern deciduous forests. Bifurcates occurred throughout much of the Eastern Woodlands, from the Mississippi River to the Atlantic Coast and from the Great Lakes south to the vicinity of the Fall Line along the Gulf and lower Atlantic slopes. Chapman's survey indicated bifurcates were decidedly uncommon, however, in Florida and throughout the Gulf and lower Atlantic Coastal Plains, a finding supported by subsequent research. An adaptation by the makers of bifurcate projectile points in the lower Southeast to the interior deciduous forests, with a general avoidance of the Coastal Plain, can be inferred from Chapman's discussion. At the level of settlement patterning, Chapman (1975:269-273) argued that bifurcate-using populations made use of floodplain base camps, of which Rose Island is a prime example, as well as a range of smaller upland special activity sites.

EVIDENCE FOR POPULATION CHANGE

Evidence for population distribution and change may be inferred from projectile point distributions, although caution is warranted when interpreting the evidence. In most parts of the South Atlantic, the incidence of diagnostic projectile points shows a regular pattern of increase from the Early PaleoIndian through the initial Early Archaic periods. The data thus suggest a major increase in regional population, or at least in the use of projectile points, over this interval. A major decrease in projectile point incidence is evident during the terminal Early Archaic period in many areas, however, suggesting a major decline or relocation of population may have occurred (assuming alternative, perishable technologies were not in use, such as shell or bone points). This is readily apparent when the incidence of bifurcates is compared with earlier and later point types in localities across the region (Figure 2). As documented below, bifurcates are fairly common in the Piedmont of North Carolina and northeastern South Carolina, but are decidedly uncommon in the Piedmont of western South Carolina and eastern Georgia, and are virtually nonexistent in Florida and in the Georgia and western South Carolina Coastal Plain. Bifurcate points are so infrequent in some parts of the lower Southeast, in fact, that their utility as a diagnostic indicator of terminal Early Archaic occupations has been called into question in these areas (Anderson and Joseph 1988:131).

The primary explanation for the uneven distribution of bifurcates across the region advanced to date has been that the makers of these points were adapted to the presumably well-watered deciduous forests of the interior, and deliberately avoided the more xeric environment of the lower Southeastern Coastal Plain. Why this was the case is puzzling, since large numbers of (presumably) earlier Kirk Corner Notched projectile points have been noted across the same region (e.g., Anderson *et al.* 1979:91; Charles 1986; Sassaman *et al.* 1989:169, 259). The period when bifurcates were in use was, however, a time of climatic change that may have affected regional resource structure and carrying

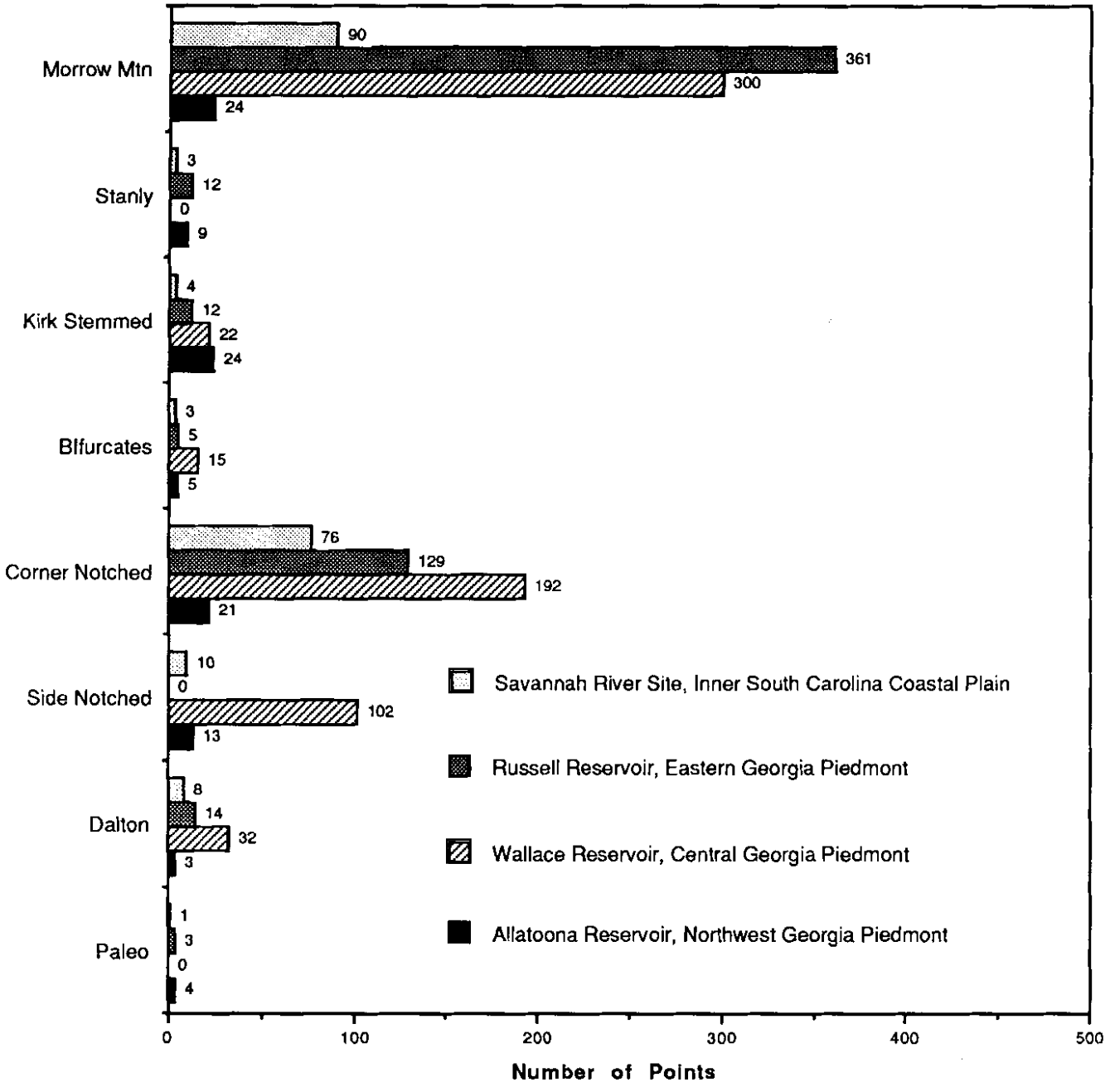

Figure 2. The incidence of terminal Early Archaic bifurcate projectile points, in relation to earlier and later forms, at four localities in Georgia and South Carolina. (Sources: Anderson and Joseph 1988:25; Ledbetter *et al.* 1987:251; O'Steen 1983:114; Sassaman *et al.* 1989:169).

capacity, something that in turn undoubtedly shaped prehistoric settlement. The Hypsithermal climatic interval, the warmest portion of the Holocene to date,began about this time and witnessed the spread of southern pine communities

through the sandy interriverine uplands of the Southeastern Coastal Plain, an area that previously appears to have supported a higher incidence of mast-producing hardwoods (Davis 1983:172-173; Delcourt and Delcourt 1985, 1987; Knox 1983:33; Larsen 1982). The hardwood canopy continued in place in the Piedmont and Blue Ridge physiographic provinces, however. As the interriverine portion of the Southeastern Coastal Plain became increasingly less attractive for settlement, due to a reduction in game animal (i.e., white-tailed deer) carrying capacity, prehistoric populations likely would have relocated along the larger drainages (where extensive hardwood riverine swamps were beginning to emerge) or further into the interior. The restricted distribution of bifurcates suggests that the latter occurred.

It is possible, alternatively, that point forms traditionally placed earlier or later in time were used in those parts of the lower Southeast where bifurcates were rare or absent. That is, these areas may have been inhabited at about the same levels as before, but by people using assemblages currently misdated by archaeologists. A continuation of the Kirk Corner Notched type to perhaps ca. 6000 B.C., for example, may have occurred in some areas. It is also possible that point forms presumed to be later, such as the Kirk Serrated, Kirk Stemmed, and Stanly Stemmed types may have been in use at an earlier date (i.e., before 6000 B.C.) in some areas. An extensive and well-controlled program of absolute dating, however, will be needed to support such inferences. If found to be correct, then the occasional bifurcate found in the Coastal Plain in the South Atlantic area may, accordingly, represent sporadic or low-level interaction or visitation from populations based farther into the interior. A less likely explanation for the low incidence of bifurcates in the lower Southeastern Coastal Plain may be that sites with these points simply have not been discovered, perhaps because they were restricted to floodplain environments and have since been either deeply buried or scoured away. Given the extensive CRM-mandated archaeological investigation that has occurred in the region over the past 20 years, such sites probably would have been found had they been present.

EXAMINING THE DISTRIBUTION OF BIFURCATES IN THE SOUTH ATLANTIC REGION

Most of what we currently know about terminal Early Archaic lifeways in the South Atlantic area comes from survey data. Evidence for residential base camps has been found from the floodplain work in the Little Tennessee and Haw River areas (Claggett and Cable 1982; Kimball 1981). No other extensive excavation assemblages have been documented, however, nor has evidence been found for elaborate toolkits, planned communities, cemeteries or other formal burial practices, or long distance exchange.

Proceeding state by state over the region, bifurcates are almost nonexistent in the state of Florida (Milanich and Fairbanks 1980:51) and are rare across southern and central Georgia (Cantley *et al.* 1990; Knight and Mistovitch 1984:213-214; Snow 1977:7). They occur in greatest incidence in the mountainous northwestern part of Georgia into eastern Tennessee. In north- central Georgia bifurcates have been reported in low incidence in the Allatoona Reservoir in the western Piedmont (Ledbetter *et al.* 1987:251), in the Wallace Reservoir in the central Piedmont (O'Steen 1983:114), and in the Russell Reservoir in the eastern Piedmont (Anderson and Joseph 1988:25). In each case the total number of bifurcates was only about one-tenth the number of diagnostics from the immediately preceding and following periods (Figure 2). Thus, while bifurcates occur across northern Georgia, they are decidedly uncommon.

In South Carolina the only study conducted to date specifically directed to

bifurcates is that by Steen (1985), who examined bifurcates in private collections from Lancaster and Kershaw counties in the northeastern Piedmont. Seventy-nine points from 31 sites formed the sample. Two distinct forms were identified, one identical to the LeCroy type as originally defined by Kneberg, and the other a lobed, expanding-stemmed variant that did not readily conform to existing bifurcate types in the literature. Serrations were present on just over half the points of each variant, and the blades and shoulders of many points were reduced or broken from resharpening. Use as knives is clearly indicated, continuing the pattern of usage observed on earlier Palmer and Kirk forms from the area. Almost all of the bifurcate points in the sample were made of locally available raw materials (defined as materials originating in the physiographic province in which they are found), although a small percentage -- under five percent -- were of extralocal materials that came from appreciable distances, suggesting some long distance interaction was occurring. Steen's analysis is particularly significant in that detailed attribute data are presented for the 79 points, making it useful for comparative purposes.

In a recent state-wide survey of private collections, bifurcates were found to be quite rare in South Carolina, with only 205 identified in a sample of 85,012 points (Charles 1981, 1983, 1986, n.d.). Preceding Early Archaic Palmer and Kirk, and succeeding Middle Archaic Morrow Mountain forms, in contrast, were over 20 times more common. This pattern, duplicated in formal survey collections from across South Carolina, supports the inference that something dramatic happened at this time. Most of the bifurcates in the sample were made of locally available stone, with metavolcanics the most frequently selected raw material (Table 1).

TABLE 1. INCIDENCE OF BIFURCATE AND STANLY POINTS BY RAW MATERIAL IN NORTH AND SOUTH CAROLINA. (Sources: Charles n.d., Davis and Daniel 1990).

Bifurcates

	Meta	Qtz	Chert	OQ	R&V	CPC	Unid	Total
North Carolina	48	1	1	0	0	0	2	52
South Carolina	160	9	1	0	23	11	1	205

Stanlys

	Meta	Qtz	Chert	OQ	R&V	CPC	Unid	Total
North Carolina	160	15	0	6	0	0	43	224
South Carolina	321	15	10	7	0	6	12	371

Meta: Metavolcanics Qtz: Quartz Chert: Unspecified chert
OQ: Orthoquartzite R&V: Ridge and Valley Chert CPC: Coastal Plain chert
Unid: Unidentified

The temporally subsequent and morphologically similar Stanly Stemmed was only slightly more prevalent, with 371 identified in the statewide sample. Their common occurrence on locally available materials was similar to that observed for the bifurcates, suggesting continuity in manufacture and perhaps in use. The preference for local materials suggests the possibility of permanent occupation, although the low overall incidence of diagnostics argues against high population

densities.

Bifurcates are also fairly uncommon in North Carolina, and in a statewide synthesis prepared in the early 1980s were reported as common only in the western, mountainous part of the state (Purrington 1983:120). Both local and extralocal lithic raw materials were commonly employed, which Purrington attributed to the activities of resident and nonlocal populations living in, and briefly visiting the area, respectively. The same synthesis indicated that Stanly points are rare in the mountainous part of the state, but are apparently more prevalent elsewhere, in the Piedmont and Coastal Plain (Phelps 1983:23; Ward 1983:66; see also Coe 1964:34,35,122, Oliver 1985:202). A recent analysis of projectile points in collections at the University of North Carolina, Chapel Hill's Research Laboratories of Anthropology, described below, tends to generally support these observations (Davis and Daniel 1990).

Bifurcate assemblages have been found in excavation contexts in North Carolina at the Haw River and Baucom sites. At Baucom, best known for its extensive Hardaway Dalton assemblage (Peck and Painter 1982), geoarchaeological research directed by Albert C. Goodyear (personal communication 1990) has recently documented the presence of a bifurcate horizon. At the Haw River sites in the north-central Piedmont, Claggett and Cable (1982) found bifurcate horizons in sealed floodplain deposits. Few curated tools were found with the assemblages, which they interpreted as indicating that the residentially mobile foraging adaptations inferred for the later Middle Archaic were emerging, or had emerged, by this time. With its detailed descriptive data and strong paleoenvironmental and theoretical stance, the three volume report on the work at Haw River is arguably the best single site report produced to date describing bifurcate occupations in the Eastern Woodlands. Like the work in the Little Tennessee River Valley, it too should be considered required reading by researchers seeking to understand this period.

Using the statewide collections analysis data compiled by Charles (1986, n.d.) and Davis and Daniel (1990), the distribution of bifurcate and Stanly projectile points in North and South Carolina was examined (Figures 3,4, Table 1). The South Carolina dataset consists of 85,012 points from 43 of the state's 46 counties, encompassing most of the state, while the North Carolina dataset encompasses 22,244 points from 50 of the state's 100 counties, mostly from the central and western part of the state. Because the South Carolina sample is appreciably larger, and because differing total numbers of points were recorded in each county, the occurrence of bifurcates and Stanlys was examined as a percentage of the total number of projectile points recorded in each county, and not their actual incidence. The use of percentage values, that is, comparing the number of bifurcates or Stanlys in a county to the total number of points collected in that county, is thus an attempt to standardize the data. Minimally, it provides a measure of how common these point types are compared with other forms.

Bifurcate points are restricted largely to within the Piedmont physiographic province in the statewide sample from North and South Carolina (Figure 3). The densest concentrations occur near the border between the two states, along the PeeDee/Yadkin and Wateree/Catawba Rivers. A lesser concentration of bifurcates is evident in the line of counties along the Saluda River in the western Piedmont of South Carolina and may extend into the mountains of western North Carolina. The map dramatically illustrates the absence or low incidence of bifurcates in the Coastal Plain, particularly in central and southwestern South Carolina. The low incidence of bifurcates in western North Carolina is surprising, however, given Purrington's (1983) earlier observations. The county-level projectile point samples available from this area are small, though, and may not be representative.

The concentration of bifurcates in northeastern South Carolina and south-central North Carolina appears to be somewhat isolated. It is largely surrounded by counties with far fewer or no bifurcates (although the pattern is blurred by the large number of North Carolina counties with no data). If this distribution

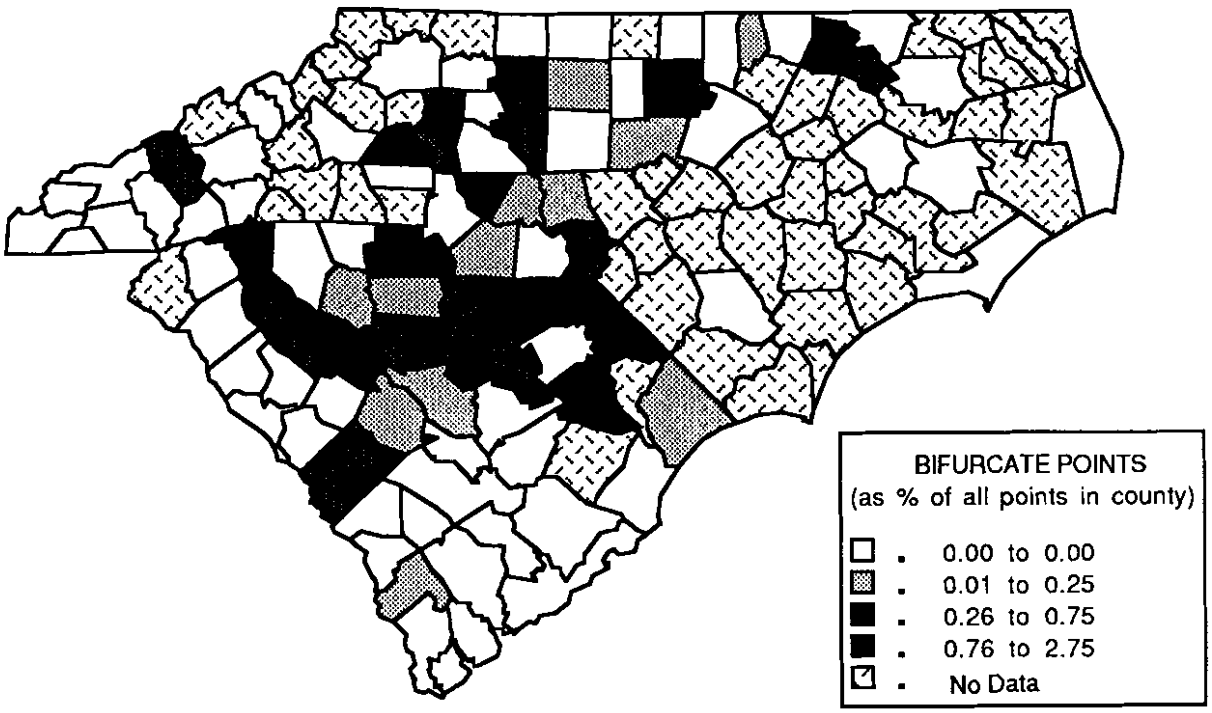

Figure 3. The distribution of bifurcate points in North and South Carolina. (Sources: Charles 1986, n.d., Davis and Daniel 1990).

continues to hold as larger samples are obtained, particularly from those parts of North Carolina that are currently unexamined, it is suggested that the concentration may delimit the core settlement areas and extent of mobility of a prehistoric (i.e., terminal Early Archaic) population/cultural entity. Analyzing projectile point fall-off curves (if present) could also indicate areas habitually and infrequently utilized. The existence of a macroband-like social entity composed of several discrete bands may be indicated (*sensu* Anderson and Hanson 1988). Alternatively, the area may have been occupied by a number of band-sized groups each occupying a fairly small territory and characterized by fairly fluid membership, as has been postulated for the ensuing Middle Archaic period (Sassaman 1983, 1985). The terminal Early Archaic is a time of technological change, as the earlier curated toolkits were replaced by more expedient assemblages; it also may have been a time of major social change. As group mobility declined (something suggested by the increased use of local raw materials), the mechanisms binding groups together likewise also could have changed.

The distribution of Stanly Stemmed points in the Carolinas is roughly similar to the bifurcate distribution, with a major concentration in the central

and northern Piedmont and comparatively fewer points in the Coastal Plain and western Piedmont (Figure 4). Stanly points do occur over a larger area, however, with moderate concentrations observed in the central and northern South Carolina Coastal Plain and in the mountains of western North Carolina. The fact that the two point types occur with greatest incidence in approximately the same area suggests some kind of cultural continuity. This inference is supported by the similarity in morphology (i.e., notched and weakly notched stems) between the forms, and a continued selection for locally available, predominantly metavolcanic lithic raw materials (Table 1). If cultural continuity is indicated, the increased incidence of Stanlys, and their occurrence over a much larger area, may reflect the growth and expansion of a formerly more circumscribed group. Minimally, it suggests that the factors that predisposed bifurcate manufacturers to largely avoid the lower Coastal Plain were no longer operating, or not operating as strongly, at least in the South Carolina area. While there is some evidence to suggest that the makers of these point forms were still occupying a fairly discrete region, as evidenced by the number of counties with no Stanlys present to the east, south, and southwest of the primary concentration, this area appears appreciably larger than that occupied by the bifurcate users and also appears to extend both to the west, into Tennessee, and to the north into Virginia.

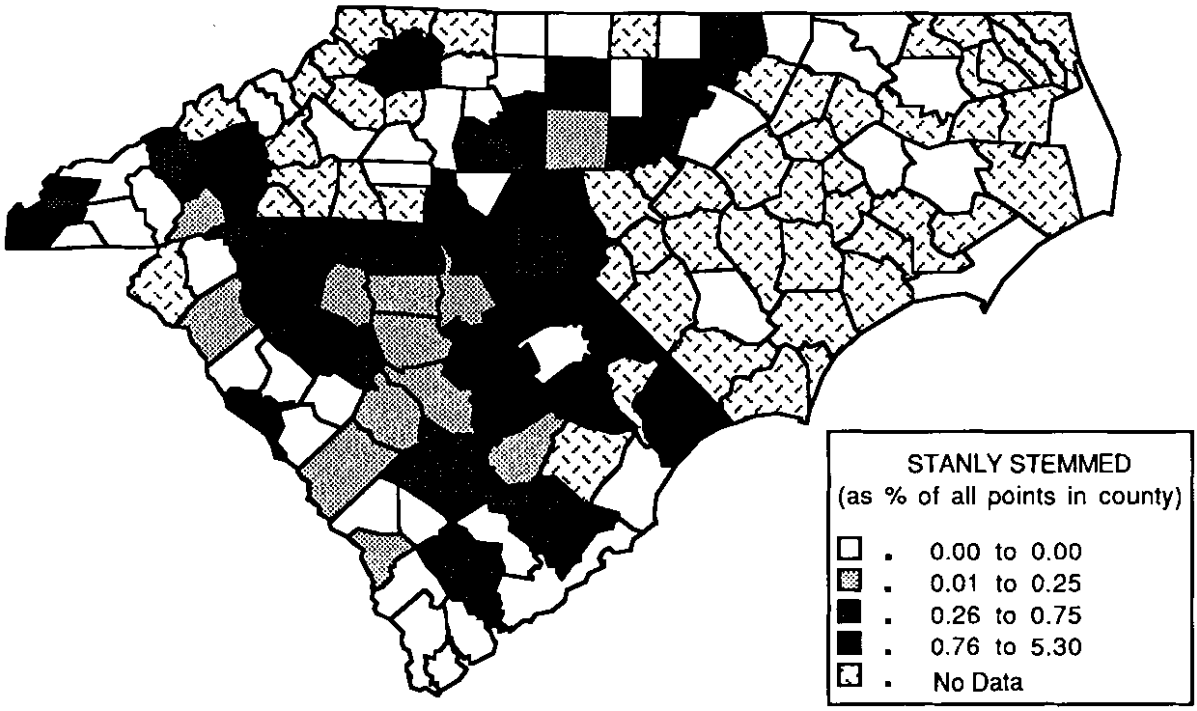

Figure 4. The distribution of Stanly Stemmed Points in North and South Carolina. (Sources: Charles n.d., Davis and Daniel 1990).

While these results are admittedly coarse-grained, given the large sample employed, they probably fairly accurately depict the distribution of these point forms, particularly within South Carolina. Unfortunately, comparable datasets are not available from other states in the South Atlantic region, and observations about projectile point distributions in these areas are more impressionistic. As the study of projectile point collections increases, so too will our understanding of point type distributions and of prehistoric settlement systems.

CONCLUSIONS

So why are bifurcate points restricted to the interior portions of the South Atlantic region, a pattern Chapman originally observed 15 years ago, and that appears to hold up in the light of subsequent research? As others have done before, I would speculate that climatic conditions played a major role in shaping the observed distributions. The bifurcate tradition comes at the end of the Early Archaic period, coeval with the onset of the Hypsithermal episode, at about 6000 B.C. or slightly earlier. The expansion of pine forests may have made the lower Atlantic and Gulf Coastal Plains more inhospitable than previously, and hence possibly areas largely to be avoided. Claggett and Cable (1982:776-777) have suggested that the extensive toolkit variability observed in the bifurcate horizons at the Haw River sites was a direct response to the onset of this period of environmental stress. Given the restricted regional distribution of bifurcate forms, primarily in the continental interior, and particularly in the Appalachian Mountain region (Chapman 1975:252; Justice 1987:86-92), the bifurcates that do occur elsewhere in the South Atlantic region (i.e., in the Coastal Plain) are inferred to reflect limited visits, perhaps as part of unusually extended foraging activities, by members of groups living farther into the interior, in the Piedmont and mountainous portions of the region.

ACKNOWLEDGEMENTS

The author would like to thank the following people for the advice and assistance that they provided in the preparation of this paper: Jefferson Chapman, Tommy Charles, Stephen R. Claggett, I. Randolph Daniel, Jr., R. P. Stephen Davis, Albert C. Goodyear, III, Virginia Horak, R. Jerald Ledbetter, Mark A. Mathis, Roger W. Moeller, Kenneth E. Sassaman, and R. Michael Stewart. Unpublished primary data used to generate Table 1 and Figures 3 and 4 (Charles n.d.) is maintained at the South Carolina Institute of Archaeology and Anthropology and is also available on request from the author.

REFERENCES CITED

Anderson, David G.
1990 The Paleoindian colonization of Eastern North America: A view from the Southeastern United States. In *Early Paleoindian Economies of Eastern North America*, edited by Kenneth B. Tankersley and Barry L. Isaac, pp. 163-216. JAI Press, Greenwich, CT.

Anderson, David G., and Glen T. Hanson
1988 Early Archaic settlement in the Southeastern United States: A case study from the Savannah River Valley. *American Antiquity* 53:262-286.

Anderson, David G. and J. W. Joseph
1988 *Prehistory and History Along the Upper Savannah River: Technical Synthesis of Cultural Resource Investigations, Richard B. Russell Multiple Resource Area.* Interagency Archaeological Services Division, National Park Service, Russell Papers. Atlanta, Georgia.

Anderson, David G., Sammy T. Lee, and A. Robert Parler
1979 *Cal Smoak: Archaeological Investigations along the Edisto River in the Coastal Plain of South Carolina.* Archeological Society of South Carolina, Occasional Papers 1.

Blanton, Dennis B. and Kenneth E. Sassaman
1989 Pattern and process in the Middle Archaic period of South Carolina. In *Studies in South Carolina Archaeology: Essays in Honor of Robert L. Stephenson*, edited by Albert C. Goodyear, III and Glen T. Hanson, pp. 53-72. Anthropological Studies 9. Occasional Papers of the South Carolina Institute for Anthropology and Archaeology, The University of South Carolina, Columbia.

Broyles, B. J.
1966 Preliminary report: The St. Albans site, Kanawha County, West Virginia. *The West Virginia Archaeologist* 19.
1971 *Second Preliminary Report: The St. Albans Site, Kanawha Valley, West Virginia.* West Virginia Geological and Economic Survey, Report of Archeological Investigations 3.

Cantley, Charles E., J. W. Joseph, Marvin T. Smith, Leslie Raymer, Mary Beth Reed, and Thomas R. Wheaton, Jr.
1990 *Prehistory of the Middle Chattahoochee River Valley: Findings of the 1989-1990 West Point Lake Archeological Survey and Site Testing Project.* Final Report, Contract DACW01-89-C-0053, U.S. Army Engineer District, Mobile, Alabama. New South Associates Inc. Technical Report 32.

Chapman, Jefferson
1973 *The Icehouse Bottom Site (40MR23).* Department of Anthropology, University of Tennessee, Reports of Investigations 13.
1975 *The Rose Island Site and the Bifurcate Point Tradition.* Department of Anthropology, University of Tennessee, Reports of Investigations 14.
1976 The Archaic period in the Lower Little Tennessee River Valley: The radiocarbon dates. *Tennessee Anthropologist* 1:1-12.
1978 *The Bacon Farm Site and a Buried Site Reconnaissance.* University of Tennessee, Department of Anthropology, Report of Investigations 23.
1985 Archaeology and the Archaic period in the Southern Ridge-and-Valley Province. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 137-153. University of Alabama Press, University, Alabama.

Charles, Tommy
1981 Dwindling resources: An overture to the future of South Carolina's Archaeological Resources. Institute of Archaeology and Anthropology, University of South Carolina, *The Notebook* 13:1-85.
1983 Thoughts and records from the survey of private collections of prehistoric artifacts throughout South Carolina: A second report. Institute of Archaeology and Anthropology, University of South Carolina, *The Notebook* 15:1-37.
1986 The fifth phase of the collectors survey. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, *The Notebook* 18:1-27.

n.d. Collectors survey analysis sheets. Unpublished primary data on file at the South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia.

Claggett, Stephen R. and John S. Cable (assemblers)
1982 *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont.* Commonwealth Associates, Inc., Report No. 2386.

Coe, Joffre L.
1964 *The Formative Cultures of the Carolina Piedmont.* Transactions of the American Philosophical Society, new series, 54(5).

Davis, Margaret B.
1983 Holocene vegetational history of the Eastern United States. In *Late Quaternary Environments of the United States, Part 2. The Holocene*, edited by H. E. Wright, Jr., pp. 166-181. University of Minnesota Press, Minneapolis.

Davis, R. P. Stephen, Jr., and I. Randolph Daniel, Jr.
1990 Projectile point classification project: The classification of projectile points in existing archaeological collections from North Carolina. Research Laboratories of Anthropology, University of North Carolina, Chapel Hill.

DeJarnette, David L., E. Kurjack, and J. Cambron
1962 Stanfield-Worley Bluff Shelter Excavations. *Journal of Alabama Archaeology* 8.

Delcourt, Hazel R. and Paul A. Delcourt
1985 Quaternary palynology and vegetational history of the Southeastern United States. In *Pollen Records of Late-Quaternary North American Sediments*, edited by V. M. Bryant and R. G. Holloway, pp. 1-37. American Association of Stratigraphic Palynologists Foundation.
1987 *Long Term Forest Dynamics of the Temperate Zone: A Case Study of Late-Quaternary Forests in Eastern North America.* Springer-Verlag, New York.

Dunbar, James, Michael K. Faught, and S. David Webb
1988 Page/Ladson (8Je591): An underwater Paleo-Indian site in northwestern Florida. *The Florida Anthropologist* 41:442-452.

Fitting, James E.
1964 Bifurcate Stemmed Projectile Points in the Eastern United States. *American Antiquity* 30(1):92-94.

Goodyear, Albert C. III
1982 The chronological position of the Dalton horizon in the Southeastern United States. *American Antiquity* 47:382-395.

Griffin, John W.
1974 *Investigations in Russell Cave.* National Park Service Publications in Archaeology 13.

Justice, Noel D.
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States.* Indiana University Press, Bloomington.

Kimball, Larry R.
1981 *An Analysis of Residential Camp Structure for Two Early Archaic Assemblages from Rose Island, Tennessee.* Unpublished M.A. thesis, Department of Anthropology, University of Tennessee, Knoxville.

Kneberg, Madeline
1956 Some important projectile point types found in the Tennessee area. *Tennessee Archaeologist* 12(1):17-28.

Knight, Vernon James, and Tim S. Mistovich
1984 *Walter F. George Lake Archaeological Survey of Fee-Owned Lands Alabama and Georgia.* Office of Archaeological Research, University of Alabama, Report of Investigations 42.

Knox, J. C.
1983 Responses of river systems to Holocene climates. In *Late Quaternary Environments of the United States, Part 2, The Holocene*, edited by H. E. Wright, pp. 26-41. University of Minnesota, Minneapolis.

Larsen, Curtis E.
1982 Geo-archaeology of the Haw River. In *The Haw River Sites: Archaeological Investigations at Two Stratified Sites in the North Carolina Piedmont*, assembled by Stephen R. Claggett and John S. Cable, pp. 145-222. Commonwealth Associates, Inc. Report No. 2386.

Ledbetter, R. Jerald, W. Dean Wood, Karen G. Wood, Robbie F. Ethridge, and Chad O. Braley
1987 *Cultural Resource Survey of Allatoona Lake Area, Georgia.* Contract DACW01-85-C-0183 Final Report prepared for the Mobile, Alabama, U.S. Army Engineer District. Southeastern Archaeological Services, Inc. Athens.

Lewis, Thomas M. N., and Madeline Kneberg
1961 *Eva, An Archaic Site.* University of Tennessee Press, Knoxville.

Milanich, Jerald T., and Charles H. Fairbanks
1980 *Florida Archaeology.* Academic Press, New York.

Oliver, Billy A.
1985 Tradition and typology: Basic elements of the Carolina projectile point sequence. In *Structure and Process in Southeastern Archaeology*, edited by Roy S. Dickens and H. Trawick Ward, pp. 195-211. University of Alabama Press.

O'Steen, Lisa D.
1983 *Early Archaic Settlement Patterns in the Wallace Reservoir: An Inner Piedmont Perspective.* Unpublished M.A. thesis, Department of Anthropology, The University of Georgia, Athens.

Peck, Rodney M. and Floyd Painter
1984 The Baucom Hardaway site: A stratified deposit in Union County, North Carolina. *The Chesopiean* 22:2-41.

Phelps, David S.
1983 Archaeology of the North Carolina Coast and Coastal Plain: Problems and hypotheses. In *The Prehistory of North Carolina, An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey J. Crow. North Carolina Division of Archives and History, Department of Cultural Resources, Raleigh.

Purrington, Burton L.
1983 Ancient mountaineers: An overview of prehistoric archaeology of North Carolina's western Mountain Region.In *The Prehistory of North Carolina, An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey J. Crow, pp. 83-160. North Carolina Division of Archives and History, Department of Cultural Resources, Raleigh.

Sassaman, Kenneth E.
1983 *Middle and Late Archaic Settlement in the South Carolina Piedmont.* Unpublished M.A. thesis, Department of Anthropology, University of South Carolina, Columbia.
1985 The Middle Archaic period in the Savannah River Valley: Patterns of adaptive flexibility. Paper presented at the 42nd Annual Meeting of the Southeastern Archaeological Conference, Birmingham, Alabama.

Sassaman, Kenneth E., Mark J. Brooks, Glen T. Hanson, and David G. Anderson
1989 *Technical Synthesis of Prehistoric Investigations on the Savannah River Site, Aiken and Barnwell Counties, South Carolina.* Department of Energy Contract DE-AC09-81SR10749 Final Report, Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology.

Sassaman, Kenneth E., Glen T. Hanson, and Tommy Charles
1988 Raw material procurement and the reduction of hunter-gatherer range in the Savannah River Valley. *Southeastern Archaeology* 7:79-94.

Snow, Frankie
1977 An archaeological survey of the Ocmulgee Big Bend Region. South Georgia College, *Occasional Papers from South Georgia* 3, Douglas.

Steen, Andee
1985 A preliminary study of bifurcated stemmed points in Kershaw and Lancaster counties, South Carolina. Institute of Archaeology and Anthropology, University of South Carolina, *The Notebook* 17(3&4):1-18.

Ward, H. Trawick
1983 A review of archaeology in the North Carolina Piedmont: A study of change. In *Prehistory of North Carolina: An Archaeological Symposium*, edited by Mark A. Mathis and Jeffrey A. Crow, pp. 53-81. North Carolina Division of Archives and History, Department of Cultural Resources.