

PREHISTORIC ARCHAEOLOGY IN THE SOUTHEASTERN UNITED STATES, 1970-1985

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The first Europeans who ventured into the forests of southeastern North America found them inhabited by a dense and diverse native population. It is clear from the sixteenth-century Spanish accounts that many of these populations consisted of village farmers who were organized into complex, hierarchical polities of the sort that anthropologists call chiefdoms. The surviving descriptions of these explorations are replete with mentions of powerful leaders who lived in elaborate residences situated on mounds, collected tribute from distant vassals, and were capable of mobilizing large contingents of warriors to deploy against their enemies. Although these polities were not as centralized or vast as those of the Aztecs or Incas, they nevertheless were the most complex societies to be found north of Mexico.

A major preoccupation of southeastern archaeologists over the last half century has been to trace the historical trajectories by which these societies developed. In recent years, there has also been a self-conscious effort to explain these trajectories in material-ecological terms. Although such understanding still remains elusive, the Southeast continues to be viewed by many as an ideal place for studying the development of tribal and chiefly societies in temperate environments.

For present purposes, the southeastern United States is defined as that part of the country east of (and including) the Mississippi Valley and south of the Tennessee-Kentucky line. It includes the states of Florida, Georgia, South Carolina, North Carolina, Tennessee, Alabama, and Mississippi, as well as the eastern portions of Arkansas and Louisiana. Physiographically, the area

can be divided into three major zones: (a) the Appalachian Mountains, which extend along the Tennessee-North Carolina border and south into northern Georgia and eastern Alabama; (b) a wide, hilly plateau bordering the mountains on the east, south, and west, including named physiographic provinces such as the Piedmont Upland, the Appalachian Plateau, and the Interior Low Plateau; and (c) a broad expanse of low-lying Coastal Plain situated between the uplands and the sea (110). The entire area is cross-cut by major rivers which, along with their associated floodplains, were the focus of settlement throughout much of prehistory. The climate is generally mild, with relatively short winters and an ample growing season. At the time of European contact, the Southeast was blanketed by dense forests dominated by oaks and hickories in the more elevated zones and by pines on the Coastal Plain (89).

Serious archaeological research in the Southeast began in the mid-nineteenth century with the collecting endeavors of various individuals and museums (285). Over time, data-gathering techniques improved and interpretive statements became more sophisticated, but generally the level of archaeological activity remained modest well into the early decades of this century. It was not until the years between 1933 and 1942 that the first truly impressive burst of fieldwork took place. These years witnessed the Great Depression, a time when various federally funded relief agencies such as the Works Progress Administration and the Tennessee Valley Authority sponsored numerous large-scale archaeological projects as a way of putting unemployed laborers to work. Dozens of sites all over the Southeast were investigated, often with crews of a hundred or more individuals. Many prehistoric mounds and villages were completely excavated, yielding data on community patterns, architecture, and burials that in some regions remain unsurpassed even today (e.g. 309). The volume of information recovered in this relatively short period was staggering, and not all of it was immediately published. Nevertheless, this episode of field research laid the groundwork for most of our current understanding of space-time systematics in southeastern prehistory. By the time World War II ended these programs, virtually all the major regional traditions had been recognized and their principal chronological subdivisions had been established (117, 136, 137).

Archaeology in the postwar era was somewhat different from that which preceded it. With some exceptions, the focus of field activity in the 1950s and 1960s shifted to smaller-scale, lower-budget operations, often taking the form of regional surveys or spatially restricted test excavations designed to refine chronologies (e.g. 115, 239, 241). Emphasis shifted to studies of stratigraphy and regional settlement distributions, since the broad horizontal exposures needed to refine understanding of household and community patterns were rarely achieved.

Recent years have once again seen an increase in the scale of archaeological activity in the Southeast, mostly brought about by the phenomenon referred to as “contract archaeology.” In the late 1960s and early 1970s, federal laws and regulations were enacted that required the salvage of archaeological remains threatened by government-sponsored construction or mining. These directives (and the fiscal expenditures they mandated) have brought about another explosion of fieldwork, not unlike the depression-era burst in its intensity, that continues to this day. Among the most significant projects since 1970 have been various multiyear, regional efforts—funded by agencies such as the National Park Service, the Tennessee Valley Authority, and the United States Army Corps of Engineers—designed to “mitigate the impact” of waterway and power plant construction (Figure 1).

These and other recent studies have not only filled gaps in previous archaeological coverage, but also have shown certain emphases which tend to set them apart from earlier work.

For one thing, the widespread use of flotation techniques, as well as an increasing sophistication in the analysis of floral remains, has greatly expanded our understanding of how prehistoric subsistence economies evolved (e.g. 64, 276, 323). As detailed in subsequent sections, the introduction of cultivated plants in the Southeast is now known to have taken place at least as early as 2000 B.C.; moreover, the shift to intensive corn agriculture appears to have been a rapid process that did not occur in most regions until after A.D. 800.

Second, an explicit interest has developed in recording and investigating the full range of settlement types that once existed, rather than only the large or deeply stratified sites. This interest has manifested itself in two trends: (a) a greater emphasis on investigating small components such as farmsteads or temporary camps, and (b) a greater emphasis on investigating sites in marginal or upland areas away from the major river valleys. Such studies have generally been concerned with issues of site function and seasonality, and have resulted in a much more comprehensive understanding of how settlements were articulated in seasonal rounds or other kinds of regional systems (e.g. 121, 132, 157, 170, 172, 173, 190, 208, 227, 229, 275, 290).

Third, more consideration has been given to reconstructing the social and political organization of prehistoric groups. Such concerns are by no means new to southeastern archaeology (264), but recent studies have tended to bring them to the forefront more often and in a much more explicit way (e.g. 43, 70, 125, 145, 235, 274, 280). Using burial and settlement data as evidence, these attempts at reconstruction have tended to rely heavily—perhaps too heavily—on general evolutionary taxonomies, and also have drawn on the rich ethnohistorical accounts of indigenous societies.

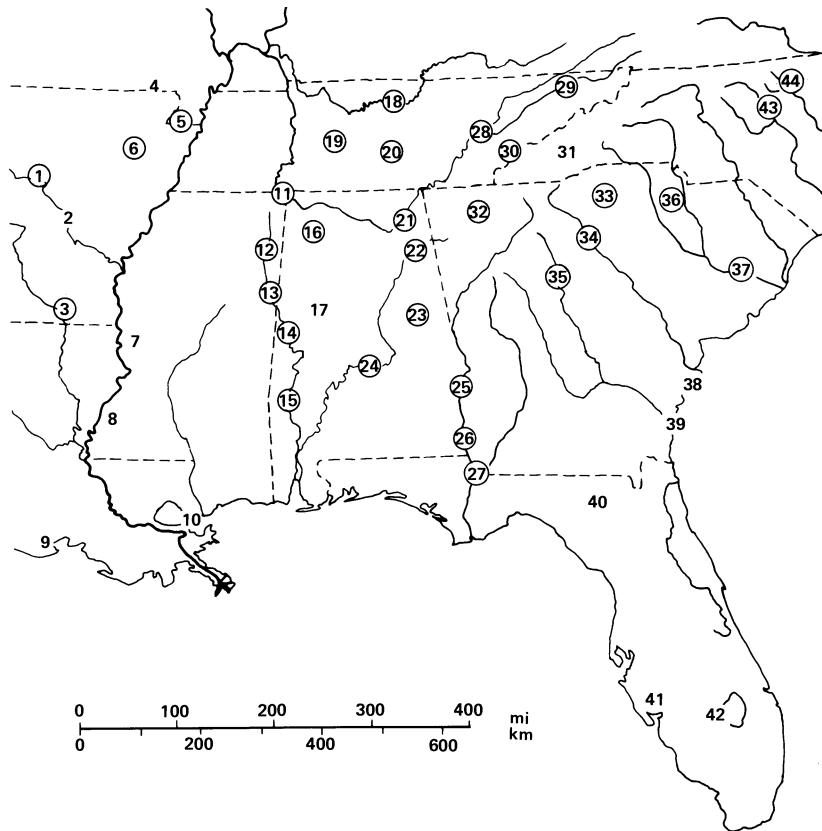


Figure 1. Some major projects with publications since 1970. Circles denote projects that were primarily funded through federally mandated contracts. Key: 1. Conway Reservoir (153); 2. Toltec (249); 3. Felsenthal Wildlife Refuge and Navigation Pool (152, 250); 4. Powers Phase (245, 275); 5. Zebree (219, 221); 6. Cache River Basin (256); 7. Yazoo Basin (239, 315); 8. Natchez Bluffs (29, 42); 9. Petite Anse (40, 41); 10. Big Oak and Little Oak Islands (270, 271); 11. Tennessee-Tombigbee Waterway Divide Cut (229) and Yellow Creek Power Plant (172, 290); 12. Tennessee-Tombigbee Waterway Canal Section (17, 313); 13. Aberdeen, Columbus, and Aliceville Reservoirs (5, 22, 228, 320); 14. Gainesville and Demopolis Reservoirs (54, 98, 164, 165, 167, 234); 15. Black Warrior-Tombigbee System Corridor (38); 16. Bear Creek Watershed (121, 227); 17. Moundville (28, 235, 253, 283); 18. Hartsville Power Plant (210); 19. Columbia Reservoir (154, 170); 20. Normandy Reservoir (103–109, 180, 209); 21. Murphy Hill Power Plant (70); 22. Weiss Reservoir (85); 23. Rother L. Harris Reservoir (186); 24. Jones Bluff Reservoir (91); 25. Walter F. George Basin (82, 185); 26. George W. Andrews Lake (13, 257); 27. Lake Seminole (312) and Interstate-10 Corridor (36, 213); 28. Watts Bar Reservoir and Power Plant (261); 29. Phipps Bend Power Plant (189); 30. Tellico Reservoir (63); 31. Cherokee Archaeological Project (92, 177); 32. Carters Dam (143); 33. Laurens-Anderson Corridor (132); 34. Russell Reservoir (4, 55, 291); 35. Wallace Reservoir (279, 280); 36. Interstate-77 Corridor (157); 37. Cooper River Rediversion Canal (2, 32); 38. St. Catherines Island (191, 288); 39. St. Simons Island (202, 212); 40. McKeithen (214); 41. Little Salt Spring (67); 42. Fort Center (266); 43. Jordan Lake (66); 44. Falls Lake (207).

Fourth, there has been a resurgence of interest in architectural and community patterns, which in turn has brought about a return to excavation strategies that expose large contiguous areas within sites. Unlike in the depression era, when large excavated areas were the product of correspondingly large crews, the modern tendency has been to "strip" plowzone deposits with heavy machinery, thereby revealing the locations of soil stains which are then mapped and dug by hand.

Let us now turn to a discussion of some interpretations that these recent investigations have produced. The discussion will be framed in terms of arbitrary periods, ranging from the earliest cultural remains to the time of European contact. I will especially focus on issues and interpretations that have emerged in the past 15 years. My treatment of the subject matter in a review of this length must necessarily be selective; anyone interested in more detailed coverage is referred to the various state and regional syntheses that have recently been published (63, 193, 206, 215, 222, 226, 239, 297, 300, 315).

PALEOINDIAN PERIOD (?-8000 B.C.)

It is generally believed that humans first arrived in North America near the end of the Pleistocene epoch, probably between 15,000 and 40,000 years ago. During much of this time, the northern portions of the continent (as well as many other parts of the world) were covered by major ice sheets. Lowered sea levels resulting from this glaciation exposed a broad land mass connecting Siberia with Alaska in the vicinity of the Bering Strait. This "land bridge" provided the entry point for human groups which subsequently expanded to populate the Americas.

The earliest inhabitants of the Southeast found themselves in an environment quite different from the one that prevailed at the time of European contact. Although the ice sheets never extended far enough south to reach this area, the climate was significantly cooler, a factor that greatly affected the distribution of flora and fauna. At the peak of continental glaciation (ca 16,000 B.C.), boreal forests dominated by spruce and pine covered much of present-day Arkansas, Tennessee, and North Carolina, while deciduous forests were confined to zones farther south (89). Present in this landscape were a variety of large mammals including mammoth, mastodon, bison, horse, and ground sloth (139). Conditions began to change rapidly after 12,000 B.C. as temperatures increased, the glaciers retreated, and sea levels rose. By 8000 B.C., the Southeast was covered by a temperate deciduous forest, and the Pleistocene fauna had largely been replaced by modern forms.

No one knows precisely when humans arrived in southeastern North America. The earliest dated evidence of human occupancy comes from Little Salt

Spring in peninsular Florida, where a sharpened wooden stake used to kill a giant tortoise has yielded a radiocarbon assay of 10,080 B.C. (67). But how much earlier people may have been present in this area is still a matter of conjecture. Claims of greater antiquity have been made for assemblages of crude core tools found in Alabama, Tennessee, and elsewhere (93, 94, 198), yet in no case have such claims been supported by firm dates or convincing stratigraphic evidence (87, 88, 300). Recently, excavations at Meadowcroft Rockshelter in Pennsylvania have revealed small flake and blade tools, debitage, and hearths associated with carbon dates ranging from 14,225 B.C. to as early as 16,650 B.C. (1). At present, these dates constitute the strongest evidence for human settlement of the Eastern Woodlands much prior to 10,000 B.C., and it should not be surprising if future work reveals sites of comparable age in the Southeast.

Be that as it may, the earliest Paleoindian complexes currently recognized are marked by a toolkit consisting of bifacial points, unifacial end- and sidescrapers, knives, graters, spokeshaves, blades, and a variety of other flaked implements, as well as bone and antler artifacts that are occasionally preserved (93, 215, 246). The most distinctive artifacts associated with these complexes are lanceolate points, often fluted, which occur in a number of regional and (possibly) temporal variants. Among these are the Clovis type, believed to be early, as well as the Cumberland, Hardaway Blade, Quad, and Suwanee types, generally thought to be somewhat later (69, 151, 300, 316). Comparisons with well-dated sites in other regions suggest that all these forms were produced between 10,000 and 8500 B.C., some perhaps earlier. However, more precise relative dating has been made difficult by the fact that no two of these types have yet been found in good stratigraphic sequence. Although thousands of such points are known from the Southeast, virtually all come from surface collections (205).

Using the surface finds, various researchers have attempted to draw conclusions about the Paleoindian settlement patterns by plotting the distribution of fluted points by county or state (30, 95, 316). Such studies, however, are complicated by a number of extraneous factors which cannot be easily controlled. For one thing, many land surfaces that existed during Paleoindian times, especially in riverine and coastal settings, have since been eroded, inundated by rising sea levels, or covered by meters of alluvium. Such geological factors have greatly biased the present distribution of sites. Moreover, it has been shown that the number of fluted points reported from a region is heavily influenced by modern conditions such as the amount of cultivated land and the density of present-day population (196). The interpretive value of these distributional studies, therefore, has generally been quite limited.

Recent finds have supported the idea that the makers of early lanceolate

points in the east hunted large Pleistocene mammals, at least occasionally. Excavations at Kimmswick in southeast Missouri have yielded Clovis points and other tools in direct association with disarticulated mastodon bones (133). Additional evidence of Paleoindian hunting practices has come from various underwater investigations in Florida, where divers have found possible mammoth kills (49, 154) as well as a bison skull with an embedded lanceolate point (308).

Perhaps the most spectacular site discovered thus far is Little Salt Spring located in the karst region of southern Florida (67). The site consists of a flooded sinkhole with submerged ledges at two depths, both of which show signs of human occupancy at times when sea levels, and corresponding ground-water levels, were lower. The deeper ledge, 26 m below the present surface, was the locus of a Paleoindian camp at which a giant land tortoise was apparently killed, cooked, and eaten. Other faunal remains, some of them charred, included bones of several more turtles and tortoises, ground sloth, bison, mastodon, rabbit, wood ibis, and rattlesnake. The occupation on the ledge produced the aforementioned date of 10,080 B.C.

That Paleoindians in the Southeast occasionally hunted megafauna is now indisputable. There is no reason to conclude, however, that such animals formed the mainstay of the diet. In addition to small game, evidence of which can be seen at Little Salt Spring, deer and fish were abundant at this time and could have been taken readily. Moreover, even at the height of the late Pleistocene glaciation, much of the Southeast was covered with deciduous forest that would have supplied an abundance of nuts and other vegetable foods. As will be discussed presently, nuts were certainly exploited in late Paleoindian times (after 8500 B.C.), and it would be surprising if the same practice did not occur earlier as well.

The end of the Paleoindian period is marked throughout the Southeast by complexes associated with unfluted points—in many cases used as hafted knives—referred to as Dalton. Originally these Dalton complexes were believed to postdate 8000 B.C., but recent evidence suggests a somewhat earlier placement, estimated between 8500 and 7900 B.C. (131; cf 319). Numerous sites of Dalton age have been excavated (31, 66, 68, 69, 84, 130, 218), and so considerably more information on lifeways is available than for earlier complexes.

The important studies of Morse and Goodyear in northeastern Arkansas have shed considerable light on Dalton community patterns (130, 220). Their excavations at the Brand site revealed five discrete clusters of artifacts, each about 10 m² in size. The assemblages that made up these clusters were surprisingly uniform, typically containing about 80 tools including points, knives, endscrapers, sidescrapers, graters, abraders, spokeshaves, adzes, and wedges. Although the excavators interpreted the site as a “hunting-butcher-

camp” used only by males, the diversity of tools strongly suggests that it may have been occupied by family groups engaged in a wide range of domestic activities (255). Unfortunately, no bone or floral remains were preserved.

Subsistence evidence gleaned from a number of other Dalton sites shows that by the end of the Paleoindian period large Pleistocene fauna were no longer hunted: Deer was the principal animal taken, with turkey, rabbit, squirrel, fish, turtle, and other small creatures eaten as well (67, 230, 231). Where preservation and recovery techniques have been adequate, hickory and walnut remains have been found, indicating clearly that vegetable foods were also an important part of the diet at this time (231).

In sum, the earliest populations in the Southeast appear to have consisted of hunting and gathering bands. The sizes of sites and the comparative rarity of artifacts that can be dated to this time suggest that groups were generally small and demographic densities were low. Fragmentary data still preclude adequate reconstruction of settlement systems, but it seems likely that residences were impermanent and shifted in response to the availability of food resources. Working out the details of such subsistence and settlement strategies remains a primary, though difficult, goal for future research.

ARCHAIC PERIOD (8000–700 B.C.)

The postglacial trend of increasing temperatures persisted into the Archaic period and culminated in the so-called Hypsithermal Interval between 7000 and 3000 B.C., when conditions were generally warmer and drier than those of today (318). Although the effects of the warming may have varied from region to region, the concomitant changes in the environment of the Southeast were profound. Sea levels continued to rise, gradually flattening the gradients of interior streams. Forest compositions also changed as deciduous stands on the Coastal Plain were gradually infiltrated by pine (89). After about 5000 B.C. temperatures once again began to cool. By 3000 B.C. an essentially modern climate prevailed, and forest types had attained a distribution virtually identical to that at European contact.

The Archaic period is conventionally divided into three segments: Early (8000–6000 B.C.), Middle (6000–4000 B.C.) and Late (4000–700 B.C.). Inasmuch as the first two segments were marked by similar lifeways, it is convenient to begin by discussing them as a unit.

Early and Middle Archaic

Recent excavations by Chapman and others (4, 57–61, 66) have supplemented earlier stratigraphic studies (45, 69), resulting in a considerably refined understanding of Early and Middle Archaic chronologies in the Southeast. The 4000-year-long interval is marked by certain regular and widespread

changes in point styles, a fact that tends to be obscured by the diversity of typologies now in use. The basic sequence begins with side-notched forms (Kessell, Big Sandy, Hardaway, Cache River, etc) that developed from the earlier Dalton; next come a series of corner-notched forms (Palmer, Kirk, Charleston, etc), followed by points with bifurcated bases (MacCorkle, St. Albans, LeCroy, Kanawah), which are in turn superseded by various stemmed forms (Kirk Stemmed and Serrated, Stanly, Eva, Morrow Mountain, Newnan, etc).

The rest of the chipped stone assemblage remains generally similar to that found in Paleoindian times, except for the gradual replacement of trianguloid endscrapers with a more varied (and less standardized) set of scraper forms. Early Archaic ground-stone tools include mullers, grinding slabs, pitted cobbles, and polished slate celts. Atlatl weights, grooved axes, and notched pebbles or "netsinkers" do not appear until Middle Archaic times. Among the bone and antler tools were awls, fishhooks, handles, and atlatl hooks. Also noteworthy is the frequent presence of ground and faceted hematite fragments—presumably used in making pigments (57, 59, 83, 138).

Early and Middle Archaic living floors usually exhibit hearths, rock clusters, grinding slabs, and small shallow pits, but no evidence of postmolds or structures (2, 4, 17, 45, 57, 59, 60, 66, 69, 84, 138, 291, 313). Absence of the latter suggests that people may have lived in lightly constructed shelters or tents. Most of the recovered features were apparently used in food preparation; although pits were sometimes used to cache tools or lithic raw materials, such features are never large or deep enough to suggest that they were used for storing comestibles. Cremated or primary burials are occasionally found at these sites, but not in large numbers or in a configuration that would suggest the presence of a formal cemetery (5, 17, 59, 155). All in all, the settlements seem to have been small and impermanent camps that were frequently moved.

The animals hunted and trapped at this time included deer, turkey, squirrel, passenger pigeon, raccoon, rabbit, and turtle. Various kinds of fish were caught, and freshwater mussels were occasionally gathered (138, 230). Important plant foods included hickory nuts, acorns, and walnuts; judging from their rarity in archaeological contexts, herbaceous seeds were not an important part of the diet at this time (64, 323).

Although the lack of permanent facilities clearly implies a pattern of shifting settlement, very little is known about how this mobility was structured. Chapman has suggested that Early Archaic groups in eastern Tennessee engaged in "central-based transhumance," with "base camps" situated in river valleys and satellite camps deployed in the surrounding countryside (57). Claggett & Cable (66) have proposed a different scenario for the North Carolina Piedmont. They argue that warming temperatures during the Early

Archaic would have favored a shift from “logistic” to “foraging” procurement strategies. In terms of settlement, this would involve a change from a system with specialized sites, fewer moves and rigid seasonality, to a much more free-ranging pattern with frequent moves and less pronounced differentiation among encampments.

Unfortunately, most such interpretations remain unsupported by regional evidence. Rarely has more than one site in a given region been excavated, and even where multiple excavations have been carried out, the constraints of salvage archaeology have often prevented the investigation of sites in a variety of environmental and topographic settings. Until a more representative sample of components from within a single region is excavated and more evidence of seasonality is obtained, the nature of Early and Middle Archaic settlement systems will remain obscure.

Taking account of the existing information from all regions, however, it is worth noting that occupations dating to this time seem broadly similar in character whether they occur in upland or floodplain contexts (3). The kinds of artifacts and features recovered tend to be the same at both. Hence, it may be misleading to think of these sites as being fundamentally different in permanence or range of activities. Deciduous forests covered most of the Southeast during the Early and Middle Archaic, and the staple foods—deer and nuts—should have been abundant in floodplain and upland settings (89, 302). Hence, it would not be surprising to find that both these zones were exploited in similar ways.

By the end of the Middle Archaic, there are signs of demographic growth in many parts of the Southeast. Artifacts and sites dating to the fifth millennium B.C. tend to be more numerous than those of earlier periods (215, 300). We may speculate that this population increase may have caused band territories to become smaller and more tightly packed, which in turn may have created a tendency to reoccupy the same sites more frequently or for longer periods of time. Shell middens and “midden mounds” began to appear along some major rivers, and larger numbers of burials were placed in certain sites (17, 84, 138, 197, 309). Although the burial clusters may simply have been the by-product of more intensive occupation in particular locales, at least some may actually represent formal disposal areas for the dead. Recent investigations in peninsular Florida have revealed a number of Middle Archaic cemeteries in flooded or boggy areas, one of which has been estimated to contain over 1000 inhumations (18, 67, 311). These developments presage patterns that were to become significantly more pronounced and widespread in subsequent times.

Late Archaic

Beginning about 4000 B.C., a number of far-reaching changes occurred in the lifeways of the Southeast. These changes were marked in the archaeological

record by four salient trends: (a) the adoption of cultivated plants as an adjunct to the diet; (b) the appearance of large, dense middens with evidence of dwellings and storage pits; (c) the first use of heavy containers made of pottery or stone; and (d) the intensification of long-distance exchange. These trends were functionally linked to higher population densities and bespeak a greater degree of sedentism that was made possible (or perhaps necessary) by a new set of economic strategies.

The practice of horticulture in the Southeast has been traced back to the third millennium B.C. and may well have started even earlier. The first cultigens were apparently cucurbits (squashes and gourds), derived from wild species that grew in Mesoamerica and perhaps as far north as Texas (78). These plants not only yielded edible seeds, but also produced fruits with thick, woody rinds that could be turned into containers. The oldest squash remains thus far recovered in the Southeast come from a feature in eastern Tennessee dated to 2440 B.C. (64). No gourd that predates 1500 B.C. has yet been found in the Southeast proper (64, 108), but evidence from Kentucky and Missouri suggests that this plant was also in use by the third millennium B.C. (65, 79, 176).

Along with the appearance of these "tropical" cultigens, Late Archaic contexts generally show an increasing reliance on the seeds of various herbaceous annuals such as sunflower, goosefoot, maygrass, and knotweed (64, 323). Some of these plants were probably cultivated at least as early as the second millennium B.C. By the start of the first millennium, certain varieties of sunflower had become true domesticates with seeds considerably larger than those found in wild forms (208, 322).

These changes in subsistence were accompanied by certain changes in settlement. Large midden accumulations appeared in many coastal and riverine settings. Near places where shellfish were intensively gathered, these deposits often took the form of "shell mounds." Even in places where shellfish were not abundant, midden deposits became denser and richer, the result of more intensive occupation of particular locales. Sites of this time often contain evidence of prepared floors and wooden-post structures; also present are deep, cylindrical pits that were almost certainly used for long-term storage of nuts or seeds. All told, such features suggest a much greater degree of sedentism in comparison to earlier periods.

Another Late Archaic innovation was the manufacture of stone and pottery containers, usually flat-bottomed bowls. The stone versions were generally carved from steatite or sandstone and were especially common after 3000 B.C. in many parts of the Carolinas, northern Georgia, northern Alabama, and eastern Tennessee (69, 206, 300). Elsewhere, farther from the sources of appropriate stone, a distinctive fiber-tempered pottery tradition developed. The earliest ceramics of this tradition are found along the Atlantic Coastal

Plain of Georgia and South Carolina and have been dated to 2500 B.C. (285); by 2100 B.C., similar pottery was being made in Florida (46); and by 1000 B.C., fiber-tempered pottery had replaced stone vessels in northern Alabama (164, 300). The functions of these early containers are not well known, but it is reasonable to suppose that at least some of them may have been used for cooking (124). Eventually, by the end of the Late Archaic, pottery of several different types had come into use over the entire Southeast, and stone vessels were rarely made.

The fourth major trend during this period was an intensification of long-distance exchange. This process was reflected in both the abundance and the variety of nonlocal materials found at Late Archaic sites. Many of the exotic items were deposited mainly in burial contexts, and may well have functioned as valuables used in social and economic transactions. Among the materials traded were marine shell, Great Lakes copper, steatite, greenstone, slate, and various colorful cherts (128). Shell, copper, red jasper, slate, and greenstone usually were shaped into ornaments such as pendants or beads; steatite was made into bowls; and exotic cherts were used to make distinctive kinds of chipped points (197, 300, 306, 309). Whether the manufacture took place at the point of origin or destination is often difficult to say. Not surprisingly, evidence of craft production oriented toward these exchanged items has been found at a number of sites (74, 75, 195, 305); in some cases this production activity involved locally available materials, in other cases it did not. This suggests a rather complex situation in which both raw materials and finished items were exchanged, with manufacture sometimes taking place at intermediate steps along a chain of transactions.

The changes that took place during the Late Archaic might well be explained, at least in part, by a hypothetical model similar to one proposed by Ford (118). Prior to 4000 B.C., when population densities were low, the procurement territories of individual groups were relatively large. Under such circumstances occasional shortfalls in preferred foods could be mitigated by moving to a different part of the territory where similar resources were available in greater abundance. But as population densities increased and territories became smaller, the possibilities for movement became restricted. This led to the adoption of alternative strategies for coping with the vicissitudes of natural production.

First, when the preferred foods failed, different locally available resources were collected in their place. This had the effect of diversifying the subsistence base, and probably accounts for the increased consumption of seeds, the adoption of cultivated plants, and the greater importance of mussels in the Late Archaic diet.

A second strategy was to put greater emphasis on food storage. Preserved human feces from cave deposits in Kentucky show unequivocally that squash, hickory nuts, acorns, sunflower, marshelder, and goosefoot—all harvested in

late summer or early fall—were being stored and consumed in the following spring (201, 321). Although these fecal specimens probably date to the Early Woodland, there is every reason to believe that such patterns began in the Late Archaic, as marked by common appearance in settlements of deep, cylindrical pits.

Third, alliances with neighboring groups were intensified, and regular exchange relationships were established. These relationships were perpetuated by the circulation of copper, shell, and other objects that probably had economic, social, and ritual significance. On one hand exchanges of such items cemented alliances which could be called upon in times of need (34). The existence of these exchanges also created an arena in which social and political relationships could be negotiated, manipulated, and changed. The social and ritual obligations engendered by these expanding alliance networks probably led some groups to further intensify craft activity, food production, and storage (14).

Taken together, the restricted range of group territories and the investment in stationary storage facilities led to a much greater degree of sedentism and redundancy in the locales chosen for settlement. These developments not only resulted in the accumulation of denser middens, but also made practical the adoption of more substantial dwellings and heavy containers.

Let us now consider in detail some of the specific cultures that arose at this time.

COASTAL CULTURES The Atlantic seaboard of the southern states presented an especially rich environment for Late Archaic populations. Along the coast itself were a series of barrier islands and inlets which set off a narrow strip of lagoons and marshes that were inhabited by numerous edible species. Slightly inland were found freshwater streams surrounded by forests that were a source of deer and nuts. Late Archaic components in the northern portions of this coastal zone, from Georgia to North Carolina, can be assigned to the Stallings I, II, and III phases (238, 287); those in the southern part of the range, encompassing east-central Florida, pertain to the temporal sequence consisting of the Mt. Taylor, Orange, and Transitional phases (215).

Settlements were marked by large accumulations of shell refuse, often deposited in the shape of arcs or rings (296). As one might expect, the patterns of food gathering reflected in these middens varied according to setting: Dumps near marshes, estuaries, and lagoons mostly consisted of oyster and coquina shell, while those near inland rivers contained freshwater mollusks. In addition to shellfish, the people exploited crab, fish, birds, reptiles, deer, and various small mammals. Plant remains tend to be rare at these sites, but traces of hickory nuts, acorns, hackberry, and edible seeds have been found. The technology of these groups was closely tailored to locally available raw materials. Besides the usual complement of flaked

stone, bone, and antler tools, large marine shells were used to make gouges, celts, and hammers. Burials are known to occur in the middens, as well as prepared areas of clay or crushed shell that appear to have served as living floors, possibly associated with structures (81, 90, 160, 202, 272, 287, 295, 314).

The nature of the economic cycle followed by the coastal inhabitants is still largely unresolved. Limited evidence of seasonality indicates that middens on the barrier islands were occupied at least from spring to early fall (202, 247). DePratter (90) suggests that these settlements were in fact sedentary, year-long occupations; others propose a seasonal pattern of coastal-inland transhumance (215). Neither interpretation can be convincingly rejected on the basis of present evidence (287).

Considerably less is known about the contemporary populations that lived along the Gulf of Mexico. Late Archaic *Rangia* and oyster-shell middens have been reported from southern Louisiana to Florida, suggesting lifeways not unlike those just described for the Atlantic coast (47, 123, 134, 294, 303, 304). A number of these sites show evidence of having participated in the Poverty Point exchange sphere, about which more will be said later.

INTERIOR RIVERINE CULTURES Away from the coastal zone, Late Archaic settlement concentrated in riverine settings. Among the better-known examples are the Eva sequence in the lower Tennessee Valley (197), the Lauderdale culture of the middle Tennessee Valley (309), the Sykes-White Springs and Benton complexes in the upper Tombigbee Valley (17), the Ledbetter and Wade phases in the Normandy Reservoir (103–109, 209), the Stallings Island culture along the middle and upper Savannah River (150, 287), and the Guilford and Savannah River complexes in the North Carolina piedmont (69, 206).

Sites of these complexes show considerable differentiation within regions. The largest middens are frequently several hectares in size and tend to occur on the floodplains or terraces of major streams. To what extent such sites represent settlement by large groups, or are simply palimpsests of numerous small occupations, is difficult in most cases to say. Upland sites have also been identified in many places. Such occupations tend to be smaller than the floodplain-terrace sites and occur in open areas or rockshelters overlooking minor tributaries (84, 138, 290).

Many of the floodplain-terrace sites have produced evidence of dwellings. A typical style consisted of a prepared clay floor 2–3 m in diameter partially surrounded by an arc of postmolds—probably the remains of an above-ground wall (17, 25, 104, 204, 208, 309). Such floors sometimes show several layers of resurfacing, suggesting multiple episodes of use. Commonly associated with dwellings were storage pits and earth ovens. Human burials occur frequently at these sites as well.

The striking differences among sites in both content and setting indicate that seasonal transhumance was practiced, at least in some regions. Jenkins (163) and Bowen (25) have proposed very similar models for different parts of the Tennessee Valley: From late spring to summer settlements were located along the main river, where subsistence activities included mussel harvesting, fishing, seed gathering, and gardening. As the river began to rise in early autumn, the people moved to other settlements located along smaller streams. Here nuts were harvested and stored, providing an important source of food over the winter. Hunting of deer and other animals was carried out throughout the yearly cycle. In addition to the summer and winter base camps just described, people also made use of various task-specific sites such as quarries, lookouts, and bivouacs. A broadly similar pattern was probably followed in many other parts of the Southeast, although the details of the seasonal round undoubtedly varied in response to local conditions (26, 38, 62, 96, 150, 227, 229, 302).

POVERTY POINT CULTURE Between 1700 and 600 B.C., the Lower Mississippi Valley was inhabited by a number of closely interacting societies, some of which seem to have attained a level of sociopolitical complexity unmatched by other Late Archaic groups. The pinnacle of this development took place in the Tensas Basin of northeastern Louisiana, where Poverty Point, the largest site of the nexus, is located.

The Poverty Point site nowadays consists of two large mounds and six concentric ridges that form a semicircle 1.2 km in diameter (115). The ridges were used as living surfaces, as evidenced by the presence of numerous postmolds, hearths, and pits (188). In the vicinity of this large site are numerous smaller occupations, most less than a hectare in size (135, 159). Similar clusters containing both large and small sites have been reported from other parts of the Lower Mississippi Valley as well, and have been assigned to the so-called Poverty Point culture based on diagnostic artifacts and dates. Many of the larger sites have semicircular midden deposits and small mounds, but none of these sites even comes close to Poverty Point itself in size and magnitude of its earthworks (76, 306).

At one time it was believed that a population capable of building such large-scale constructions must have derived its subsistence from maize agriculture (115). Recent evidence, however, has not supported this view, and suggests instead that these groups conformed to the usual Late Archaic pattern of hunting and gathering supplemented by limited gardening (159, 289).

Settlements of this culture were linked together by an elaborate system of craft production and exchange. A well-developed lapidary technology was reflected in the manufacture of beads, effigies, and plummets from both local and exotic stone. Other items were produced using a distinctive microblade tool complex that occurs in great abundance at many sites (307). Dis-

tributational studies of artifacts and manufacturing debris show that craft production was to some extent specialized, in the sense that different settlements, and possibly different social segments within the same settlement, engaged in the manufacture of different kinds of goods (76, 126, 195, 306). These goods then entered a far-flung exchange network which involved not only finished artifacts but raw materials as well. Objects found at Poverty Point sites in Mississippi and Louisiana have been traced, by chemical and other means, to sources as far away as the Appalachian Mountains to the east, the Great Lakes region to the north, and the Ouachita Mountains to the northwest (277, 301, 306). The intensity of this exchange can be seen in the abundance of exotics at many sites. At Poverty Point, for example, about 40% of all chipped stone points were made of various nonlocal cherts that originated hundreds of kilometers away (115).

The existence of specialized production, large settlements, and earthworks has led some to propose that these societies were organized as chiefdoms (125, 127). The evidence that has been marshalled in support of such claims, however, is largely inconclusive (171). Ethnographic studies have shown that part-time craft specialization is not at all uncommon in egalitarian societies, and so the existence of this phenomenon need not imply political centralization or marked social inequality. Moreover, given present evidence, the distinction between large and small sites could just as well be explained as the result of seasonal aggregation and dispersion and does not necessarily presuppose a regional hierarchy. The earthworks at the Poverty Point site itself are certainly extensive, but it is well to keep in mind that the site was inhabited for over a millennium. Until the chronology of the site's features is better understood, it would seem appropriate to reserve judgment as to how large or well organized a labor force would have been required in their construction.

None of the foregoing is meant to deny that the Poverty Point site represents an unusual development for its time. The large population that must have lived there, even if only seasonally, would have required strong mechanisms of social integration. Yet it remains to be demonstrated that these mechanisms entailed a chiefly organization of the kind that some have postulated. We should not prematurely dismiss the possibility that Poverty Point society was simply an elaborated version of the egalitarian social systems typical of Late Archaic groups elsewhere.

WOODLAND PERIOD (700 B.C.–A.D. 1000)

The Woodland period—conventionally divided into segments called Early (700 B.C.–A.D. 1), Middle (A.D. 1–600), and Late (A.D. 600–1000)—is best seen as a time of gradual change, building on the patterns that had

emerged during the Late Archaic. Important trends that characterized this period were (a) an increasing emphasis on the gathering and gardening of seed-bearing plants, (b) a general increase in the degree of sedentism, and (c) the appearance of new, elaborate forms of mortuary ritual which, at least in some localities, seem to have symbolically expressed (and thereby validated) the enhanced prestige of community leaders.

Early and Middle Woodland

Ethnobotanical studies have documented a consistent increase in the utilization of seeds from cultigens and "quasi-cultigens" (encouraged weeds) throughout the Early and Middle Woodland (64, 323). These plants included goosefoot, maygrass, knotweed, and domesticated sunflower (all of which were used during the Late Archaic), as well as a domesticated variety of sumpweed (which first becomes visible archaeologically in the Southeast after 300 B.C.). Continued cultivation and harvesting of goosefoot eventually led to the appearance of a domesticated variety that has been dated to 25 B.C. (276).

Another domesticate that was introduced during this period is maize, although the exact timing of its appearance is still uncertain. A few sites have produced evidence of this plant in contexts whose dates range from 500 B.C. to A.D. 200 (e.g. 181, 266), but the validity of these associations is open to question (73, 323). The earliest undisputed dates for corn fall somewhat later: maize pollen has been discovered in coprolites and pigments from south Florida that date to about A.D. 300 (266), and carbonized glumes have been found in a feature in eastern Tennessee that dates to about A.D. 400 (64).

Despite geographical variation in the mix of seed-bearing plants that were cultivated and in the dates at which various species were adopted (276, 323), the overall pattern of increasing use is clear. Except in the case of maize, however, estimating the dietary importance of these cultigens relative to other sources of food is not an easy matter. Isotopic studies of human bone from Early and Middle Woodland sites along the northern fringes of the Southeast have demonstrated that maize did not comprise more than a minor component in the diet (15, 24, 298)—a result consistent with the general paucity of maize remains throughout the Southeast at this time. Chemical methods do not exist for estimating the dietary contribution of other cultigens and quasi-cultigens, but the quantities of seeds recovered suggest that they also played a supplemental rather than a dominant role. One must conclude that Early and Middle Woodland subsistence was still largely based on gathering and hunting of wild foods, among which acorns, hickory nuts, deer, raccoon, turkey, fish, waterfowl, turtle, and sometimes shellfish were especially important (e.g. 27, 53, 61, 189, 212, 260). Cultigens were probably grown in small gardens that were placed in existing or recently abandoned settlements, areas that supplied

ready-made patches of disturbed ground. Such small plots could easily account for the quantities of seeds that have been found in contexts of this age. For example, given that wild goosefoot stands are known to produce more than 100,000 seeds per square meter (268), one need not assume that a very large garden was required to harvest the 50,000 goosefoot seeds recovered from an Early Woodland storage pit in Russell Cave, Alabama (276)—the largest such cache found so far.

Coastal adaptations during the Early and Middle Woodland showed considerable continuity with those established in the preceding centuries. Along the Atlantic seaboard and the Gulf coast, typical sites are shell middens, sometimes exhibiting discrete clusters of shell that presumably corresponded to different households. It has been estimated that many of the latter settlements consisted of 5–10 households (25–60 people), although a few may have contained up to 25 (212, 215). Individual houses were round or oval, wooden-post constructions ranging from 2.5 to 9 m in length (134, 211, 212, 271). Some appear to have been cold-weather domiciles with substantial walls and internal hearths, while others appear to have been flimsier, warm-weather shelters with no internal hearths (212). Architectural and faunal evidence from various regions suggests that the coastal zone was inhabited for much of the year, and that some groups may have shifted settlements in the course of seasonal cycle, or at least made use of “special-purpose” camps as adjuncts to more or less permanent villages (212, 270). The presence of contemporary sites in nearby inland localities may indicate periodic moves away from the coast as well, but the relationship of these inland sites to the coastal settlements is still far from clear (134, 212, 299).

The most abundant information on settlements of this period comes from interior portions of the Southeast, particularly central Tennessee, where more than 50 house patterns have been excavated in recent years (6, 7, 50, 104–106, 108, 109, 181, 210). These houses, located in the Cumberland, Duck, and Elk River drainages, showed considerable variation even within single sites: shapes varied from circular to oval to rectangular; maximum linear dimensions ranged from 3.6 to 13.6 m; and interior floor areas generally fell between 10 and 156 m², with a median of about 40–50 m². Cross-cutting this variation was also a distinction between lightly constructed warm-weather shelters and more substantially built cold-weather dwellings (101). Judging from floor areas and feature distributions, most of these dwellings were probably inhabited by single-family units, although some of the larger structures could well have housed two or more related families. Similar dwellings have been reported from interior portions of North Carolina, Georgia, Florida, Alabama, and Mississippi as well (77, 167, 177, 179, 214, 300, 320).

Interior communities, like the coastal ones, were typically rather small. Most consisted of one to six loosely clustered houses and covered less than a

hectare (e.g. 6, 7, 39, 104, 108, 109, 167, 181); only a few seem to have been larger (e.g. 50, 179, 214). The modal population of these settlements was probably well under 50 individuals.

Various models have been proposed to describe the patterns of residential mobility that characterized interior adaptations at this time. Some researchers have suggested that the villages located on major floodplain terraces were inhabited for most of the year, and that smaller camps (often in the inter-riverine uplands) were occupied by families or "work parties" that left the main villages for a portion of the fall and/or winter (27, 101, 165, 300; cf 7). Others have suggested that several village-like settlements were used by each group during the course of its annual cycle, with no single locale serving as a year-round base (7, 50, 101, 156). There is, of course, no reason to assume that the scheduling of residential moves was as rigid as some of these models imply, and it is reasonable to expect a good deal of opportunistic variation in the settlement strategies that were followed, both within and between regions. This variation may in part explain why it has proved so difficult to decide unambiguously among these alternative models on the basis of current evidence (cf 7, 50, 101, 181).

Be that as it may, by late Middle Woodland times (ca A.D. 400) there are indications that at least some settlements in the interior were occupied year-round. The evidence includes (a) the frequent pairing of cold- and warm-weather structures in the same settlement (101, 104, 109; cf 167, p. 18); (b) the greater effort invested in house construction (e.g. the use of 50-cm-thick wooden posts as roof supports) (101, 106, 109, 167); (c) the appearance of larger and denser midden deposits (104, 106; cf 181); and (d) the disappearance in some regions of below-ground storage facilities, implying that concealment of foodstuffs (a concomitant of seasonal abandonment) had become unnecessary (106, 109, 209). Yet despite this evidence for year-round occupancy, the rarity of rebuilding episodes argues that the longevity of these settlements was not great. A typical hamlet may have remained in place for up to several years, until the exhaustion of local resources forced its relocation (109).

The long-distance movement of valued commodities continued during the Early and Middle Woodland, although the intensity and geographical focus of exchange networks shifted through time. After 500 B.C., the Poverty Point interaction sphere no longer existed in the Lower Mississippi Valley, and Early Woodland populations in Arkansas and Tennessee participated in the Adena-related exchange networks that were centered farther north (61, 222, 278). With the start of the Middle Woodland at about A.D. 1, the frequency of exotic commodities increased across the Southeast. Objects of copper, marine shell, greenstone, chert, crystalline quartz, galena, and mica were moved hundreds and sometimes thousands of kilometers from the places where these materials originated (37, 128, 301). Some of these objects (such

as copper panpipes and Flint Ridge blades) may have been ritual paraphernalia and others (such as greenstone celts) may have been items of wealth or "primitive valuables." Archaeologically, they tend to appear in mortuary contexts, and even though their geographical distribution is wide, they are not abundant. Most were probably obtained by direct procurement or simple, "down-the-line" exchange (37, 56, 300).

Early Woodland burials in most regions consisted of primary flexed inhumations or sometimes bone bundles or cremations placed in pits (57, 61, 114, 134, 189, 222, 260, 278). Low sand burial mounds were constructed in peninsular Florida, but the internal structure of these mounds was relatively simple, showing little in the way of ritual elaboration (215, 248). Grave goods and mortuary treatments generally suggested very limited social differentiation; distinctions in grave offerings were tied to gender and possibly age (189).

In Middle Woodland times, mortuary rituals became much more elaborate, and the practice of building mounds in connection with these rituals spread throughout the Southeast (12, 37, 121, 200, 214, 238, 266, 288). Most of these earthworks consist of a surface that was used for an interval of time and then sealed under a dome-shaped cap of earth or stones. Such surfaces were delimited in a number of ways: many were raised on earthen, platforms, usually less than 1 m high (12, 23, 116, 177, 178, 187, 214, 223, 265, 266, 292, 317); some consisted of specially prepared areas that had been stripped of topsoil, covered with clay, or burned (23, 77, 162, 227, 288); and some were surrounded by low embankments or screens (77, 121, 200, 214, 315). However they were constructed, most of these surfaces were used for rituals connected with the dead, either as processing facilities where corpses were de-fleshed and/or cremated, or as charnel repositories where the remains of the dead were stored (sometimes above ground, sometimes below). The occasional presence of broken ceramic vessels and fire basins containing animal bone may indicate that food preparation played a part in these rituals (12, 200, 214). Before such a surface was finally sealed and abandoned, human remains were commonly placed on the floor or buried beneath it in pits. Burials were also frequently placed in the earthen fill of the enclosing cap. Some mounds contained only one ritual surface and cap, whereas others exhibited multiple cycles of use. All in all, the mounds shared many features, but these features were combined in a myriad of different ways, as though a common repertoire of symbols, beliefs, and ritual practices was drawn upon in creating a wide range of distinctive local interpretations.

Equally diverse were the status systems and ideologies that these earthworks embodied. At some sites, large portions of the population had access to these mortuary facilities at death, and it does not appear that any individuals were given special treatment (116, 266). Elsewhere, however, mortuary rituals were used to express social differences in an obvious way, as

some people were singled out with particularly elaborate modes of burial. Such individuals were typically placed in specially constructed “tombs” and accompanied by elaborate grave offerings made of nonlocal raw materials (e.g. 77, 113, 200). Often the ritual surfaces associated with these remains were sealed immediately thereafter. This kind of treatment clearly implies some degree of social ranking. Most analyses suggest, however, that the societies at this time were still largely egalitarian, in the sense that attainment of special statuses was based more on competence than heredity (35, 70, 129, 214, 288, 293, 299; cf 161).

Taken together, the available data suggests that, at various places and times during the Middle Woodland, local leaders emerged who symbolically set themselves off from the rest of the populace. The fact that these leaders were often buried with nonlocal artifacts and raw materials suggests that one aspect of their power lay in the ability to negotiate exchanges (and perhaps alliances) with other communities. Alternative avenues to leadership may well have been prowess in war or the possession of esoteric ritual skills. Whatever the case, participation in regional exchange and alliance networks—especially those involving prestige goods—was also probably dependent on the ability to mobilize local labor. This labor could have been deployed not only for the construction of ritual earthworks that enhanced a kin-group’s or local leader’s prestige, but also for the production of surplus food that could be used for intercommunity feasts and other social transactions. Such demands might have contributed to the intensification of seed-crop cultivation that took place at this time.

Since the maintenance of leadership positions was dependent on personal skill and the ability of local communities to sustain enhanced levels of production in what was still basically a nonagricultural economy, it is not surprising that the resulting political formations were often quite unstable. This condition is nicely illustrated by the archaeological sequence at the McKeithen site in Florida (214). Although this village was inhabited for several hundred years, its three ritual platforms were constructed and used within a relatively brief time that apparently coincided with the career of a single leader. When this leader died, the platforms were capped and fell out of use. In much the same way, many Southeastern burial mounds probably represent transient episodes during which local groups and individual leaders found it in their interests (and economically feasible) to engage in this sort of ritual. This model accounts not only for the diversity of Middle Woodland mounds, but also for their sporadic distribution: many communities probably never participated in mound-related rituals at all.

Late Woodland

The hunting, gathering, and gardening economies that had developed over the preceding centuries continued into the Late Woodland period essentially

intact (e.g. 24, 54, 122, 234, 253, 323). Settlements were still predominantly small and dispersed, consisting of no more than several households. Seden-tism may have increased in some areas (e.g. 300, pp. 128–29) but decreased in others (e.g. 108, p. 308), depending on local vicissitudes. The dominant pattern was still one of residential bases with substantial houses and storage facilities, supplemented by special-purpose, often seasonal, camps (51, 91, 108, 165, 168, 208, 213, 222, 228, 300, 310).

Populations became larger in a number of regions at this time (13, 82, 165, 166, 169, 185, 214, 237, 312). Where adequate evidence of subsistence has been recovered, this growth seems to have been accompanied by an increase in the diversity of foods that were hunted and gathered, especially evident in the greater exploitation of shellfish and small mammals (54).

Burial mounds continued to be used over much of the Southeast (45, 72, 85, 119, 203, 215, 261, 300). These mounds often had “initiatory” burials associated with the underlying surface as well as “inclusive” burials in the fill; yet their internal features were far less elaborate than those of Middle Woodland mounds. In regions that lacked such earthworks entirely, the dead were interred in pits within village areas, sometimes in discrete cemeteries (22, 33, 51, 100, 108, 153, 165, 167, 209, 228, 300). The presence of burials in various stages of disarticulation suggests that defleshing or reinterment rituals were still practiced. In general, however, mortuary treatments became simpler, in the sense that primary burials became more common and the practice of cremation ceased almost entirely.

Equally striking was the decrease in the diversity of burial offerings that characterized this period, especially in the more elaborate interments. Exotic materials such as copper, galena, mica, and Flint Ridge chert, so widespread during Middle Woodland times, virtually disappeared from mortuary contexts. Instead the emphasis shifted to shell pendants and beads (54, 100, 108, 222, 238, 300). The latter in particular began to occur throughout the interior Southeast in much greater quantities than before, especially after A.D. 800. Hundreds, even thousands, of beads were sometimes placed in single graves. Many of these beads and pendants were made of marine shells (*Marginella*, *Olivella*, *Busycon*) that were obtained from distant sources on the Gulf and Atlantic shores; many were also manufactured from locally available riverine snails (*Anculosa*, *Goniobasis*).

The proliferation of shell ornaments was paralleled in some regions by new evidence of craft production. From the Mississippi Valley to eastern Tennessee, middens have yielded “microliths” that may have been used in making beads and other commodities (98, 100, 102, 120, 222). Fragments of cut shell—manufacturing debris—have been found as well (219, 257).

Few statistical analyses of Late Woodland burials have so far been attempted. Even so it is worth noting that higher quantities of shell and other

grave offerings often correlate with special mortuary treatments (e.g. initiatory burials in mounds or seated burials in cemeteries), which suggests that prestige distinctions among adults were still being expressed at death (71, 72, 261). Yet these distinctions were far less pronounced than in the previous period, as though individual status rivalry had diminished in importance and descent-group solidarity had become the dominant principle governing mortuary ritual.

This was the substrate from which grew the various social and political changes that became prevalent across the Southeast after A.D. 1000, a period to which we will soon turn. First, however, it is necessary to discuss two cultures that deviated from the Late Woodland "norm" in ways that further presaged these later developments.

COLES CREEK CULTURE This name refers to a distinctive pattern that emerged in the Lower Mississippi Valley by A.D. 700 and lasted for at least four centuries thereafter. Coles Creek sites are found over a long stretch of the valley from the Gulf coast to the Yazoo Basin (239, 315). Farther north, in the Arkansas River lowlands, a closely related culture called Plum Bayou has recently been defined (249).

Characteristic of Coles Creek culture were civic-ceremonial centers marked by flat-topped, pyramidal mounds (11, 41, 112, 226, 239, 315). These mounds were moderate in size, usually less than 6 m high, and tended to occur in small groups. The vast majority of Coles Creek centers had fewer than five such mounds arranged around an open plaza; a small handful of "megasites" had more (249). Regardless of the number of earthworks present, the poverty of midden deposits implies that these centers had relatively few inhabitants. Most people lived in small settlements without mounds, dispersed widely over the landscape (e.g. 153).

Although hundreds of Coles Creek centers have been reported, very few have ever been adequately excavated. From these we know that such mounds were used continuously for up to several hundred years, that they were typically built in stages, and that each stage had a wooden-post building on its summit (11, 112, 226, 315). Some of these buildings were probably "temples" or charnel houses, an interpretation suggested by the presence of numerous corpses (in various states of disarticulation) buried in the floor or in a cemetery nearby. Other buildings, with central fireplaces and associated refuse deposits, may have been residences of elite individuals.

If the latter interpretation is correct, then the existence of these structures implies that a new, more stable kind of elite status had developed. The fact that these residential mounds were not capped and abandoned after a single cycle of use (as in earlier times), but rather were enlarged repeatedly and inhabited for generations, implies that the prestige they symbolized had a

continuity that transcended the lifetime of any given individual. This prestige was probably the kind linked to formal offices of leadership and perhaps to hereditary ranking. Taking such reasoning one step further, it is tempting to speculate that access to the charnel facilities within these centers was limited to certain privileged descent groups from which the leaders—holders of these formal offices—were drawn.

All this, of course, remains very difficult to prove, especially given the paucity of excavated data. Nevertheless, some further observations can be made in support of this model. Faunal analyses at two widely separated Coles Creek centers suggest that food bones discarded on or near mounds represent a markedly higher proportion of deer meat than is typical of other contexts, perhaps indicative of status-related differences in diet (41, 315). Also, the presence of adult burials with human remains as apparent grave offerings—such as the adult male interred with 13 infants in Mound C at Lake George (315)—is evocative of the burial treatments that were associated with high status at later, Mississippi-period sites.

Despite some attributions to “generalized Mesoamerican influences” (315), the pyramidal mounds themselves are best seen as indigenous developments from Middle Woodland prototypes. During this earlier period, sacred areas used in community rituals often took the form of rectangular earthen platforms, most of which were eventually covered with dome-shaped tumuli. Such early platforms, seen archaeologically as the “primary” stages of Middle Woodland burial mounds, were especially common in the Lower Mississippi Valley where the Coles Creek pattern came into being. By placing their residences atop similar platforms, the Coles Creek elites effectively co-opted this symbol to help sanctify—and thereby legitimate—their political and religious authority. Such ideological manipulations (and others we will probably never know of) were critical elements of the process by which these simple chiefdoms were formed.

It has been suggested that Coles Creek populations relied heavily on maize, an inference based largely on settlement patterns and high caries rates, rather than on direct botanical evidence (153, 315). Although maize was certainly grown by Coles Creek peoples (289), its extreme rarity in midden deposits argues that it played no more than a supplementary role, much as in Late Woodland economies elsewhere (cf 41, 153, 226). This matter will remain unsettled, however, until more carbon-isotope studies of human bone are undertaken.

EMERGENT MISSISSIPPIAN PHASES Between A.D. 800 and 1000, a new complex of material traits, and possibly a new subsistence pattern, started to appear across a broad area of the interior Southeast, from the central Mississippi Valley to the western Appalachian piedmont. Some of the better

documented phases that show these traits are the Big Lake phase of northeast Arkansas (182, 219, 221, 222), the Banks phase of central Tennessee (100, 106, 108, 109), the Martin Farm phase of eastern Tennessee (262), the Late Miller III and West Jefferson phases of western Alabama (165, 168), the early Rood phase of the lower Chattahoochee drainage (257), and the Macon Plateau phase of central Georgia (99). Very similar developments were also taking place in adjacent regions at about the same time (9, 199, 222).

Among the material traits that marked these phases were rectangular wall-trench houses and shell-tempered pottery, two classic hallmarks of Mississippian culture. The pottery in particular was a significant technological improvement over previous wares. The use of shell temper not only allowed the construction of larger, more durable vessels, but also made possible a new range of vessel forms by enhancing the workability of local clays (216, 284). Hence, it is not surprising that this innovation was adopted rapidly in most places where it was introduced.

Most Emergent Mississippian settlements were rather small and, except for the distinctive house types and pottery, do not look very different from contemporary Late Woodland settlements elsewhere (106, 108, 109, 168). A few sites did, however, show signs of increasing community size and complexity. For example, the Big Lake component at Zebree covered more than a hectare and was surrounded by a fortification ditch (219, 222); also, the early Rood phase community at Cemochechobee had a small civic-ceremonial precinct which gradually became more elaborate through time (257).

Platform mounds were not much in evidence. The few that are known were small and probably built after A.D. 900 (10, 99, 262). Given the paucity of such constructions, and of public architecture generally, there is little reason to believe that Emergent Mississippian groups were as centralized as some later Mississippian societies, or even as the contemporary Coles Creek societies to the south and west.

Another characteristic of Emergent Mississippian sites is a distinct increase in the archaeological abundance of charred maize fragments (54, 106, 108, 109, 221, 234, 253, 262). Although this increase might mean that corn had become a dietary staple, recent carbon-isotope studies seem to indicate otherwise: the three samples of human bone tested thus far, all from Big Lake phase burials at Zebree, showed no detectable traces of maize consumption (24). Just as for Coles Creek, additional carbon-isotope studies are sorely needed.

MISSISSIPPI PERIOD (A.D. 1000–1700)

Over the years, the term “Mississippian” has taken on a variety of meanings. It was originally applied to a distinctive complex of material traits, including

shell-tempered pottery, wall-trench houses, and flat-topped pyramidal mounds. Later its meaning was broadened to include all Southeastern populations whose subsistence was derived principally from agriculture. Most recently the term has also been used to refer to a particular kind of sociopolitical organization that entailed hereditary ranking and centralized leadership. Although the many traits implied by these definitions were not invariably correlated, they all became widespread during the last major episode of Southeastern prehistory, after about A.D. 1000.

The most revolutionary change that marked this period was the wholesale adoption of maize agriculture, a process that has been documented archaeologically in food remains (19, 54, 64, 234, 253), pollen profiles (80), and studies of human bone (15, 24, 298). As mentioned previously, intensified production of this crop may have started in some regions as early as A.D. 800. By A.D. 1200, large quantities of maize were being grown and consumed in virtually every part of the Southeast. The few exceptions to this pattern were found in coastal areas of south Florida, where a nonagricultural lifeway persisted into the sixteenth century (215).

Although the shift to intensive maize agriculture took place at different times in different regions, the transition within each region seems to have been fairly rapid, spanning no more than a single archaeological phase (54, 234, 253). How quickly this intensification occurred is reflected in carbon-isotope studies of human bone: the samples analyzed so far do not show a gradual increase in corn consumption through time, but rather a sudden jump. And when this jump occurred, corn intake rose from barely detectable levels to comprise, on the average, about 50% of the total diet (15, 24, 298).

Nor was corn the only crop raised by Mississippi-period farmers. Indigenous cultigens such as goosefoot, sumpweed, and sunflower continued to be grown, as were squash and gourd (64, 180, 253). Domesticated beans were introduced into the Southeast shortly after A.D. 1000 (19, 52, 64, 253). This crop was an especially important complement to maize, not only because its nitrogen-fixing properties helped to maintain soil fertility, but also because it provided a rich source of nutrients that maize lacked.

Intensive agriculture could not be carried on in small gardens; rather, extensive field clearance became necessary. That such habitat disturbance took place has been suggested by assemblages of wood charcoal and rodent bones from a number of Mississippi-period sites (217, 253, 263). Farmers in interior south Florida apparently did more than simply clear the vegetation. There, artificial linear embankments have been interpreted as "raised fields," which allowed corn to be grown in soils that would otherwise have been too wet (266).

Even with the greatly increased reliance on crops, wild plants and animals continued to be important sources of food. The gathering of nuts, the hunting

of deer, turkey, and other small creatures, fishing, and the taking of waterfowl (especially in the Mississippi Valley) were carried on seasonally, much as before (64, 194, 273). The availability of agricultural produce did have the effect, in some regions, of greatly reducing human pressure on animal populations, a pressure that had reached its peak during the Late Woodland. As corn became common, the exploitation of small mammals declined relative to deer, and average prey sizes within certain species increased (263).

Given the available evidence, it seems most likely that the shift to maize agriculture was largely precipitated by demographic stress. As Late Woodland populations grew and food requirements increased, households were at first reluctant to intensify gardening because of the high "startup costs" associated with clearing fields. The initial, least-effort solution was simply to intensify the harvesting of wild foods, a trend seen in the high species diversity and diminished prey size that characterized Late Woodland faunal assemblages. Eventually, however, the limits of hunting and gathering were reached, and the marginal costs of intensified wild-food procurement became greater than the costs of clearing fields. It was probably at this point that the change from limited gardening to full-scale agriculture began (97). And once the fields were cleared, agriculture could provide far more food per unit labor than the previous pattern of intensive hunting and gathering; hence, productive efforts were quickly redirected from the latter to the former, harvest pressure on wild resources declined, and a new economic regime came rapidly into being (254, 263).

Whether or not this model proves correct, there is little doubt that intensive agriculture was the foundation on which the complex societies of this period were built. Generally speaking, these societies were of the type called chiefdoms and were intensely hierarchical in structure. Modern reconstructions of these societies have relied on both ethnohistorical and archaeological evidence; let us begin by reviewing the latter.

Mississippian social differentiation was clearly expressed in mortuary ritual. Commoners were typically interred in simple graves that were either grouped in community cemeteries or scattered in proximity to dwellings; typical grave goods included simple shell ornaments, ceramic vessels, and domestic tools (4, 5, 63, 86, 92, 111, 120, 140, 143, 224, 228, 234, 238, 262). High-ranking individuals, on the other hand, were generally buried in or near public buildings (which were usually placed on mounds) and were often accompanied by copper headdresses, ceremonial weapons, large quantities of marine shell beads, and other elaborate artifacts (71, 145, 175, 192, 233, 235, 252, 257). Some cemeteries contained a range of burial offerings with individuals arrayed in rows; in such cases, elaborate and simple graves were sometimes segregated into separate rows, suggestive of differentially ranked kin groupings (16, 233; cf 71).

Not only were commoner/elite distinctions visible in burial treatment, but in diet and health as well. For example, studies of Dallas-phase skeletons from eastern Tennessee have demonstrated that elite males buried in mounds (*a*) had greater access to meat than commoners, (*b*) were significantly taller, (*c*) showed less evidence of strenuous physical activity, and (*d*) underwent fewer episodes of acute biological stress in childhood (147–149). Similar patterns have also been recognized elsewhere (236; cf 21, pp. 426–27).

Many researchers have argued that burial patterns at Mississippi-period sites are suggestive of hereditary or “ascribed” social ranking (145, 192, 233, 235, 267)—a conclusion fully consonant with the ethnohistorical accounts. Yet clearcut indications of “achieved” rank have been isolated as well (20, 148, 149). These results point up the fact that, as in all chiefly societies, access to positions of high status was not determined by rigid ascription alone. Rather, status was probably the outcome of a continuous process of social negotiation, in which arguments based on birthright, personal history, and individual competence all played a role—albeit to varying degrees depending on the position in question.

The social and political hierarchies of this period were also manifested in public architecture, as civic-ceremonial centers proliferated across the Southeast. These centers were not unlike Coles Creek and Emergent Mississippian prototypes, but were often constructed on a grander scale. A typical center was marked by one or more pyramidal mounds, each of which supported an elite residence, a charnel house, or other public building (52, 63, 92, 215, 222, 225, 234, 250–252, 257, 259, 279, 315). Some of these centers attained colossal proportions. Moundville, one of the largest in the Southeast, had at least 20 mounds, of which the largest was 18 m high and covered more than half a hectare at its base (283). The mounds themselves were built in stages, almost certainly as part of community rituals (257).

Apart from their public architecture, Mississippi-period settlements took on a variety of forms. Known types include: (*a*) large “mound-and-village complexes,” commonly 1–10 ha in size, that contained hundreds of inhabitants and were usually surrounded by fortification walls and ditches (8, 52, 143, 146, 175, 215, 222, 234); (*b*) nucleated villages without mounds, also commonly fortified (4, 92, 140, 144); (*c*) civic-ceremonial centers with only small resident populations (239, 315); and (*d*) tiny farmsteads containing one, two, or three houses at most (28, 42, 55, 120, 180, 228, 242, 281, 291). These types intermixed in various ways to form a range of different settlement systems (274). Some groups preferred aggregated settlements, others remained predominantly dispersed, and yet others adopted a flexible strategy that combined both options. Regardless of size, the villages and farmsteads all appear to have been permanent, year-round habitations (275). Special-purpose sites such as agricultural field houses, hunting bivouacs, and salt-

production camps were used as well (2, 32, 36, 40, 84, 138, 152, 174, 184, 186, 269).

Most Mississippian-period communities were linked by political, economic, and social ties into larger regional polities. These polities varied greatly in size and complexity, both across space and through time. At one end of the scale were relatively simple chiefdoms—each a small, relatively autonomous political unit consisting of a single center and its immediate hinterland (92, 245, 283). At the other extreme were larger, more centralized polities with two levels of chiefly authority, indicated archaeologically by two levels of centers (29, 232, 258, 280, 283). Such complex political formations were not much in evidence prior to A.D. 1200, but once they appeared, some of them grew to be quite large in size. For example, the mid-sixteenth century chiefdom of Coosa, as described in the De Soto narratives, allegedly stretched for some 500 km from northeast Tennessee to central Alabama; but the very same narratives imply that its unity was extremely fragile, especially at the edges, where the authority of the paramount was only nominally established (158). Coosa and other chiefdoms like it apparently consisted of numerous, quasi-autonomous polities, each centralized internally but linked externally by relations that resembled alliance more than true hegemony, especially as the distance from the paramount center increased. Such formations were constantly subject to fragmentation and realignment as political and military fortunes changed.

There is good evidence, both archaeological and ethnohistorical, that chiefly officials were entitled to payments of tribute from the populations they controlled (282). Archaeologically such relations have been detected in differential distributions of food bones between elite and nonelite contexts: skeletal elements from the meatier parts of deer tend to be overrepresented in the former and underrepresented in the latter (4, 252, 263, 281, 315). Tribute in corn was undoubtedly collected as well. Some of it was used to feed the political establishment; a portion was also stored in public granaries—what the historic Creeks called the “king’s crib”—from which chiefs could distribute food in time of need.

Relations between communities were also maintained by means of exchange. Copper, marine shell, mica, galena, fluorite, bauxite, glauconite, diorite, and other unusual materials were moved over great distances in both finished and raw form (128, 240, 301). Because artifacts of such materials tend to appear more often with elite burials, it is reasonable to suppose that at least some of these commodities moved within spheres of conveyance that principally involved elites. Other more prosaic items were probably traded by means of reciprocal transactions at the household level. One such item was salt from saline springs; at the time of European contact, certain groups were noted as being especially involved in its commerce (40). Pottery was also

exchanged between regions. At Moundville, for example, about 14% of the vessels found in graves were of recognizably nonlocal styles, some from as far as 600–800 km away (283).

Various authors have suggested that the political centralization of Mississippi-period groups was an adaptive response to the stress of warfare and the risks of crop failure (118, 235, 254, 283). Although these models have pointed out the advantages of centralized leadership, they have not attempted to reconstruct the social and economic strategies by which chiefly offices were formed, or the ideological mechanisms by which social inequality was legitimated. Achieving such reconstructions will require, on one hand, considerably more research on relations of production and exchange, and, on the other, a much deeper understanding of Mississippi-period symbols and ritual—topics that are just beginning to receive the detailed attention they deserve (44, 141, 142, 183, 240, 244).

For now, only a few tentative suggestions can be offered. First, it may not be coincidence that microlithic tools (9, 92, 98, 100, 102, 120, 222, 234, 291), abraders (191), and other possible signs of shell-bead manufacture are most prevalent in many regions between A.D. 800 and 1300, precisely when Mississippian polities emerged and consolidated. Beads, beaded garments, and other valued craft items probably served as tokens in social transactions (cf 243). Displayed as possessions, these tokens enhanced personal prestige; presented as gifts, they could be used to build alliances and inflict social debts. Exchanges of such items, especially among budding elites, were instruments of political strategy as much as, if not more than, purely economic activities. This interpretation is consistent with the fact that large numbers of shell beads were buried with important people in terminal Woodland and early Mississippian cemeteries. It is also worth noting that shell manufacturing debris has been found on the floor of an elite residence dating to this time (257).

Second, the adoption of maize agriculture, while certainly entailing some risks, also provided greater opportunities for accumulating surpluses that could be deployed for social and political purposes, such as intercommunity feasting, gift giving, and the like. Limits on how far wild-food harvesting could be intensified—especially in view of the expanding subsistence requirements of preagricultural populations—may have placed a damper on this kind of political activity, or at least on the scale of such activity, among Late Woodland groups. After the switch to agriculture, this constraint was removed, allowing sociopolitical hierarchies to attain new heights of complexity.

This complexity is what impressed the Spanish explorers in the mid-sixteenth century, but it was not to last much longer. The diseases and turmoil brought by European incursions, as well as internal conflicts, ultimately

resulted in a collapse. By A.D. 1700, massive depopulations had occurred and the regional political hierarchies had all but disappeared. Subsequent decades saw the rapid transformation of native cultures as they coped with and adapted to the increasing Euro-american presence. More and more of their lands were expropriated until finally, in the second quarter of the nineteenth century, the bulk of the remaining Indian population was forcibly evicted to territories far west of the Mississippi River.

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