

CHAPTER 6

Between Farmstead and Center

The Natural and Social Landscape of Moundville

C. MARGARET SCARRY AND
VINCAS P. STEPONAITIS

Between A.D. 900 and 1650 the Black Warrior Valley of Alabama was the setting for dramatic cultural changes. This period encompassed the emergence, florescence, and dissolution of the Moundville polity. At the beginning of the period, the valley was inhabited by people who lived in egalitarian communities and relied on foraging and small-scale gardening for their food. Over the next century or two, the people of the Black Warrior Valley reorganized their social, political, and economic relations. The changes they made ultimately resulted in the establishment of a complex chiefdom supported by an economy based on corn agriculture. This polity was controlled by a chief, who lived at the site we know today as Moundville (figure 6.1).

We and our colleagues, both past and present, have devoted considerable effort to investigating the emergence and organization of the Moundville chiefdom and to defining its place in the Mississippian world of the late prehistoric Southeast (see for example Bozeman 1982; Jones and DeJarnette n.d.; Knight 1989; McKenzie 1964, 1966; Moore 1905, 1907; Peebles 1974, 1983, 1987a, 1987b; Powell 1988; Scarry 1986; Steponaitis 1983, 1991, 1992; Welch 1990, 1991). Here, however, we are going to examine the Moundville polity from a different perspective. Our focus will be the dynamic period between A.D. 900 and 1250, when the Moundville polity was taking shape. First we will outline the development of the polity and describe changes in the production and procurement of plant foods that accompanied the changes in social and political relations. Then we will discuss economic relations between people living at Moundville and people living on farmsteads. Finally,

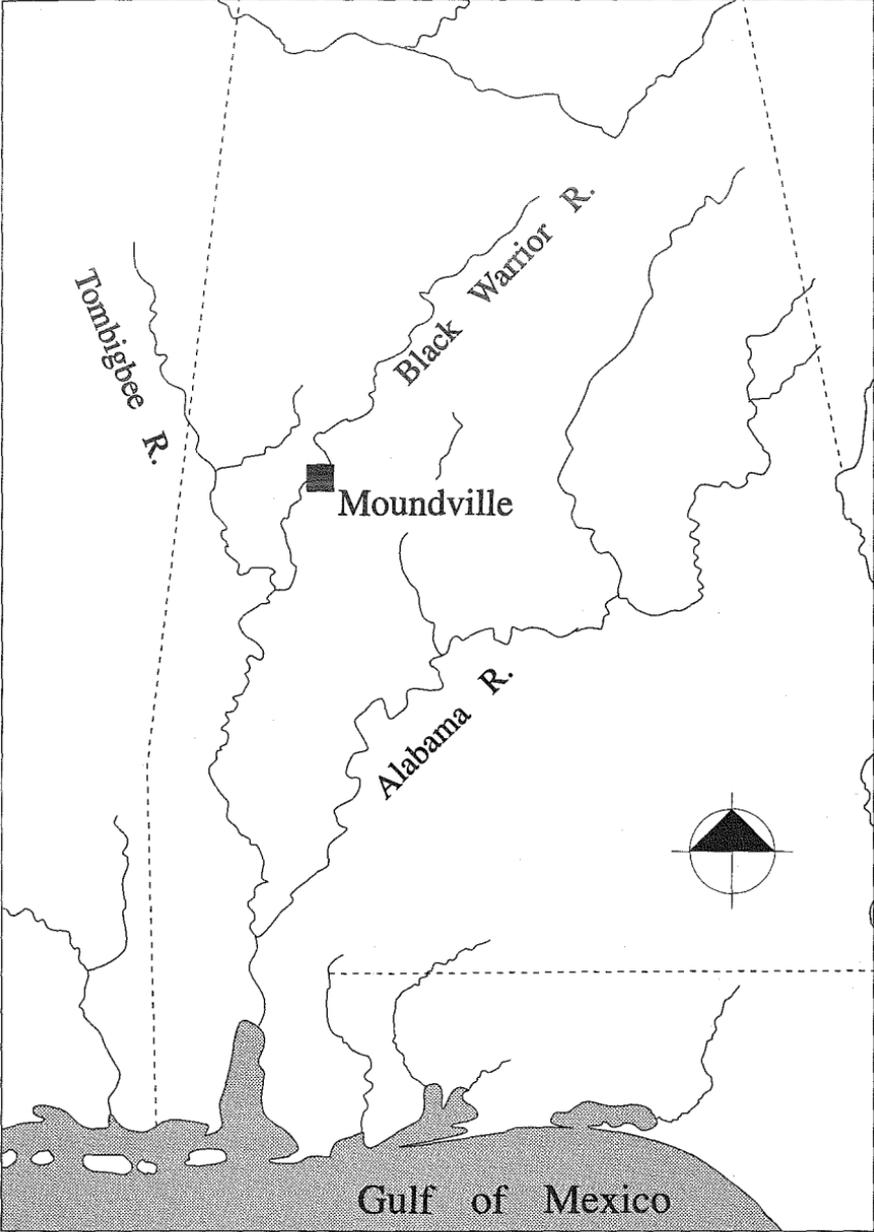


Figure 6.1. Location of the Moundville polity.

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we will offer some thoughts about how the changes in the cultural landscape affected the natural landscape.

Social and Political Development of the Moundville Polity

The late prehistoric occupation of the Black Warrior Valley can be divided into five chronological phases, all but the last of which can be further subdivided into early and late subphases based on differences in ceramic styles (Curren 1984; Jenkins and Nielsen 1974; O'Hear 1975; Steponaitis 1983, 1992). The phases provide a framework for tracking trends in settlement, political, and economic organization.

During the West Jefferson phase, A.D. 900–1050, people lived in small villages that were scattered over favorable locations on the valley's floodplain. Evidence for political differentiation among West Jefferson communities is nil (Welch 1990). The sites do not have mounds and are not known to contain elaborate burials. The overall situation seems to have been one of autonomous villages and a relatively egalitarian society.

With the beginning of the Moundville I phase, at about A.D. 1050, the social landscape changed dramatically. Single pyramidal mounds were constructed at several of the former villages. At roughly the same time, most people left the nucleated villages and began living in dispersed farmsteads, which consisted of one or two households surrounded by their fields. Presumably each mound site served as the political, economic, and ritual focus for the people living on farmsteads nearby (Bozeman 1982; Steponaitis 1983).

So far as we know, the early local centers may have been roughly equivalent in terms of the number and size of mounds. The center at Moundville, however, differed significantly from the others. It had an unusually high number of people living in its immediate vicinity. Recent analyses of sherd collections indicate that approximately three-quarters of the chronologically diagnostic sherds from midden deposits (as opposed to mortuary or mound contexts) at Moundville date to the Moundville I phase (Steponaitis 1991, 1992; Welch 1989). These data suggest that Moundville's resident population was greatest in this early phase. This picture is reinforced by the results of salvage excavations conducted on the northwest edge of the site by the Alabama Museum of Natural History. In an area of approximately 1800 sq m, remains of

at least thirteen structures were found (Scarry 1995). Ceramics and a series of radiocarbon determinations indicate that the structures are predominantly, if not exclusively, Moundville I in date. The full extent and distribution of Moundville I middens at Moundville are unclear. Discrete patches of midden seem to be scattered across the terrace on which the site is located. This suggests to us that an unusually high density of farmsteads once dotted the area. Based on surveys of the valley that have been done to date, no other district had as high a concentration of Moundville I settlements. We would stress that Moundville had no obvious advantage over the other centers in the abundance or fertility of nearby soils. Thus the causes of this centripetal tendency must have been social and political, rather than purely environmental (Steponaitis 1991).

Whatever the case, during the Moundville I phase at ca. A.D. 1150, a second major transformation occurred, as Moundville gained clear political ascendancy over the entire region. The most obvious expression of this change was the construction of an enormous civic-ceremonial precinct covering some 100 ha. This precinct consisted of some twenty pyramidal mounds arranged around a large rectangular plaza (figure 6.2). The complex was enclosed on all but the bluff edge by a massive, bastioned palisade. (Note that the recent excavations on the riverbank at Moundville produced evidence that the palisade dates to the Moundville I phase [Scarry 1995].) It is clear from the site's symmetrical structure that the layout was deliberate and that the position and size of the mounds had social and religious meaning (Knight 1989; Steponaitis 1991).

Some 150 years after the mound-and-plaza complex was built, Moundville's resident population greatly declined, as indicated by the relative paucity of middens dating to the Moundville II and III phases (Knight 1989; Steponaitis 1991; Welch 1989). The smaller contingent of people who continued living at Moundville after A.D. 1300 probably comprised the pinnacle of the region's social, political, and religious elite.

The Moundville II and III phases, A.D. 1250–1550, encompass a time when the chiefdom was entrenched and Moundville served as a center of politics and ritual for the entire region. Analyses of burials from Moundville indicate that social differentiation was pronounced. There is also substantial evidence that Moundville's elite had ties with other



Figure 6.2. The mound-and-plaza complex at Moundville.

polities through long-distance exchanges of prestige goods (Peebles 1974, 1987a, 1987b; Steponaitis 1991; Welch 1991).

Although Moundville's elite clearly dominated the social and political scene in the Black Warrior Valley, other local centers (each with only a single mound) continued to be used. Presumably these centers were under the control of local chiefs, who though subordinate to the paramount at Moundville had jurisdiction over their immediate districts. As before, most of the region's population lived in dispersed farmsteads, where the machinations of the elite may have had little impact on their daily lives.

Sometime after A.D. 1500, the chiefly superstructure began to unravel (Peebles 1986; Steponaitis 1991). The dissolution of the polity was rapid. By the beginning of the Moundville IV phase, A.D. 1550, Moundville and the single-mound centers were no longer in use. People were once again living in nucleated villages, and all evidence of ranking disappeared from burials.

Agricultural Economy of the Moundville Polity

Having sketched the development of the Moundville polity, let us now examine plant production and procurement in the West Jefferson and Moundville I phases. The patterns we describe are derived from analyses of food plant remains that were recovered by flotation. The West Jefferson data came from twenty refuse pits from seven sites dating to early and late West Jefferson times (Scarry 1986:132-38). Moundville itself is represented by remains from thirty-two refuse pits that date to the late Moundville I phase and come from elite residential deposits (Scarry 1986:138-74). Finally, we have data from sixteen refuse pits from two Moundville-era farmsteads (Scarry 1993). The ceramics from one farmstead suggest that it dates to the Moundville I phase (Michals 1990). The other farmstead lacks diagnostic ceramics but has indications that it also was occupied in Moundville I times (Ensor 1993).

The food plants used by the people of the Black Warrior Valley were essentially the same in all contexts we examined (see Scarry 1986, 1993 for detailed analyses of the data summarized below). Corn (*Zea mays* ssp. *mays*), hickory nuts (*Carya* sp.), and acorns (*Quercus* sp.) were the dominant resources. Remains of these plants occurred in virtually every sample. Native crops and wild fruits also were used. Seeds from

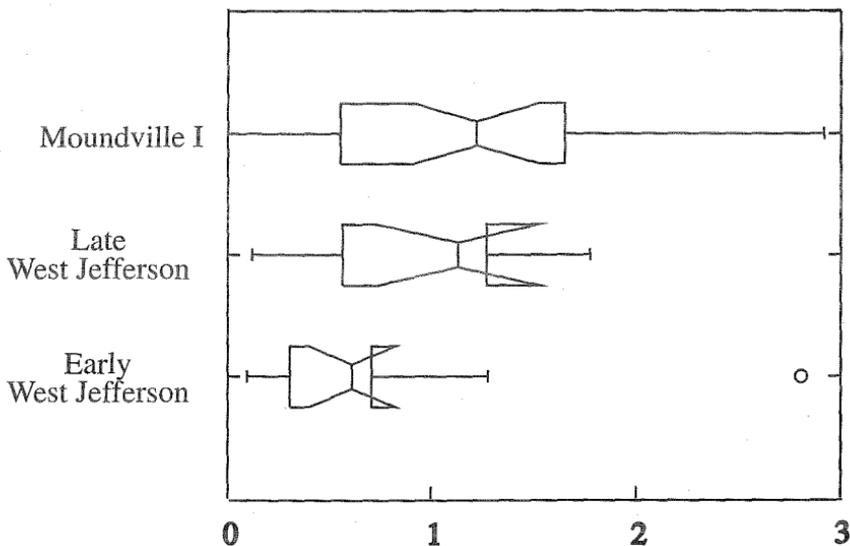
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these plants, however, were neither as abundant nor as frequent in the samples as corn and nut remains.

People relied on the same resources in West Jefferson and Moundville I times and at the center and on farmsteads. Nevertheless, there were significant differences in the abundances of the three major resources in different settings. In the following section, we will first describe temporal patterns of food plant distribution seen in the West Jefferson data and the Moundville I data from Moundville. Then we will describe spatial patterns of plant use by examining data from West Jefferson contexts and from Moundville I contexts at Moundville and the two farmsteads.

The patterns of plant abundance are illustrated here with boxplots (Tukey 1977; Velleman and Hoaglin 1981:65-81; Wilkinson 1990:165-71), which are used to display and compare the frequency distributions of counts for different taxa. Each boxplot consists of several elements whose positions along a scale correspond to key points in the distribution: (a) the vertical line within the box indicates the median; (b) the vertical lines at either end of the box mark the "hinges," which approximate the 25th and 75th percentiles; (c) the lines extending outward from either end of the box, commonly called "whiskers," encompass the tails of the distribution; and (d) the free-standing asterisks and circles beyond the whiskers indicate anomalous "outliers" and "far outliers," respectively. In addition, each boxplot is marked by a "notch," where the box is constricted like an hourglass. The notch defines a simultaneous 95% confidence interval around the median; if the notches of two boxplots on the same graph do not overlap, then the sample medians are significantly different at the 0.05 level. Sometimes, when the notch extends beyond the hinge, the box acquires a curious appearance, as though it were bent back on itself; this does not change the way in which the graph is interpreted.

We should also note that, for present purposes, the distributions being compared are not of raw counts, but rather of counts that are modified in two ways. First the raw counts are divided by the total weight of plant remains from the same provenience, thereby producing "standardized" ratios that correct for differences in gross sample size. Then the standardized ratios are reexpressed computing their natural logarithms (adding one before taking the logarithm permits inclusion of samples that have counts of zero). This mathematical transformation has a number of advantages, not the least of which is that it "normalizes"



Corn Cupules

Figure 6.3. Boxplots comparing relative abundances of corn cupules in West Jefferson and Moundville I contexts. Values plotted are standardized counts reexpressed as natural logarithms (see text).

skewed distributions and thereby facilitates the visual (and statistical) recognition of patterns in the data (Doran and Hodson 1975:19, 49-50, 127; Velleman and Hoaglin 1981:48-55; Cleveland 1985:104-14). Thus our standardized, log-transformed counts are calculated as $\ln[(c/w) + 1]$, where, for each provenience, c is the count of the taxon in question and w is the weight in grams of all plant remains. These are the values plotted in all of the graphs that follow.

When we examine the relative abundance of corn cupules in different temporal contexts, we see that the intensity of corn production changed over time (figure 6.3). There was a significant increase in the production of corn from early to late West Jefferson times. On the other hand, levels of corn production appear comparable in late West Jefferson villages and from late Moundville I deposits at the paramount center.

While corn production increased, procurement of nuts decreased. The timing of this change, however, was different from that of corn

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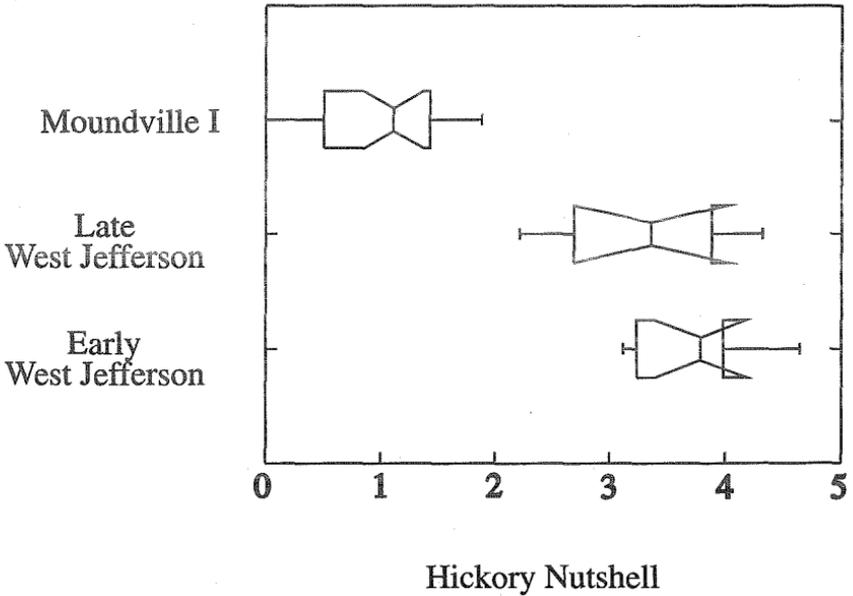


Figure 6.4. Boxplots comparing relative abundances of hickory nutshell in West Jefferson and Moundville I contexts. Values plotted are standardized counts reexpressed as natural logarithms.

production. Within the West Jefferson phase hickory-nut use was relatively stable (figure 6.4). Between late West Jefferson and Moundville I there was a dramatic drop in hickory-nut use. The same pattern can be seen in acorn use, although the decrease in acorn use was not as extreme as that of hickory nut (figure 6.5).

The plant data from West Jefferson and Moundville I contexts indicate that, between A.D. 900 and 1250, people in the Black Warrior Valley altered their subsistence strategies. The early West Jefferson assemblage suggests an economy based on foraging combined with small-scale gardening; people grew some corn and small quantities of native seed crops, but their primary plant foods were nuts. The increase in corn production during the West Jefferson phase and the decrease in nut procurement between the West Jefferson and Moundville I phases suggest an economy in transition. By the time Moundville had achieved political dominance in the valley, an economy focused on corn agriculture seems to have been firmly established (Scarry 1986).

At this point we need to make a caveat. We are monitoring changes

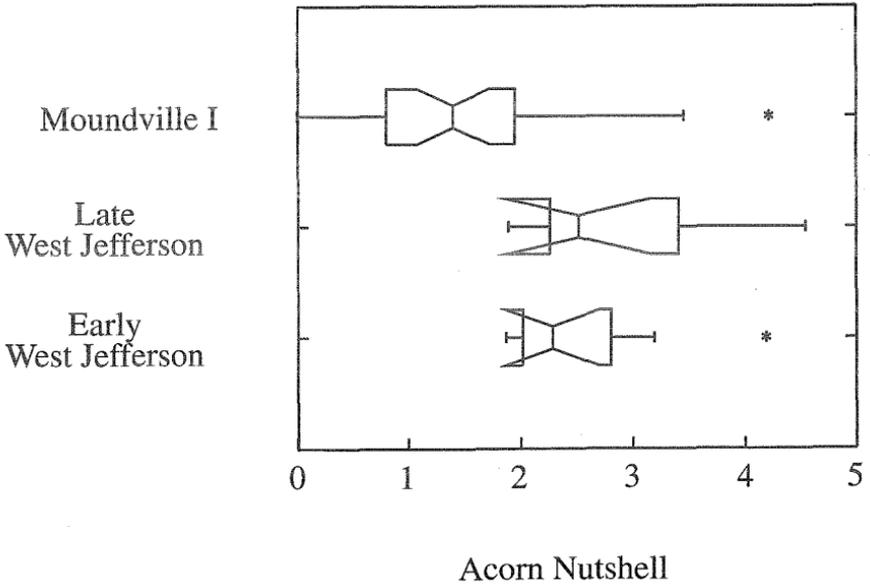


Figure 6.5. Boxplots comparing relative abundances of acorn nutshell in West Jefferson and Moundville I contexts. Values plotted are standardized counts reexpressed as natural logarithms.

based on differential quantities of corn cupules and nutshell fragments. These are inedible by-products. They may have been discarded when food was prepared for consumption. If so, presumably they would be deposited near where the food was cooked and served. But cobs and nutshells may also have been discarded when food was processed for storage or transport. Edible portions—shelled corn, hickory oil, or acorn meal—could have been transported, stored, and consumed elsewhere. In other words, we are measuring levels of production and processing, not consumption.

This distinction between processing and consumption becomes important when we add the farmsteads to the picture. The boxplots in figure 6.6 compare quantities of corn cupules from West Jefferson villages, the Moundville-era farmsteads, and the late Moundville I deposits at Moundville. The farmsteads have significantly more corn cupules than the West Jefferson villages *and* significantly more cupules than the deposits at Moundville.

The quantities of nutshells recovered from the various settings also

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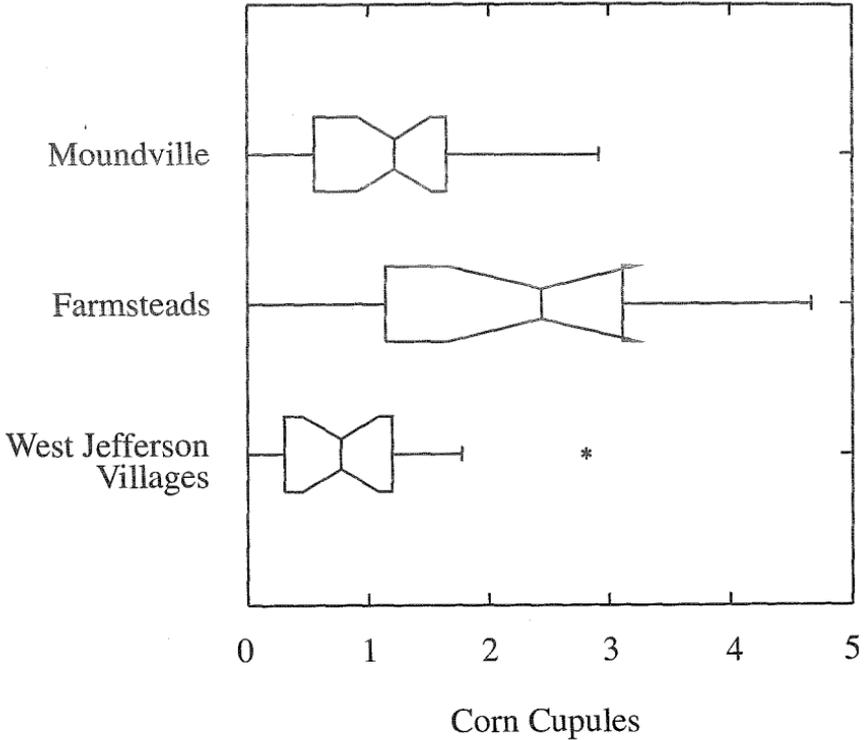


Figure 6.6. Boxplots comparing relative abundances of corn cupules at Moundville, the farmsteads, and West Jefferson villages. Values plotted are standardized counts reexpressed as natural logarithms.

show interesting patterns. The farmsteads yielded quantities of hickory nutshell that were roughly comparable to those from West Jefferson villages and significantly greater than those from Moundville (figure 6.7). The pattern is similar for acorn nutshell: West Jefferson villages and the farmsteads yielded similar quantities of acorn nutshell, and at both there were significantly more acorn nutshells than at the paramount center (figure 6.8).

In sum, people at the farmsteads were producing or at least processing more corn than their predecessors in the West Jefferson villages and more corn than their elite contemporaries at Moundville. The residents of the farmsteads were also procuring and processing nuts at levels comparable to those of their predecessors and greater than those of their elite contemporaries.

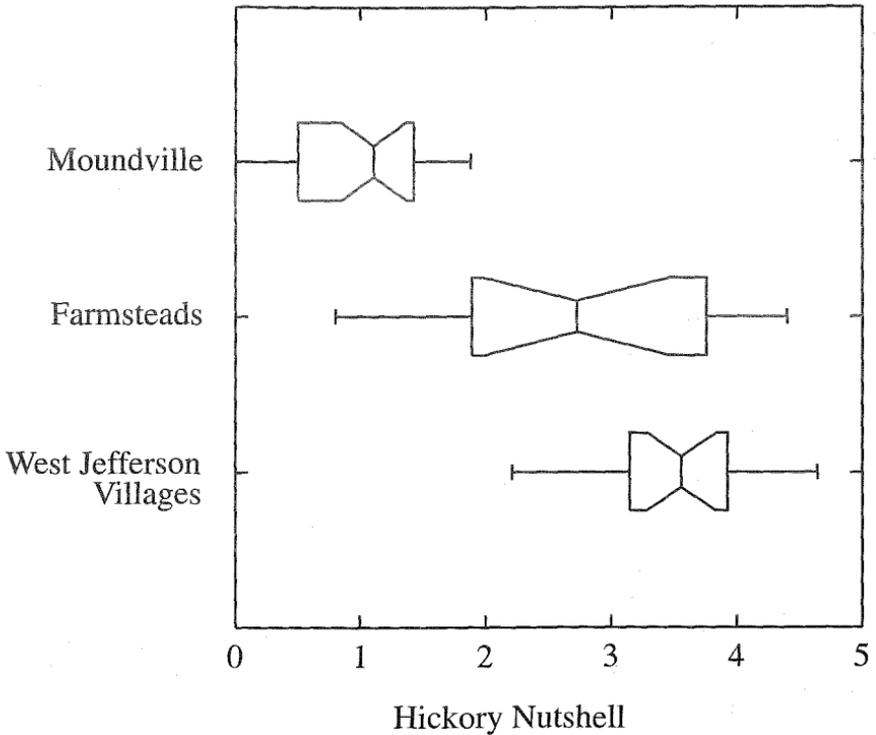


Figure 6.7. Boxplots comparing relative abundances of hickory nutshell at Moundville, the farmsteads, and West Jefferson villages. Values plotted are standardized counts reexpressed as natural logarithms.

If we allow that foods may have been processed and consumed at different locations, then we can offer the following interpretation for the patterns we have described. The relatively low quantities of food by-products at Moundville may be an indication that the residents of the farmsteads were sending provisions to the residents of the paramount center. That is, not all of the food produced or procured by the residents of the farmsteads was consumed by them. Rather some may have been partially processed to reduce its bulk and then sent to the subordinate and paramount centers. Several studies have indicated that preferred cuts of venison were provisioned from farmsteads or subordinate centers to the paramount center (Michals 1990; Scott 1981; Welch 1991). The larger quantities of corn cupules and nutshells at the farmsteads could indicate that plant foods were also being brought to the centers.

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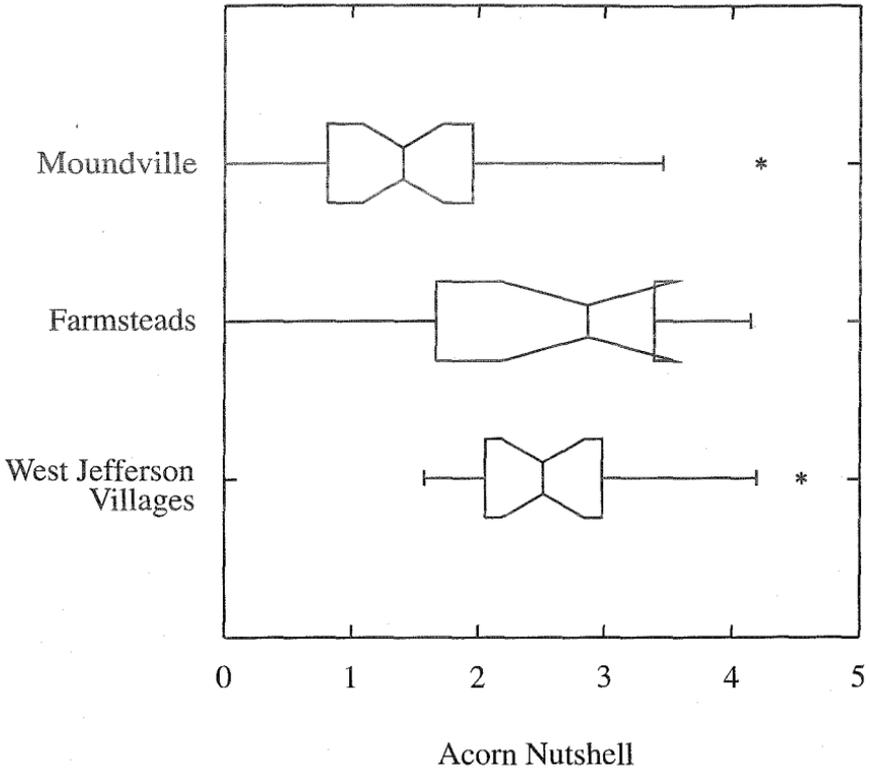


Figure 6.8. Boxplots comparing relative abundances of acorn nutshell at Moundville, the farmsteads, and West Jefferson villages. Values plotted are standardized counts reexpressed as natural logarithms.

If the residents of farmsteads provisioned the center, what were the economic and social relations that structured the flow of food? In a paper on the economic significance of Mississippian farmsteads Knight and Solis (1983) cited ethnohistoric accounts to address several issues relevant to this question. They noted that the links between people were not just those of elite to commoner or governors to governed. People were also bound by complex networks of kinship and obligation. This being the case, some food sent to the center may well have been channeled by, and perceived as part of, relations between kinfolk rather than being tribute paid by commoners to the elite.

Knight and Solis (1983) also called attention to the dual modes of crop production that existed among Native Americans in the Southeast. Families planted, cultivated, and harvested crops destined for their own

lards. They also contributed labor to tending communal fields whose harvests were stored in granaries that were under the supervision and control of a chief.

Some communal fields were probably located at Moundville and its subsidiary centers where they were under the watchful eyes of the chiefs and their associates. It seems equally plausible, however, that some communal fields were located in the hinterlands. Farmsteads form loose aggregates in areas of good soils. Certainly it would have been expedient to locate communal fields where people could tend them without having to travel far or neglect their family fields. Such a practice would not only be labor efficient, it would also reduce the risk of poor communal harvests by spreading fields throughout the microenvironments in the valley.

How does this translate to the patterns we see in the plant data? Quite simply. If corn from hinterland communal fields was shelled before it was transported to the centers for storage or distribution by the chiefs, then quantities of corn cupules would be higher at farmsteads than in elite residences at the center.

Impact of the Moundville Polity on the Landscape

This book is organized around the theme of human-modified environments and agricultural evolution. We have described an evolving agricultural economy, but we have said little about its impact on the environment. Nevertheless, it should be obvious that the changes we have described did affect the landscape and how people related to it.

The 40 km portion of the Black Warrior Valley in which the Moundville polity was located is a complex mosaic of floodplain swamps, levees, and adjacent terraces surrounded by gently rolling hills. The best agricultural soils are on the levees and terraces; the terraces and uplands, when undisturbed, support mixed hardwood and pine forests in which hickory nuts and acorns abound (Scarry 1986).

At the beginning of the West Jefferson phase, we can envision people following a shifting-cultivation strategy. Villages and gardens would have been periodically relocated within a landscape composed of swamps, woodlands, and old village or garden sites in varying stages of succession. As old garden plots lay fallow, they would be invaded by numerous plants. Among the early colonizers would be maypops (*Pasiflora incarnata*), blackberry (*Rubus* sp.), and other useful plants. Some-

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what later, persimmon (*Diospyros virginiana*) and plum (*Prunus* sp.) trees might invade the old plots. These, and other fruit-bearing trees, might well have been left to produce when people recleared the plots for planting. Since nuts were most abundant in the rolling uplands, nut resources would have been little affected by garden clearing and other human activities on the floodplain.

As crop production increased in the late West Jefferson and Moundville I phases, fallow cycles may have been shortened. This would result in there being more land in early stages of succession. Bottomland soils, whose fertility was periodically renewed by flooding, might even have been continuously cropped. In either case, there would be a change in the relative abundance of wild fruits. Fruit from low-growing herbs and woody plants, such as blackberries and maypops, could have gained a foothold in idle fields or around field edges. In contrast, fields might have been replanted before shrub and tree fruits could become established.

The concentration of people at Moundville during the Moundville I phase may well have had a more profound impact on the landscape. Moundville is located on a high terrace that abuts the uplands. The innate fertility of the soil is very high, but the terrace is above the level of most, if not all, floods. If the land on the terrace was cropped continuously, or on a short-fallow regime, for the century or two that population was concentrated at Moundville, yields from household and communal fields probably declined. Under such circumstances, it is possible that people found it increasingly difficult both to supply their basic needs and to fill the chief's granaries with the harvests from the land around Moundville. Tribute collected as a tax on farmstead production or communal fields located in the hinterlands could have mitigated local shortages.

The concentration of people at Moundville and the construction of the civic-ceremonial center itself could have had impacts on the landscape beyond those created by the agricultural economy. Clearing fields would have had little effect on the availability of nuts since the uplands were nearby. However, when the population was concentrated at Moundville, per capita consumption of nuts may have decreased if large numbers of people tried to forage in the forests near Moundville.

The demand for wood for fuel and construction purposes must also have been high. Pines with their straight trunks and rot-resistant wood might have been in particular demand for building the palisade and

other large public structures. The palisade was rebuilt at least three times (Scarry 1995; Vogel and Allan 1985). On the basis of the size and spacing of the palisade timbers, we estimate that a minimum of 10,000 logs would have been used each time the fortification was rebuilt. Even if the entire palisade was not rebuilt each time repairs were made, harvesting enough timbers for the palisade and other structures would have opened the forest canopy and perhaps altered the composition of the upland forests near Moundville.

In closing we would like to suggest that not all the changes in the landscape were a result of economic activities. Today, yaupon holly (*Ilex vomitoria*) is one of the dominant shrubs in the ravines and thickets at Moundville. Yaupon is native to the coastal areas of the Southeast, but the plant is found at a few locations well away from the coast. Fifty years ago the botanist Roland Harper (1944) wrote, "Away from the coast it is scattered so erratically as to suggest that it might have been planted by the Indians, who brewed a beverage from its leaves." The beverage to which he referred was the black drink that played a central role in many civic and ceremonial gatherings. It seems to us that Harper was likely right. Moundville's residents probably did indeed plant and tend the yaupon so that they could have ready access to the leaves of this ritually important plant.

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