CRAFTING IN THE COUNTRYSIDE:

A COMPARISON OF THREE LATE PREHISTORIC

NONMOUND SITES IN THE BLACK WARRIOR RIVER VALLEY

by

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ABSTRACT

Centralized control of resources by elites has been identified as the basis of institutionalized inequality at Moundville, in other Mississippian societies, and in other complex societies. Some archaeologists challenge the claim that there were centralized economic controls in Mississippian societies. This thesis compares the lithic assemblages of three late Moundville III-early Moundville IV phase nonmound sites in the Black Warrior River Valley to assess the Moundville political-economy model's expectations concerning the distribution of exotic stone and craft production locales. It is found that neither exotic raw material nor the production of socially valued goods such as pendants and paint palettes was confined to the regional center during the latter part of the chiefdom's history. This discovery is interpreted in terms of a decentralized ritual economy.

CHAPTER 1

INTRODUCTION

This thesis compares the lithic assemblages of three late Moundville III to early Moundville IV phase nonmound sites, the Powers site (1Ha11), the Fitts site (1Tu876), and the Pride Place site (1Tu1), in order to assess the Moundville political economy model (Welch 1991) which proposes that elites gained power by controlling access to exotic raw material and valued goods. As centralized control of resources by elites has been identified as the basis of institutionalized inequality at Moundville, in other Mississippian societies, and in other complex societies (Earle 1997), anthropologists and archaeologists, in particular, are not strangers to debates over degrees of political economic centralization.

In recent years, Southeastern archaeologists have recognized the significant organizational diversity of Mississippian societies and, therefore, have striven to develop more nuanced views of individual polities like that of Moundville (cf. Blitz and Lorenz 2006; King 2006; Pauketat 2007; Wilson 2005). In this spirit, this thesis considers data made recently available in an attempt to explore alternatives to political economic explanations of the social mechanisms that fueled production, exchange, and consumption; namely, I consider agency models that propose that production and consumption were decentralized across social segments of a community as part of a ritual mode of production (e.g., Spielmann 2002).

Including this introductory chapter, this work contains six chapters. Chapter 2 presents a brief history of the chiefdom concept, especially as it relates to the prehistoric chiefdoms of the southeastern United States, in addition to an overview of proposed economic stimuli in middle-range societies with special focus on the Moundville chiefdom and its political economy model. Chapter 3 begins with a discussion of the importance of humble sites and commoner households in reconstructing the past, then introduces the three nonmound sites that this study spotlights. Chapter 4 is a discussion of the kinds of materials that make up Black Warrior Valley lithic assemblages followed by an outline of the quantitative and qualitative laboratory methods employed in this research. Chapter 5 presents data garnered through implementation of the methods outlined in Chapter 4. Finally, Chapter 6 forwards a preliminary discussion of the significance of my findings in light of the expectations of the Moundville political economy model.

CHAPTER 2
CHIEFS, EXCHANGE, AND CRAFT SPECIALIZATION: THEORETICAL BACKGROUND AND RESEARCH PROBLEM

This chapter examines the importance of economy in chiefdom studies, specifically craft production and political economy models. In order to place studies of Moundville and other Mississippian societies in their broader context and to portray the enduring centrality of statements relating to economy in chiefdom studies, it is necessary to begin with an overview of the chiefdom concept from its beginnings to recent years. Focus then turns towards proposed economic stimuli in chiefdom-level societies with emphasis on centralized versus decentralized perspectives of pre-industrial, pre-state economic systems. In particular, I address the proposed political economy model for the Moundville polity that has held sway since its publication by Paul Welch in 1991. In that section, I place emphasis on the role of craft production and the distribution of nonlocal material in the Moundville polity, the focus of this thesis. Next, I provide a succinct description of how I will use lithic assemblages from three nonmound rural sites to investigate some of the expectations of the Welch model. In closing, I ask several questions that this thesis hopes to answer.

The Changing Chief: Development of the Chiefdom Concept

Since its introduction as an anthropological concept in the late 1940s (Steward 1948) and subsequent placement at the point of articulation between egalitarian and stratified societies (Service 1962), the chiefdom has been the focus of much scholarly attention. Though chiefdoms may, in fact, be archaeological delusions (Pauketat 2007), anthropologists and archaeologists have constructed increasingly complex definitions and models of chiefdom-level societies, such that research has progressed to matters more theoretical than taxonomic. The issue of how a subset of society gained and maintained authority has become central to chiefdom studies with many interpretations situating aggrandizers at nexuses of production and exchange. Spurred by recent research highlighting the diversity of chiefdom organization (Earle 1991), however, archaeologists have begun to question the degree to which chiefdoms were politically centralized.

Traditionally, chiefdoms have been classified as societies where “leadership is centralized, statuses are arranged hierarchically, and there is to some degree a hereditary aristocratic ethos” (Service 1975:74). Service (1962) argued that chiefs functioned as managers of economic and subsistence resources, pooling and redistributing goods produced in various ecological niches. Service’s underlying assumption was, of course, that domestic units were economically dependent on each other. Importantly, redistribution for Service was more than the recombination and reallocation of subsistence goods; it was a means of coordinating specialized producers.

Service expected such a system to develop among cooperating communities settled throughout ecologically heterogeneous regions. However, subsequent catchment analysis of some regions in which chiefdoms developed found that all settlements were more or less equal in their potential to exploit local floral and faunal resources. Indeed, Earle’s (1977) assessment of Hawaiian chiefdoms revealed that domestic units were self-sufficient enough to meet subsistence needs, and the same can be said of populations that were once settled throughout the Black Warrior River Valley (Peebles and Kus 1977;

Welch 1991:80). Thus, by the mid-1970s, Service's notion of chiefdom economies as regional systems of resource redistribution had fallen out of favor.

The concept of redistribution, though, was not thrown out. Instead, it was reinterpreted as an elite strategy to acquire political power. In Earle's (1977:217) reassessment of Hawaiian chiefdoms, "the redistributive hierarchy functioned primarily in the special context of financing the elite stratum and its political activities" (Earle 1977:217). Commoners were viewed as being granted certain rights (e.g., access to irrigated fields) in exchange for their labor and produce which the chiefs used, in turn, to improve infrastructure, organize raids, and commission iconic chiefly regalia. Wright (1984) elaborates, saying that "actual distribution is characteristically to lesser figures within the chiefdom, and the redistributed items are often goods made by specialists." From this perspective, chiefs were seen not as benevolent managers, but as individuals set apart from the masses from whom they extracted valued resources for their own benefit. This concept of the aggrandizing chief has dominated chiefdom literature ever since.

Inspired by Earle's (1977) depiction of Hawaiian chiefdoms, Peebles and Kus (1977) employed a cybernetics model to discuss the archaeological correlates of ranked societies worldwide, and in the Moundville chiefdom in particular they perceived a fundamental gap between producers and politicians. Domestic units were seen as capable of provisioning nothing larger than themselves, and, aside from lending their labor, they played little part in politics. As for Mississippian societies, it was elites (and only elites) that could organize and muster the resources necessary for mound construction. Following Peebles and Kus's lead, other Southeastern archaeologists have since placed emphasis on political structure, often at the expense of more in-depth explanations of Mississippian economics. Consequently the elite-commoner dichotomy has become embedded in chiefdom literature (see Peebles and Kus 1977; Steponaitis 1978; Welch 1991)

Peebles and Kus's (1977) separation of primary producers from politics had a profound effect on subsequent chiefdom research, especially in the southeastern United States where Spanish ethnohistoric documents seem to substantiate their conclusions. These accounts (Clayton et al. 1993; Hudson 1997) describe powerful chiefs who exacted tribute from loyal subjects and lived in mounded towns and village - locales that mirror the archaeological record. When dealing with such accounts, however, one must be mindful of the fact that the Spanish, in referencing their own society, employed a feudalistic vocabulary in their descriptions of the political and economic relationships between the populations they encountered. Thus, the ethnohistoric record may reflect Spanish ethnocentrism as much as or more than the realities of late prehistoric Mississippian life. In using the ethnohistoric record to bolster their claims, Southeastern archaeologists have kept these and other considerations in mind (Anderson 1994; Blitz 1993; Muller 1987; Pauketat 1994; Steponaitis 1991).

In the ten years following Peebles and Kus's discussion of archaeological correlates of rank society and chiefdom political organization, little more than cursory attention was paid to economic change and diversity, as most researchers considered economic systems to be embedded in politics, and thus, implied (Brown et al. 1990). Southeastern archaeologists did not ignore prehistoric exchange networks, but there were few systematic approaches to Mississippian modes of production and exchange prior to the 1990s. Thus, while analysis of mortuary assemblages made it clear that certain individuals enjoyed special access to certain kinds of prestige goods (e.g. Peebles 1974), the precise mechanisms and contexts of exchange and manufacture remained vague.

Archaeologists now recognize that what may have been true for one chiefdom may not have been true for another, an organizational variability that, in part, makes "chiefdom" a flawed concept (Pauketat 2007). In response, Southeastern archaeologists have refined their evolutionary categories, the most influential being Steponaitis's (1986) simple-complex chiefdom model, a dichotomy rooted in settlement patterns. Essentially, a chiefdom is "complex" if it exhibits two decision-making levels above the household, to be determined based on the presence of a regional center featuring multiple mounds, secondary single mound centers, and nonmound farmsteads (i.e., a three-tiered settlement pattern). The paramount chief of a complex chiefdom was fully removed from production and appropriated agricultural surpluses and craft items according to his will. Administrators situated at secondary centers acted as middlemen, funneling goods from domestic units in the hinterlands to the chief and his family at the local center. "Simple" chiefdoms, on the other hand, are evidenced by two-tiered settlement hierarchies. In other words, they lack secondary administrative centers. Thus, chiefs in simple chiefdoms continued to engage in part-time agricultural production; the extent to which they could capitalize on domestic labor was relatively limited (Earle 1991).

After closer examination of mound centers and secondary sites throughout the Southeast, some archaeologists question whether many Mississippian chiefdoms were ever "complex" (Blitz 1999; Blitz and Lorenz 2006; Cobb 2000; Muller 1997). Blitz (1999), for example, found that not all sites were occupied contemporaneously and that a “fission-fusion” process whereby political factions aggregate and disperse more accurately accounts for the archaeological record. This process has profound implications for theories concerning Mississippian economies. For instance, if political factionalism fueled regular migrations, then the potential for one person or group to control production, exchange, or distribution would have been limited.

Southeastern archaeologists remain divided on the mechanisms of Mississippian economies, however, with those in favor of centralized political economy models on one side (Anderson 1994; Pauketat 2004; Pebbles and Kus 1977; Welch 1991) and those supporting decentralized models on the other (Blitz and Lorenz 2006; Byers 2006; Cobb 2000, 2003; Milner 1998; Muller 1997; Saitta 1994). Divergent models for the organization of production within chiefdoms often lie at the heart of theories offered by both sides of this divide and chiefdom studies in general, though perhaps this circumstance is the result of more than differences in opinion. Instead, divergent views may reflect real diversity in Mississippian economies. In other words, there may be considerable range or degrees of control due to different developmental histories, organizational variation, and polity size (e.g., Wilson et al. 2006)

Economic Stimuli in Chiefdom-Level Societies

Archaeologists have offered several explanations of what drives economic production in chiefdom-level societies. In Mississippian archaeology, political economy theories whereby elites gained power by controlling or restricting access to resources fundamental to social reproduction (e.g., food, labor, and craft production) have held the most sway. Any assessment of these theories, therefore, must be based upon “detailed qualitative information about the loci of production and use or consumption of goods” (Welch 1991:13). I will base my investigation of Moundville’s economy upon this principle.

In recent years, much of what has been said about craft production has been couched in terms of specialization (Cobb 2000). Evans (1978:115) defines craft specialists as those few individuals within a community who “devote some of their productive time to the manufacture of [crafts]” so that they “must obtain all or part of their subsistence goods through exchange for their [products].” Since Evans’s seminal study, archaeologists have been careful to operationalize their definitions of specialization (e.g., Costin 1991; Muller 1984; Rice 1981; Tosi 1984). They have all, however, retained Evans’s (1978) notion of the specialist household as dependent on others for basic subsistence.

Evans (1978) outlines six archaeological manifestations of craft specialization including: 1) workshops, 2) toolkits, 3) storage facilities, 4) resource exploitation of particular raw materials, 5) exchange and trade for the distribution of craft items and the acquisition of raw materials, and 6) differential distribution of craft goods at sites and within settlement systems. Based on Evans’s criteria, Southeastern archaeologists have concluded that in Mississippian societies production for exchange primarily took place at the community or household level (Cobb 2000), that is, most objects were not crafted by elite-sponsored specialists or in discrete workshops. For all of these criteria to manifest archaeologically at a single Mississippian farmstead is unlikely given that hinterland farmers most likely engaged in craft production only intermittently. Southeastern archaeologists do, however, often encounter tool kits and particular resource exploitation in such contexts. For example, in the prehistoric Central Mississippi River valley shell bead manufacture was apparently widespread as evidenced by nonmound sites that have yielded bead blanks, partially manufactured beads, and chert microdrills that were used to perforate beads (Koldenhoff 1990; Pauketat 2004; Prentice 1983). They recognize that households engaged in relations of production, exchange, and consumption with other households both near and far; elucidating the social and political contexts of these relations, however, has proved difficult.

That being said, it can be safely assumed that the exchange of valuable objects was important in the structuring of horizontal and vertical relations in Mississippian societies. Archaeologists continue to debate the various stimuli behind specialization and economic intensification, offering theories entrenched in concepts such as population and resource imbalance and risk avoidance (Douglass 2002; Service 1962), aggrandizing elites (Earle 1997; Renfrew 1982; Welch 1991), or ritual modes of production (Spielmann 2002).

In an effort to better understand the kind of goods employed in system-constituting transactions, some archaeologists have attempted to break the rigid elite good/nonelite good dichotomy. For example, Lesure (1999), following Weiner (1985), distinguishes between two broad kinds of valued goods, inalienable and alienable. Inalienable objects are those that have assumed unique value based on their "exclusive and cumulative identit[ies] with…a particular series of owners through time" (Lesure 1999:25). They are likely highly specific and very scarce objects, typically discovered in isolation. In the Moundville chiefdom and beyond, some sandstone paint palettes probably achieved a high degree of inalienability. Alienable objects, on the other hand, are those crafted specifically for use in exchange. They are more generalized and more common than inalienable goods. Lesure (1999:31) suggests that ancient peoples may have hoarded alienable objects for later use. Drilled shell beads have been found in storage pits at Cahokia and other Mississippian sites (Trubitt 2000:678; Yerkes 1983:512), suggesting they were relatively alienable objects in these societies.

Despite their differences, both inalienable and alienable objects are involved in exchange, especially in bridewealth and mortuary transactions, at times of birth, and during other life crisis ceremonies (Lesure 1999). Indeed, some have pointed to the elite control of valuables involved in these transactions as a basis of emerging inequality (Collier 1988; Friedman and Rowlands 1978; Godelier 1991; Meillassoux 1981; Welch 1991). Thus, to say that elites at Moundville controlled the distribution of such goods (*a la* Welch 1991) is to delegate them immense power. Because such items are critical for social reproduction, Spielmann (2002) dubs them "socially valued goods." Alienability is not her primary concern. Rather, she argues that in small-scale societies, ritual performances and social obligations compel production in much the same way that a state-level elite may define the nature, timing, personnel, and magnitude of production. In other words, craft specialists in small-scale societies are "attached" to the ritual context itself. As Spielmann (2002:197) puts it, "ritual does not simply regulate work; it demands work." This ritual mode of production has been documented in diverse societies worldwide and has featured prominently in classic anthropological studies such as Roy Rappaport's *Pigs for the Ancestors* (1968) and Bronislaw Malinowski's *Argonauts of the Western Pacific* (1922).

In small-scale societies, socially valued goods are typically crafted at a community scale. Costin (1991:8) defines this level of specialization as consisting of "autonomous individual or household-based production units, aggregated within a single community, producing for unrestricted regional consumption." The scale of production in any single community hinges upon several interrelated factors, including the scale of demand, the nature of use, the degree to which the materialization of ideology is controlled, and the context in which people aggregate (DeMarrais et al. 1996; Spielmann 2002). Ethnographers and archaeologists who have studied crafting communities often discover that just a few individuals working in their spare time can and do produce enough of their specialized product to meet extraordinary demands. For instance, in extreme southwestern Illinois there is an immaculate rural Mississippian site, Dillow's Ridge, that Cobb (2000) argues was once occupied by a small group of primary producers who engaged in part-time crafting of chipped stone hoes. With Mill Creek chert quarries close at hand, the Dillow's Ridge community, not to mention the other ten sites nearby with similar evidence of hoe production, produced an estimated 432 hoes per year for roughly 300 years (Cobb 2000). Further, mortuary evidence from a nearby affiliated mound site does not indicate the presence of managerial elite.

The economy of any society, small or large scale, is never driven by single factors. Rather, it is a complex and sometimes nebulous web of horizontal and vertical relations, fair and exploitative exchanges, all of it underscored by political, ritual, and societal motivations. In our quest to better understand the multifaceted entity that is the non-industrial, pre-state economy under discussion, we must be aware of the inherent complexity of economic systems, their multiple realms, and the various relationships that they maintain.

Craft Production and the Moundville Political Economy

Occupied from A.D. 1120 to the 1500s, the Moundville site served as a civic-ceremonial center for sites scattered throughout the Black Warrior River Valley below the fall line (Figure 1). Featuring twenty-nine earthen mounds, an extensive, artificially-flattened plaza, and a mile-long palisade, the Moundville site was by far the largest indigenous settlement in the valley and one of the largest ever to exist in the Mississippian Southeast. Based on its apparent three-tiered site hierarchy, Steponaitis (1978) classified Moundville as the capital of a complex chiefdom, an interpretation he and Knight have since elaborated with a detailed history of the site's development (Knight and Steponaitis 1998).

Welch (1991) devised a political-economy model for the polity rooted in Steponaitis's (1978) classification (Figure 2). The model proposes that elites gained power by controlling access to nonlocal materials, especially highly crafted artifacts of non-local materials, and that production and consumption evidence of these artifacts will be largely restricted to elite contexts at Moundville (Welch 1991). Consequently, the model produces expectations about the distribution of highly crafted stone artifacts at sites in the three-tiered settlement hierarchy identified for the Moundville polity (Welch 1991:176-178). First, non-utilitarian artifacts, variously labeled in Moundville archaeology as superordinate artifacts (Peebles 1974), status goods (Blitz 1993), prestige goods (Welch 1991), or display goods (Marcoux 2000, 2008), are unexpected in nonelite contexts such as small sites without mounds, as are the associated production tools and debris. Second, finished greenstone celts (axes) acquired from elites are the only non-local stone artifacts expected at small sites without mounds; artifacts and debris of nonlocal stone are expected to be absent. Third, a limited subset of non-local finished craft goods with little or no associated production debris will be found at local centers, restricted to elite contexts as a result of rewards provided by paramount elites at Moundville (Welch 1991:56-57).

Welch's model is the primary statement about Moundville's economy. However, in recent years, some non-local stone artifacts and production debris have been found in non-elite contexts at Moundville and smaller sites, contrary to the model's expectations (Blitz 1993; Ensor 1993; Maxham 2000; Myer 2003; Wilson 2001). For example, in his evaluation of roadway excavation data, Wilson (2001) found that the production of items made of non-local greenstone was not at all restricted to elite contexts. Nonelites clearly had access to the tools and material required to make a range of goods, both utilitarian and otherwise, including celts, chisels, pendants, and even small palettes. For Welch (1991), elite control of the manufacture and distribution of greenstone celts bound subsistence produced economically and politically to administrators at Moundville, but Wilson (2001) failed to find evidence that celts were crafted anywhere at the paramount center. Such findings open the door to alternative explanations.

As discussed above, in many small-scale societies "craft production…[is] supported not by elites but by numerous individuals as they fulfill ritual obligations and create and sustain social relations" (Spielmann 2002). In Spielmann's concept of a ritual

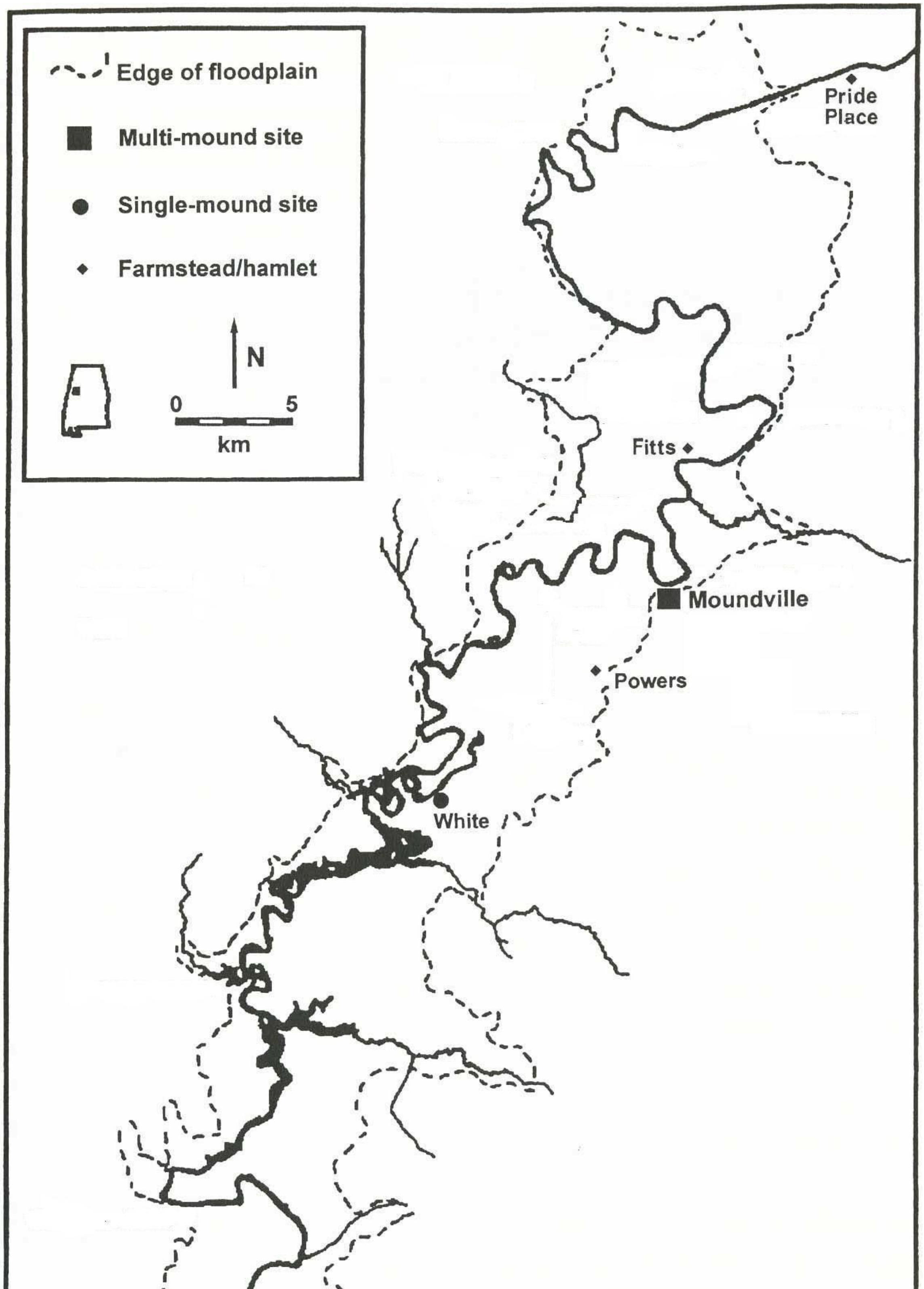

Figure 1. Map of the Black Warrior River Valley showing archaeological sites with late Moundville III-early Moundville IV components mentioned in the text (modified from Welch 1991).

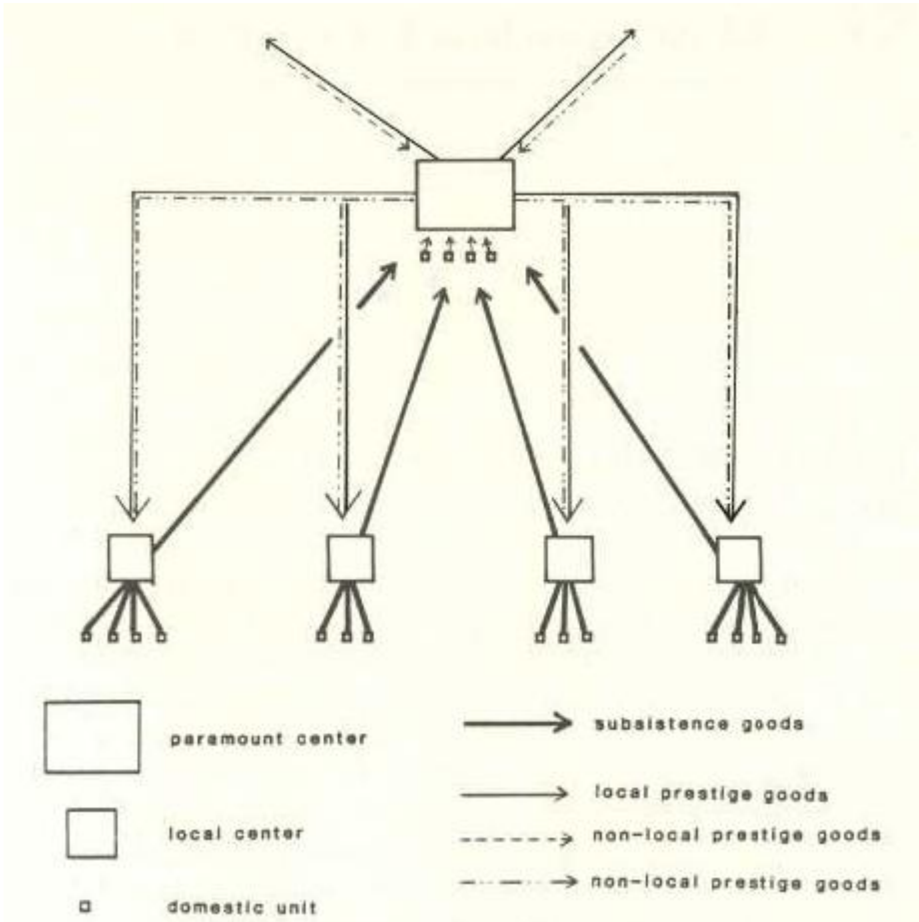

Figure 2. Schematic of the Moundville political economy model (Welch 1991:180).

economy, power does not derive from the control of valued resources; it is ideologically based, structured by kinship and the control of ritual knowledge. The continual negotiation of meanings, values, and power among and across social segments fuels production, such that it is embedded in ritual and hedges monopolistic control by any one kin group or sodality. If this is the case for Moundville, then the associated debris should not be restricted to elite contexts, but should be distributed throughout the valley among diverse households according to the ritual and social obligations of each.

At the core of these models are differing views of sociopolitical organization. Political-economy models emphasize vertical relationships and posit a pyramidal social hierarchy. Political-economy theorists focus on elite control of resources, a circumstance that, at least in the Moundville chiefdom, has resulted in an overrepresentation of archaeological data from assumed elite contexts, such as mounds. Ritual economies, on the other hand, place more emphasis on horizontal relationships rooted in heterarchical sociopolitical structures, implying much wider access to the products of craft production across social segments (Spielmann 2002; Wells 2006). In a ritual economy, social and ritual obligations bind economically self-sufficient households closer together in reciprocal exchanges.

Evaluating the Moundville Political Economy Model: Lithic Resources and Craft Production at Rural Sites

A complete investigation of Moundville's economy is not possible as so much of the material record has disintegrated; though even if the material had survived, an economy is such a complex and multifaceted part of any society that an investigation of it beyond the scope of a single study. Thus, I will confine this thesis to craft production, relying upon evidence from nonmound sites that date to the late Moundville III-early Moundville IV phase.

Because they have the advantage of being almost indestructible, lithics offer one of the best measures of production on Mississippian sites (Cobb 2000; Whittaker 1994). By analyzing material, function, and use wear present in any lithic assemblage, the archaeologist is capable of reconstructing a convincing picture of production activities (insofar as they involved stone) at any one location, and, more importantly, can use these data to test models like those outlined above (Ehrenreich 1991; Pauketat 1997; Pope 1989; Yerkes 1983).

In the Moundville region, prehistoric populations relied on both local and nonlocal lithic sources. Tuscaloosa gravel, by far the most dominant chert in the region, occurs in the form of tiny pebbles to fist-sized nodules that, before the damming of the Black Warrior River, amassed in extensive gravel bars that would have been easily accessible to prehistoric populations (Michael Gilbert 2007, personal communication). Once heat-treated, it is ideal for producing the expedient tools used widely by households in the valley. However, stone workers in the Black Warrior River valley would have required larger pieces of more highly tractable stone to produce large formal tools. For this, they needed access to stone from more distant sources.

Welch (1991) proposes that part of the Moundville elites' power derived from their ability to control access to these exotic materials. Mapping the distribution of nonlocal stone may offer insights into the degree to which access to highly tractable material was, in fact, controlled by elites. In his comparison of lithic assemblages from the Fitts site and Mound Q at Moundville, for example, Barry (2004) found that both elites and nonelites alike enjoyed access to highly-tractable, nonlocal material. The only difference between the two contexts was a greater amount of Fort Payne blue-gray chert at Mound Q, which could be attributed to the elites' better position to establish trade ties with more distant polities (Barry 2004; Marcus and Flannery 1996).

Stone tools provide reliable insights into what exactly was being made. Chert microdrills, for example, are often associated with shell bead manufacture (Cobb 2000; Yerkes 1983) and sandstone saws with shaping palettes, axes, and pendants (Knight

2004; Wilson 2001). These products have been hypothesized as elite goods, manufactured under the aegis of a chief at Moundville (Welch 1991). If it can be shown, however, that they were being crafted elsewhere, such as in rural households, then archaeologists should consider alternative explanations of the organization of craft production. Spielmann's (2002) concept of ritual economy suggests that household craft production may have been variable and spatially dispersed, so understanding craft production in the Moundville chiefdom will require comparing samples from multiple sites. To date, research aimed at evaluating the Moundville political economy model has focused on single sites. Few systematic comparisons of nonmound Mississippian sites in the Black Warrior River Valley have been attempted (cf. Barry 2004).

I will compare the lithic assemblages from three late Moundville III-early Moundville IV phase nonmound sites: the Powers site (1Ha11), the Fitts site (1Tu876), and the Pride Place site (1Tu1). I expect to answer several key questions using the resulting data. Is nonlocal stone present at the study sites? If so, how did it get there (i.e., in what form) and how was it used once it arrived? What aspects, if any, of the sites' lithic assemblages evidence craft production? What items, if any, were crafted at each site? If craft production occurred at any of the sites, what kind of stone did it entail? Are finished craft items present in the lithic assemblages of any of the sites? If so, do they possess use wear or are they pristine? The answers to these questions may indicate decentralized control of resources and craft products during the late Moundville III-early Moundville IV phase. If they do, then archaeologists must formulate alternative explanations of the social mechanisms that drove Moundville's economy at that time, such as the agency models that propose that production and consumption were decentralized across social segments of a community as part of a ritual mode of production (e.g., Spielmann 2002).

CHAPTER 3
ARCHAEOLOGICAL CONTEXTS

In what follows, I discuss the three nonmound rural sites that are the focus of this study – the Fitts site (1Tu876), the Powers site (1Ha11), and the Pride Place site (1Tu1). As complete site reports are not yet available for any of these sites, my goal is to provide a brief overview to establish the behavioral and culture historical context of the sites relative to addressing the research questions outlined in Chapter 2.

A number of scholars have commented upon the tendency of archaeologists to gravitate towards large, impressive sites at the expense of smaller, rural sites (Barry 2004; Muller 1997; Rogers 1995a; Schwartz and Falconer 1995). The archaeology of the southeastern United States has not escaped this bias. Since the mid-nineteenth century, the profession has largely focused on exploring and explaining the areas on and around mounds. This is, I suspect, a product of both the mound's archaeological visibility and its higher likelihood of yielding "wonderful things." Further, an a priori association between the presence of a mound and the presence of a controlling elite has influenced much of what has been said about Mississippian political-economic structures, but as archaeologists have taken their excavations into ancient countryside settings, some have concluded that prehistoric ruralists were not as politically, socially, and economically subservient to the mound centers as previously believed (e.g., Byers 2006; Cobb 2000, 2003; Maxham 2000; Milner 1998).

Still, rural Mississippian sites have only recently become a subject of archaeological interest, and in western Alabama they have received even less attention than in other parts of the Southeast (Mistovich 1995). As a result of this mound-site bias, there are only a handful of sufficiently excavated farmstead sites available in the Black Warrior River valley from which I could draw data for this research. Because this study is aimed at investigating spatial, as opposed to chronological, differences in production activities, the list of eligible sites shrinks further. Three of the more extensively excavated sites, the Fitts site (1Tu876), the Powers site (1Ha11), and the Pride Place site (1Tu1), have been positively dated to the Moundville III period. That evidence of craft production in the form of tools and lithic debris has been recovered from these sites made them the most obvious candidates for my research.

The primary contextual focus of this research is that most basic of organizational units, the household. To clarify, the terms "household" and "house" are not interchangeable; to quote Richard Wilk (1983), "households build and live in houses." It is true, then, that sites without evidence of built structures may contain evidence of household activities (Rogers 1995:11). This makes households difficult to identify archaeologically, but in the archaeological literature they remain associated with structures before anything else. In keeping with this tradition, the greater part of artifacts included in this study come from features corresponding to and associated with Moundville III structures. Spatially bound groups of features such as house floors, post molds, hearths, graves, pits, and small sheet middens are considered analytical units that Flannery (1976) calls household clusters. A minority of artifacts that are diagnostic of the Moundville period and pertain to craft production will also be included regardless of provenience.

In each social setting the household must be defined by reference to the kinds of activities that take place within it (Wilk 1983). Agricultural production was undoubtedly the primary endeavor of most, if not all, rural households in the Black Warrior River valley, but that does not mean that they were incapable of artistic pursuits. Indeed, just as many modern craftspeople consider themselves artists first and members of the working class second, so too may Mississippian part-time craftspeople have self-identified more as creators of valued objects than as farmers regardless of whether the bulk of their time was spent in the fields.

The Fitts Site (1Tu876)

The Fitts site is located in a plowed field on the west floodplain of Black Warrior River approximately four kilometers from the Moundville site. Like many Moundville period farmsteads, it is situated in on well-drained, agriculturally productive Ellisville soil. Under the direction of Vernon James Knight and Jennifer Myer, the Black Warrior Valley Survey discovered the site in the summer of 2000 and undertook test excavations there precisely two and three years later. An almost complete report of investigations was produced for the 2002 test excavations, but not for the 2003 excavations.

Excavations consisted of five two-by-two meter units dug entirely by hand and a pair of two meter wide mechanically stripped trenches measuring twenty-two meters long and twenty-six meters long. Upon hand trowelling all unit floors, forty features were identified including two burials, eight pits, and twenty-five postholes, ten of which appear to be the remains of a rectangular domestic structure (Myer 2003:4-5). The square-like placement of four other postholes suggests a possible corn crib (Myer 2003:27).

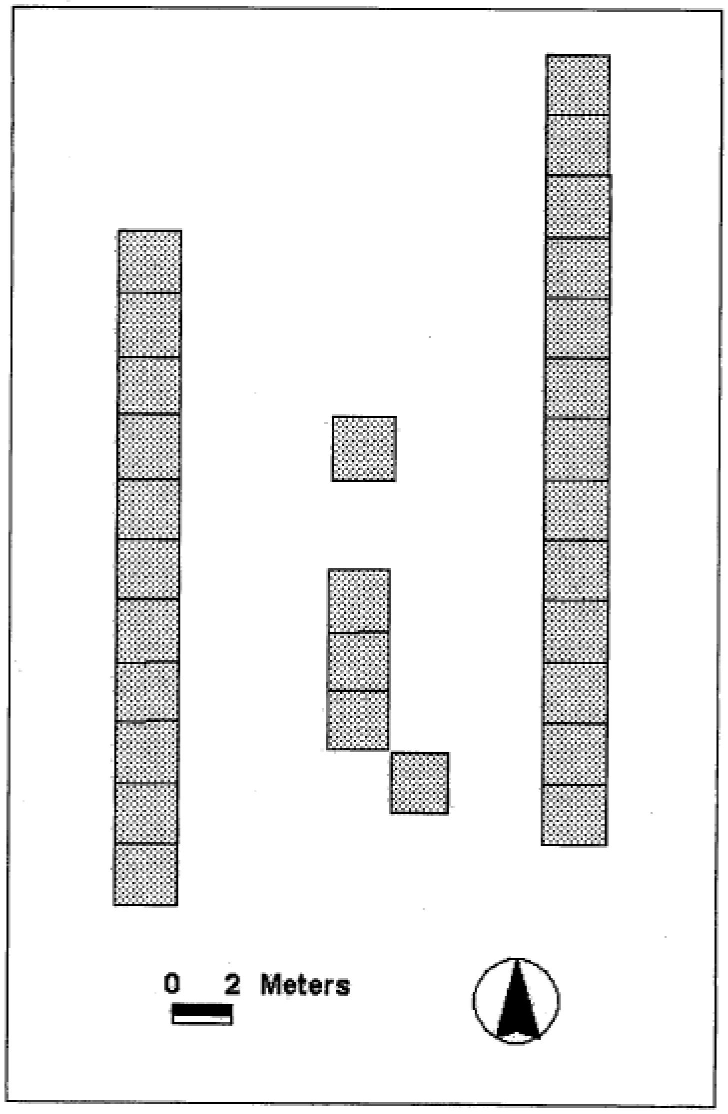

Figure 3. Excavation units and grader strips at the Fitts site, summer 2002 (Myer 2003).

The vast majority of the chronologically diagnostic pottery sherds recovered from these features as well as radiometric dating place the site in the Moundville III phase. However, as with the other sites considered in this study, a miniscule amount of West Jefferson and/or Moundville I phase pottery (n=10) was retrieved from feature fill. It is probable that these few sherds were simply mixed with the soil used to backfill these features in the 15th century (Myer 2003:7).

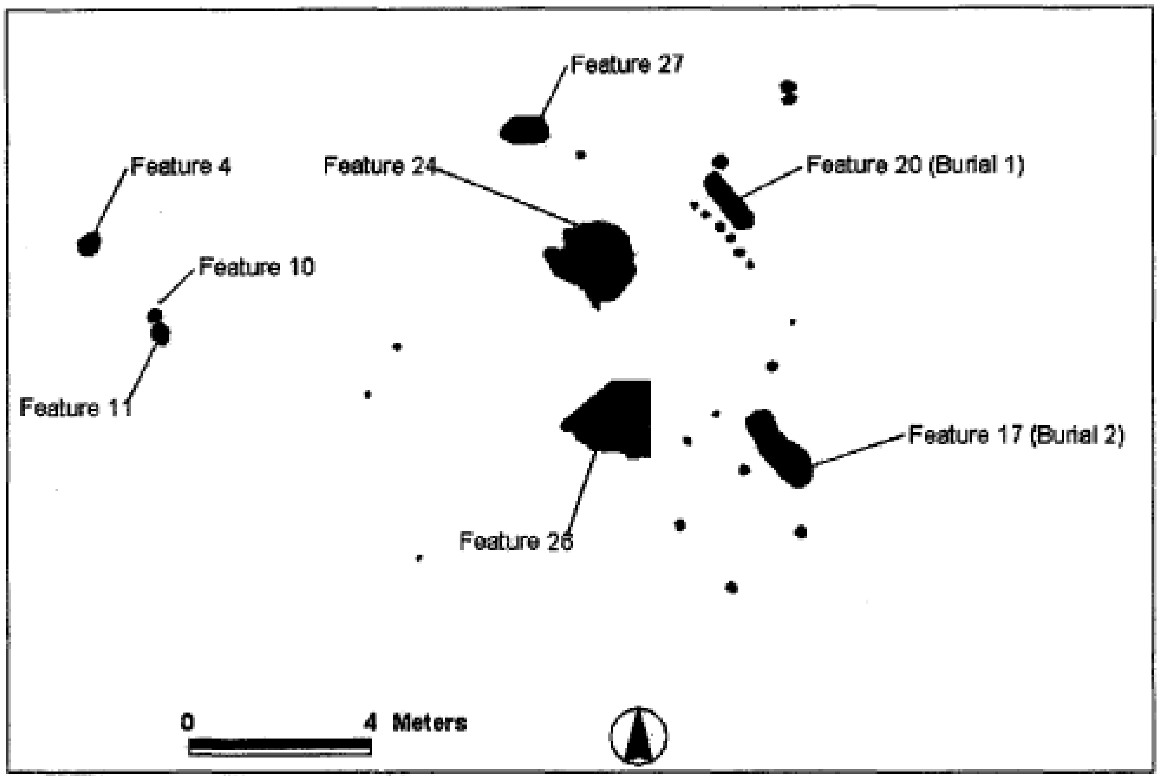

Figure 4. Excavated features at the Fitts site, summer 2002 (Myer 2003).

Myer (2003:12, 29) has made the tentative case for crafting activities at the Fitts site based upon the recovery of high amounts of microdrills, ferruginous sandstone saws, and a partially finished tabular stone pendant. These artifacts suggest the production of shell beads and stone pendants and a broader distribution of both than that proposed by Welch (1991).

Steven Barry (2004) examined the Fitts site lithic assemblage in more depth, noting marked differences between the kinds of stone artifacts retrieved from the Fitts site and those recovered from Mound Q's summit at Moundville. The inhabitants of the Fitts site utilized formal tools more often than did the residents of Mound Q, who relied mainly on expedient tools flaked from cores of nonlocal stone (Barry 2004; Knight 2004). Fitts site flintknappers either did not require or did not have access to as much nonlocal stone as Mound Q residents. Instead, they relied upon heat-treated local stone for the vast majority of their chipped stone projects. Interestingly, most of the nonlocal chipping stone recovered from the Fitts site originates in the Coosa Valley east of the chiefdom, whereas that found on top of Mound Q came from north of the chiefdom in the Tennessee Valley (Barry 2004:70). Observing these patterns, it is not difficult to envision a system of exchange embedded in overlapping cultural, economic, and social arrangements. For example, Moundville elites may have enjoyed greater access to exotic material owing to their favorable position at a nexus of exchange, while rural consumers utilized kinship ties to procure what they needed; all the while, some materials may have been managed by elites for personal gain.

The Powers Site (1Ha11)

The Powers site is located on Millians Creek approximately four kilometers southwest of Moundville. Though it appears roughly one hectare in size, no systematic survey to define site boundaries has been conducted at the site. Walter B. Jones and David L. DeJarnette surface collected at the site in the 1930s, but the vast majority artifacts analyzed for this thesis derive from the University of Alabama field schools of 1981, 1988, and 1991. Aided by accumulations of daub brought to the surface by Mr. Powers's plowing, students of each field school located and excavated one rectangular structure of single-set post construction under the direction of Richard Krause. It is now twenty-seven years after Krause began excavating at the Powers site, yet very little has been published concerning it (but see Welch 1998:146-148 for a brief description of the site).

There is some contention concerning the site's "nonmound" status, for a broad topographic rise that some archaeologists have deemed a mound occupies a portion of it (Mistovich 1995). Test units excavated into that area, however, were sufficient to convince Krause that the rise is a natural accumulation of overbank deposits from nearby Millian's Creek (Welch 1998:148).

In 1981, students uncovered a domestic structure measuring 4.5 meters by 5.5 meters (25 m^2). Two superimposed hearths occupying the structure's center and adjacent pairs of postholes indicate that the structure had undergone a single rebuilding or repairing episode. The structure burned to the ground in antiquity, a seemingly unplanned incident as witnessed by an imported Nodena Red and White jar found crushed under a charred timber (Welch 1998:146). The structure also yielded a slate pendant with a "windmill" design engraved in the Hemphill style on one side. Of the three structures excavated at the Powers site, this was the youngest with a late Moundville III or Moundville IV date.

The 1988 field season uncovered a structure measuring 6 meters by 6.5 meters (39 m^2). Two ceramic urns, one of which contained the bones of an infant, were discovered under a large central post. In addition to a calibrated radiocarbon of 1400 A.D. taken from a burned wall post, Moundville Engraved, var. *Wiggins*, Carthage Incised, vars. *Carthage* and *Fosters*, and red-on-white painted pottery place the structure firmly within the Moundville III phase (Welch 1998:146-148).

In 1991, students excavated a large structure measuring 8.5 meters by 8 meters (68 m^2) at the Powers site. According to Wilson's (2005) areal classification of

Moundville structures, this is a civic building. Indeed, it is larger than any of the structures uncovered during the Civilian Conservation Corps's Moundville Roadway

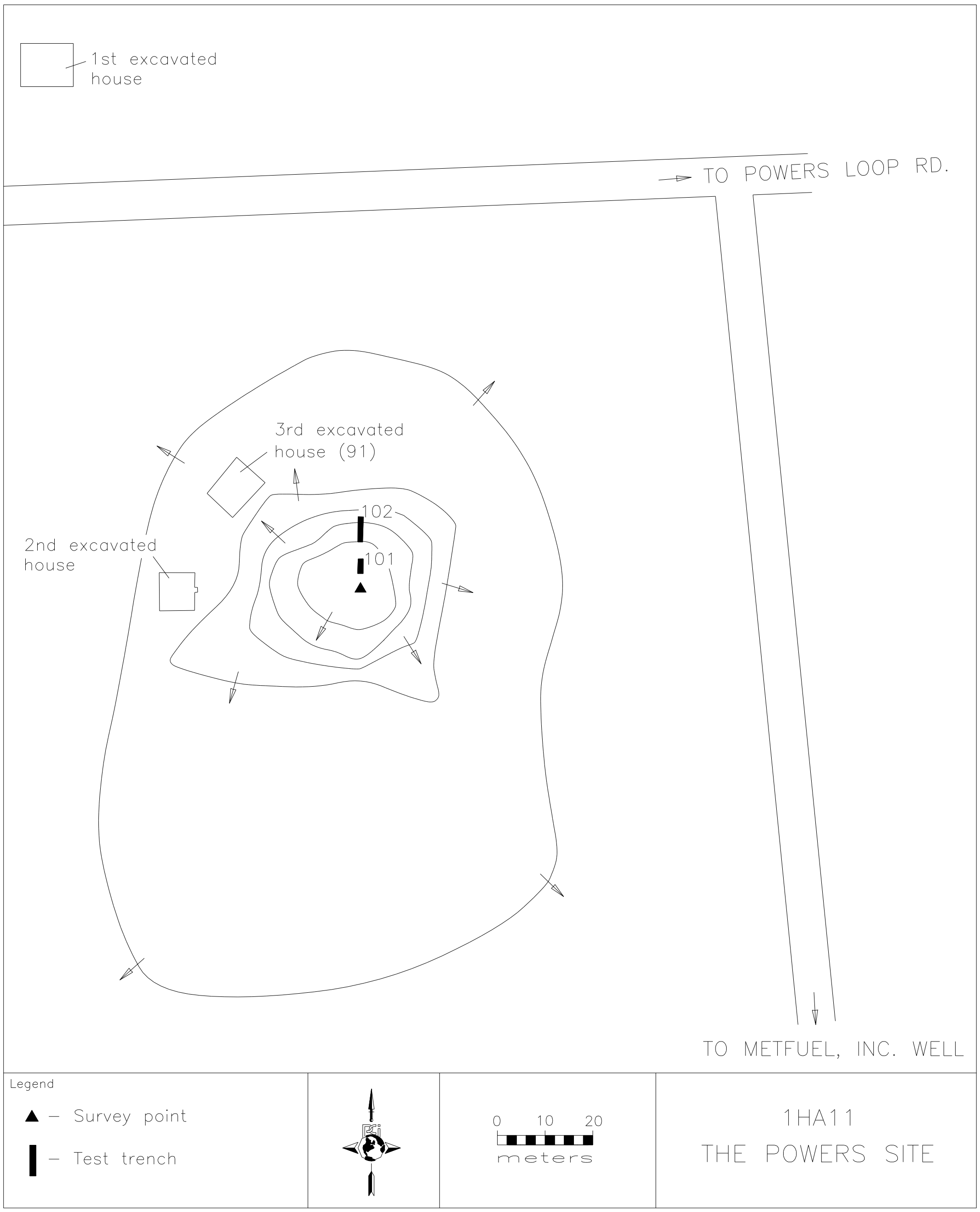

Figure 5. Plan view of the Powers site (1Ha11) (drawing based on student drafts).

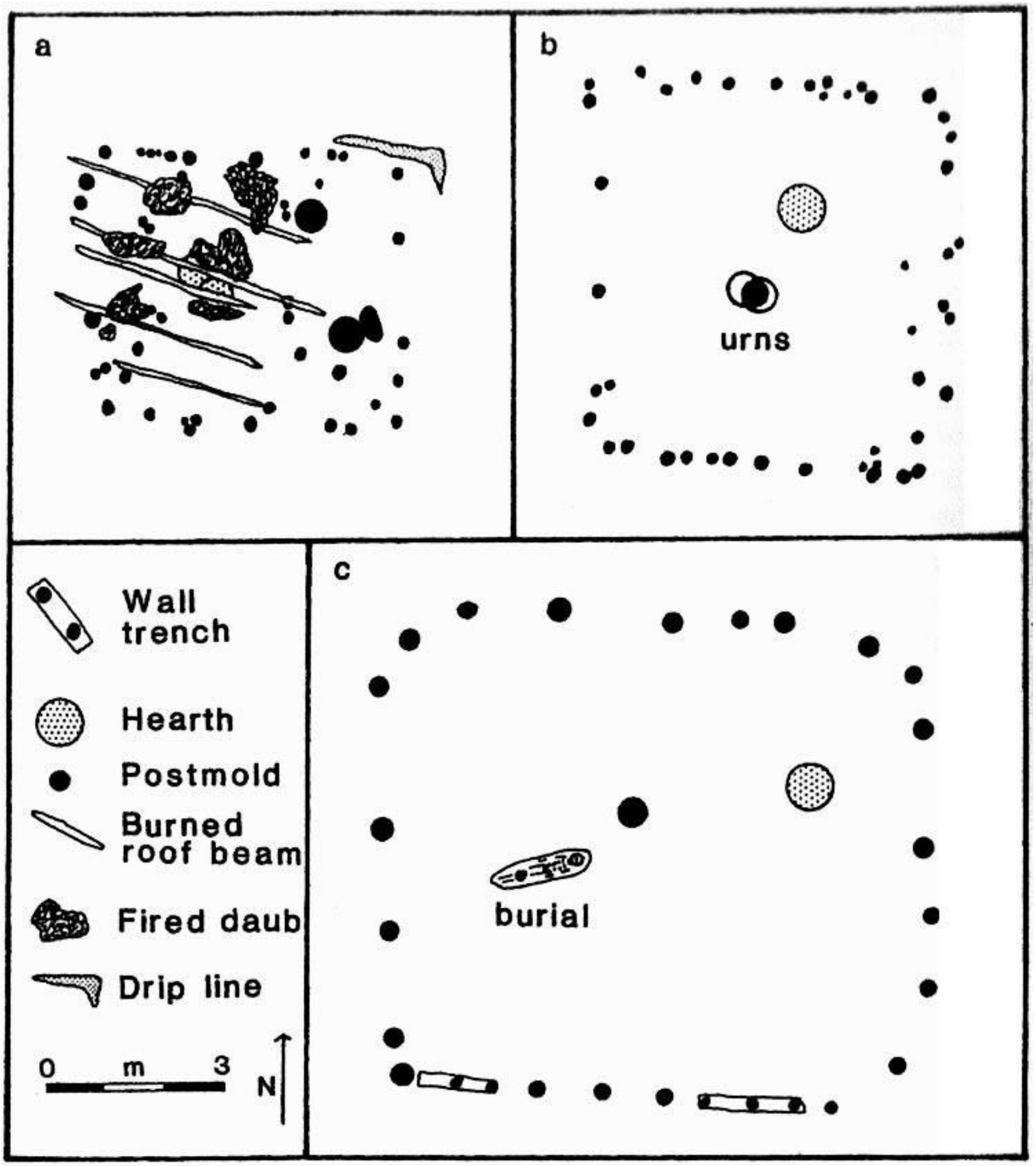

Figure 6. Structures excavated at the Powers site: *a* Structure 1; *b* Structure 2; *c* Structure 3 (Welch 1998:147).

project of the 1930s (Wilson 2005). On the basis of its extraordinary size and aspects of its construction, Redwine (n.d.) has likewise dubbed it an example of public architecture. The structure contained the secondary interment of an adult male intruded by a post, indicating that the burial antedates construction (Welch 1991:146-147).

The Pride Place Site (1Tu1)

The Pride Place site (1Tu1) was excavated by the University of Alabama's Office of Archaeological Research in 1998. All artifacts from those excavations have been analyzed, but no report has been published. The site sits atop a Holocene age first terrace overlooking the falls of the Black Warrior River. The late prehistoric component there is spread across approximately a quarter hectare of a natural rise located about fifty meters from the river. The site's prehistoric inhabitants were ideally located near a variety of exploitable resources due to their settlement near the intersection of multiple ecological zones – the Fall Line Hills, the Cumberland Plateau, and the alluvial-deltaic plain of the Black Warrior valley. The Pottsville formation ($|P_p$), a geological formation that stretches from Pennsylvania to Alabama consisting, in part, of sandstone, siltstone, and shale, outcrops east of the site across a drainage cut by Marr's Spring. As will be discussed below, sandstone from this outcrop featured prominently in the lives and burials of the Mississippian inhabitants of the site. The Pride Place site is the only site included in this study for which an argument concerning the presence of craft specialization has previously been made (e.g., Sherard 1999).

The site has been the subject of multiple archaeological investigations beginning with those conducted by the Alabama Museum of Natural History in 1933 under the direction David L. DeJarnette and Walter B. Jones. Among other things, these excavations yielded ten burials, including the southernmost example of a stone box burial yet discovered in the Southeast. Such mortuary treatment is most typical of

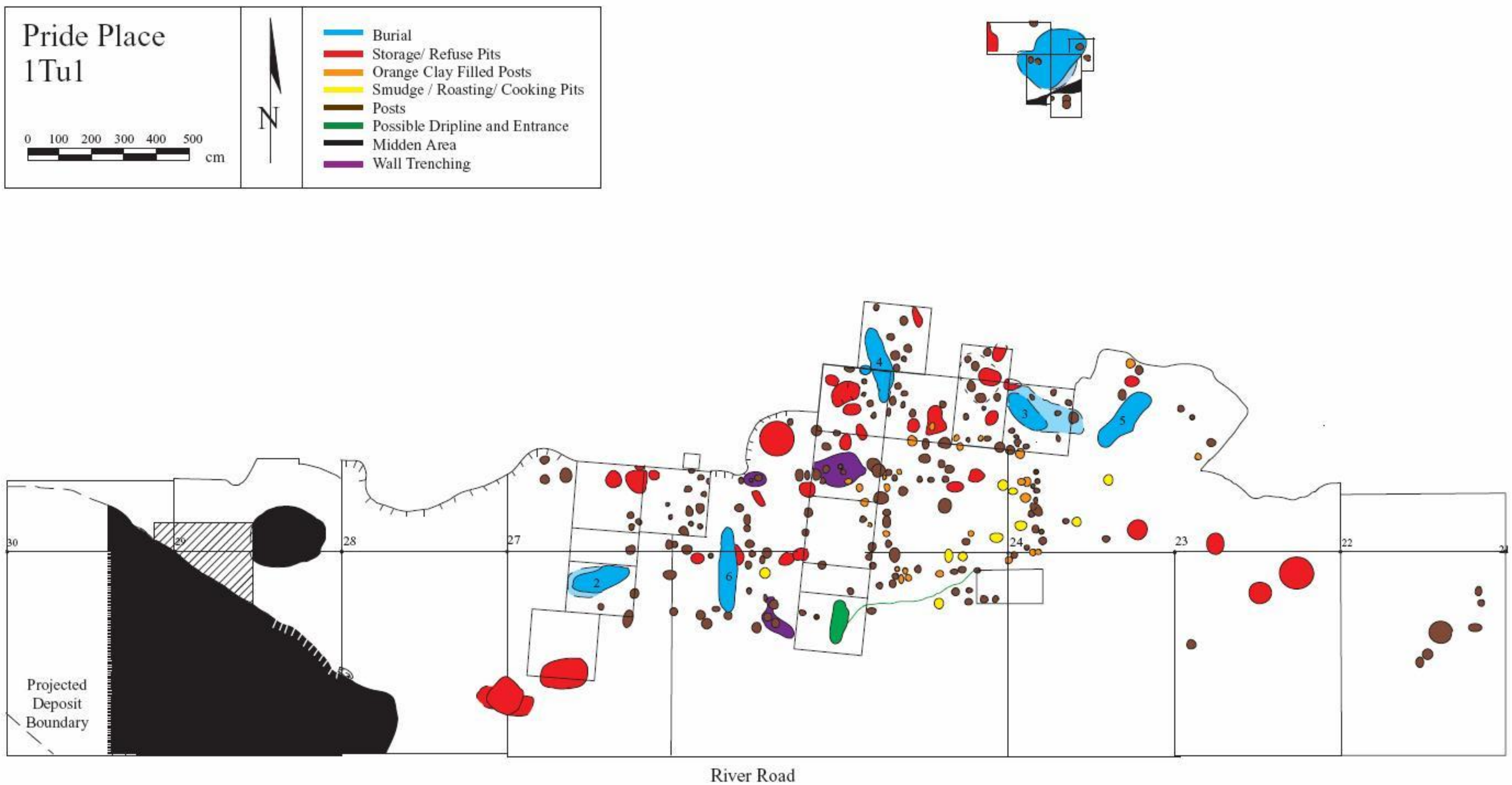

Figure 7. Plan view of features at the Pride Place site (1Tu1).

Mississippian populations in Tennessee, Kentucky, and east-central Missouri (Brown 1981). For whatever reason, the Mississippian inhabitants of the Pride Place site, then, seem to have established their own mortuary traditions on the periphery of the Moundville chiefdom.

In 1998, archaeologists returned to the Pride Place site. An additional six burials were discovered in the course of their work, five of which were associated with the Moundville III occupation. It was then that they realized an apparent chronological polarity between the northern and southern portions of the site. First, flexed burials dominated the northern portion whereas semi-flexed and extended burials dominated the southern portion. Second, most of the grog-tempered pottery was recovered from the northern part of the site while shell-tempered pottery was predominantly recovered from the southern part. Where the distribution of temper-types overlapped, so too did types of burial treatment. This polarity has been cited as evidence for discrete occupation zones, a southern one of Moundville III date and a northern one of West Jefferson date (Gage and Stone 1999).

Five of the sixteen burials at the Pride Place site incorporated sandstone retrieved from the Pottsville formation. In addition to the exceptional stone lined grave mentioned above (burial 3), sandstone artifacts related to burials at the site include one “pillow” rock upon which the deceased’s head was resting (burial 2), one “headstone” which possibly functioned as a reminder of the interred’s legacy (burial 5), one complete palette with pigment residue (burial 4), two discoidals, and four slabs lining the base of one burial pit (burial 1).

The 1998 investigation defined and excavated 266 features including 198 postholes, 62 pits, and the six burials discussed above. Of the 198 postholes, 111 belonged to two rectangular, single set post structures. Radiocarbon samples and diagnostic pottery types taken from features associated with these structures indicate that the primary Mississippian occupation of the site began around AD 1470 and ended by AD 1520. Both structure 1 and 2 were placed only 50 centimeters apart and were of comparable size being 4 meters by 4.75 meters (19 m^2) and 4 meters by 3.75 meters (15 m^2), respectively. As evidenced by adjacent postholes, each structure underwent minor rebuilding and repair in its lifetime.

University of Alabama archaeologists returned to the Pride Place site to in the fall of 2007. Numerous pits and post holes were defined and excavated, yielding a modest number of artifacts, including compelling evidence to corroborate claims that the Pride Place site was, indeed, the residence of part-time Mississippian crafters specializing in the production of sandstone paint palettes. I was on hand as a teaching assistant to Dr. Knight throughout the course of the season; a full report of our efforts there is forthcoming. Analysis of the artifacts recovered in these excavations is still in its early stages and, with few exceptions, will not be included in this study.

Some archaeologists have considered fine gray micaceous sandstone quarried from the Pottsville Formation to be “highly valued” in the Moundville chiefdom, use of which “was in some way restricted, perhaps to elite or ritual contexts” (Steponaitis 1992). The Pride Place site, however, has yielded large amounts of ground, heavily ground, and polished sandstone, tools such as sandstone saws and abraders, roughly a dozen palette fragments, and one complete palette with notched edges and simple engraving on both sides. The bulk of this material was recovered from an expansive Moundville III midden southeast of the Mississippian habitation zone. Considering this evidence, Sherard (1999) has made the case for sandstone paint palette manufacture at the Pride Place site. In fact, it seems probable that until 1998 at least one of the craftsmen remained at the site! Burial 4 was a young adult (possibly male) between the ages of 18 and 25 who was buried with a sandstone palette behind his head and a small jar at his feet. Keith Jacobi (n.d.) has suggested this may have been a palette manufacturer, who had carried on a skill passed down from an elder prior to an untimely death.

CHAPTER 4
MATERIALS AND METHODS

Because they have the advantage of being almost indestructible, lithics offer one of the best measures of production on Mississippian sites (Cobb 2000; Whittaker 1994). By analyzing material, function, and use wear present in any lithic assemblage, the archaeologist is capable of reconstructing a convincing picture of production activities (insofar as they involved stone) at any one location, and, more importantly, can use these data to test models like those outlined above. That is the goal of this research.

Materials

Archaeologists have employed a variety of methods, both microscopic and macroscopic, in distinguishing stone types. For this research, I relied upon the naked eye, the easiest and most inexpensive method, in ascertaining types and, thus, the sources of all lithic material. In doing so, I followed Barbara Luedke's (1992) guide to identifying stone types in which she lists five properties of any stone that are visible to the eye – color, translucency, luster, texture, and structure (also called fabric or pattern).

In this section, I discuss the various kinds of stones and minerals used by the prehistoric inhabitants of the Pride Place, Powers, and Fitts sites. The primary intent of this study is to address craft production in Moundville's hinterlands, not to pinpoint from where Moundville period villagers received lithic material. Thus, when dealing with raw material types it was only necessary to distinguish the local from the nonlocal, which may be more akin to how prehistoric peoples would have conceptualized it (Helms

1993:99; Luedke 1992:59; Spielmann 2002). Nevertheless, it is important to review material types in order to specify what is considered local and nonlocal. I describe each below in terms of their source and geological characteristics, beginning with stone suited to flintknapping and proceeding to stone used in lapidary work.

Local Stone Used for Flaking

Tuscaloosa Gravel Chert

Tuscaloosa Gravel (including Camden cherts) is the most abundant chert found locally. Having tumbled down the Black Warrior River and its tributaries to amass along banks in extensive gravel bars, it would have been easily accessible to prehistoric flintknappers. It occurs as pebbles and cobbles, sizes especially useful in bipolar and freehand amorphous core technologies aimed at the rapid production of expedient flake tools. Small formal tools such as microdrills and Madison points were frequently knapped from Tuscaloosa Gravel, as well. Those looking to craft larger tools, however, would find it unsuitable; cobbles larger than one’s fist are exceedingly rare (Michael Gilbert, personal communication 2007).

Tuscaloosa Gravel chert is “sugary” to smooth grained and white to yellowish-brown in color. Heat-treating improves its tractability and, in general, lends it dark yellow to dark red hues with lustrous and/or rippled flake scars (Barry 2004; Scarry 1995). The vast majority of Tuscaloosa Gravel recovered from archaeological contexts has been heat-treated.

Quartzite

Amongst the Tuscaloosa Gravel beds can be found pebbles and cobbles of quartzite. This highly cemented material possesses poor tractability, fracturing through rather than around quartz grains. It is found in a range of colors including clear white, yellow, rose, and grayish black, with fresh breaks exhibiting a medium to high luster (Skrivan and King 1983). Prehistoric knappers of the Moundville chiefdom would have found it a poor resource for use in the production of chipped stone tools, but its high density suits it excellently to use as hammerstone.

Nonlocal Stone Used for Flaking

Fort Payne Chert

Fort Payne chert outcrops in the Tennessee Valley of north Alabama, but it is ubiquitous (albeit in low quantities) on Moundville period sites. This fine-grained, highly tractable material is blue-gray to black in color with distinctly lighter blue mottles. These blue mottles are often transparent and exhibit a higher luster than the surrounding opaque gray matrix. Fossil inclusions seen as white to gray flecks are not uncommon (Barry 2004). Fort Payne cherts of this variety are distinguished from fossiliferous Fort Payne cherts which range in color from light gray to blue-gray and white to brown. Moreover, Fort Payne cherts do not require heat-treating before use (in truth, it has no effect) (Lafferty and Solis 1980), whereas fossiliferous varieties often do (Skrivan and King 1983).

Bangor Chert

Outcrops of Bangor chert can be found in north Alabama in the central portion of Tennessee Valley (Futato 1983). It is often so similar to Fort Payne chert that the two are difficult to differentiate without good comparative specimens (Barry 2004; Scarry 1995). Like Fort Payne, it is commonly blue-gray in color (though blue-green specimens exist) and demonstrates a high luster upon fracture. Unlike in Fort Payne cherts, a thin layer of white or tan material lies just under the cortex of some Bangor chert. Banded coloring and greater translucency distinguishes this stone further.

Tallahatta Sandstone

Tallahatta sandstone originates in Tallahatta Hills of southwestern Alabama, specifically in Choctaw and Clarke Counties (Baker 1995). Geologically, it derives from the Claiborne Group, a succession of sedimentary rocks deposited during the middle Eocene in primarily coastal depositional environments. Though it is commonly referred to as a quartzite in the archaeological literature, that term is geologically incorrect, for the material has not been metamorphosed like true quartzites (Grunewald 2005). It is coarse textured and light gray to gray in color with occasional fossil inclusions that appear as small cavities in the stone. Tallahatta sandstone lends itself well to flintknapping and possesses a medium to high luster upon breakage. A porous, rust-colored cortex is apparent in some outcrops (Maudsley 1998).

Knox Chert

Knox chert likely originates in the eastern Coosa and Tallapoosa Valleys (Little et al. 1997). The color, texture, luster, and tractability of Knox chert varies from outcrop to outcrop and it is not always easy to distinguish one from another. However, most are pink to red or gray to black in color with high luster fractures. Some is mottled while some is not. Again, it depends on the precise source (Barry 2004).

Mill Creek Chert

Mill Creek chert comes from the Shawnee Hills of southwest Illinois. In the form of hoes fashioned by the knappers of that region, Mill Creek chert found its way to sites across the Mississippian Southeast. This coarse brown, gray, or blue-gray material is riddled with the microscopic casts of leached dolomite and/or calcite crystals that act as shock absorbers, upwardly diffusing waves of force that would otherwise ruin a useful tool. This “mechanical toughness” likely made a Mill Creek chert hoe the *pièce de résistance* of any Mississippian farmer’s toolkit (Cobb 2000:51-52).

Dover Chert

Dover chert outcrops in western Tennessee, from whence it was fashioned into various (typically agricultural) implements or left more-or-less raw and freighted along trade routes to sites throughout the Mississippian Southeast (Cobb 2000:121-122). This chert is brownish-gray with darker brown linear mottling (Scarry 1995) with fresh breaks exhibiting low to medium luster.

Chipped Stone Tools

Utilized Flakes

Unlike their hunter-gatherer and horticultural forebears who often possessed formal knives, most Mississippians relied upon unmodified flakes when something needed cutting. These were either removed from prepared or amorphous cores or were scavenged from lithic scatters close-at-hand. They were quickly discarded once they had served their purpose; hence the term, “expedient tool.” Expedient tools such as these are recognized by one or more irregularly and minutely chipped edges. They are sometimes easy to overlook unless one remains focused on their recognition.

Blade-Like Flakes and Cores

These specialized flakes are typically removed from a prepared core, possess more-or-less parallel sides, and area at least twice as long as they are wide. The blades struck from such cores make excellent cutting tools. Moreover, dull blades were not useless. With slight modification they are recycled into other microtools such as drills and perforators.

Most prepared cores exhibit patterned flaking with long, parallel-sided flake scars overlapping one another. They are, however, far from polyhedral. Cores recovered from recent mound top excavations at the Moundville site were largely of nonlocal raw material, attesting to the fact that at least some kinds of exotic stone entered the chiefdom in relatively raw form (Knight 2007). This is not to say that Moundvillians did not strike blade-like flakes from locally acquired chert. In fact, the farmsteads included in my analysis yielded amorphous and prepared cores of Tuscaloosa gravel.

Projectile Points

Madison and Hamilton points are by a huge margin the most common types of projectile points recovered from Moundville period contexts. Their small, thin, triangular design featuring two long sides of equal length and a narrow base was particularly persistent, having been introduced in Late Woodland times, lasting through the Mississippian, and into the Protohistoric period (Baker 1995). These tiny arrowheads were of simple manufacture, requiring no more than flakes of appropriate dimensions and a modicum of skill. Taking into account the size of triangular points, it is no wonder that most specimens derive from Tuscaloosa gravel pebbles and cobbles and, like most small tools (e.g., drills/perforators), would have left much debitage unrecoverable by quarter-inch screens.

Drills/Perforators

Chipped stone drills and perforators found at prehistoric sites in the Black Warrior River valley are typically less than three centimeters in length. Thus, they qualify as microtools (Pope 1989). As both drills and perforators presumably served the same purpose (i.e., perforation), I did not distinguish between the two in my analysis and hereafter refer to both as "drills." Two types of drills are recovered from Moundville period contexts: reworked projectile points and cylindrical drills (Welch 1991). The method of production for the first type does not necessitate explanation. Cylindrical drills, like other bifacially-flaked microtools, are easily created through modification of blade-like flakes (Yerkes 1983). Their primary morphological traits include 1) bifacial flaking, 2) proximal ends widened or modified for hafting presumably into a bow-drill shaft, and 3) distal bits that are often diamond-shaped in cross-section (Pope 1989; Scarry 1995). The tips of both types commonly show evidence of use in the form of rounding, crushing, and/or dulling, a quality demonstrated by use-wear analysts to have often resulted from the perforation of shell beads (Ensor 1991; Meeks 1999; Pope 1989; Trubitt 2000), though specimens exhibiting bone and hide polish have also been encountered (Meeks n.d.; Yerkes 1983).

Local Stone Used in Lapidary Work

Fine Gray Micaceous Sandstone

Fine gray micaceous sandstone originates in the Pottsville formation, which outcrops north of Tuscaloosa; the Pride Place site is located approximately 150 meters from one such outcrop (Sherard 1999; Steponaitis 1992). It is a very fine-grained gray sandstone flecked with mica (muscovite) inclusions that impart a glinting effect.

Thin disks approximately eight to eighteen inches in diameter were made of this material. Despite their recovery from sites in Alabama, Tennessee, and Northwest Georgia, they are quite rare with only about twenty-five known, one of which is Alabama's state artifact, the famous Rattlesnake Disk of Moundville (Lafferty 1994:198). Sandstone disks have been interpreted as paint palettes (as indicated by pigment residues; Walthall 1980), mobile altars (as indicated by transport-related use-wear; King 2003), and astrological tools (as indicated by Southeastern Ceremonial Complex motifs engraved into the surfaces of some specimens; Lafferty 1994), uses that are by no means mutually exclusive. That fine gray micaceous sandstone was the preferred material for these exquisite objects is most likely owing to its fine texture, high density, ease of retrieval, and beauty.

Tabular Ferruginous Stone

Tabular ferruginous stone is an iron precipitate that forms just under the surface of soils throughout Alabama including those located in and around the Black Warrior River valley. It is readily distinguished from other iron-rich rocks in that it typically forms in thin, rippled plates and other peculiar shapes. Despite its often reddish tint, it is limonite (not hematite) that serves as a bonding agent (Knight 2007).

Tabular ferruginous stone assumes several textures depending upon the grain size of the soil in which it precipitates. If the soil is sandy, an abrasive and dense iron-rich sandstone that fractures conchoidally results. Because of these properties, Moundville lapidists found tabular ferruginous sandstone useful for the manufacture of saws (recognized by one or more honed edges exposing black interior material) that were then employed in the early to middle stages of celt, pendant, and palette production during which pieces were sawed and snapped into basic shapes. When the stone precipitates in silty or clayey soil, a finer-grained variety results that Knight (2007) has dubbed "ferruginous siltstone" or "ferruginous shale," a choice stone for pendant material that comes in a variety of colors.

Nonlocal Stone Used in Lapidary Work

Greenstone

Gall and Steponaitis (2001) have matched the petrographic and geochemical profiles of Moundville greenstone artifacts to those of greenstone outcrops along Hatchet Creek[1] in Clay County and along Gale Creek in Chilton County, locales within approximately 150 kilometers east of the Moundville site. Greenstone is a generic term used by geologists to denote a wide variety of volcanic basalt-related rocks containing minerals that impart greenish tones (Silsby 1999:105). The kind found on sites in the Black Warrior Valley is massive to crudely foliated, fine- to medium grained, and

[1] Interestingly, the name is of some antiquity. It is derived from a nearby colonial period town that was called Pochushåchi, itself a name suggested by Read (1984:35) to have derived from *pachuswuchi håchi* (hatchet creek) or *pochuswa håchi* (axe creek) (Gall and Steponaitis 2001).

possesses a convenient quadriad of minerals (actinolite, chlorite, epidote, and albite) (Gall and Steponaitis 2001). Microfibrous actinolite possesses glass- or graphite-like characteristics that lend flexibility to the stone, chlorite acts as a shock damper, while epidote and albite fasten them all together and enhance the stone's hardness (Silsby 1999:106). The result is a stone suited perfectly for heavy duty tools, especially celts (axes). That prehistoric Moundvillians had figured this out is attested by the fact that fully 96 percent of greenstone artifacts recovered from the Moundville site are petaloid celts (Gall and Steponaitis 2001), implements that once embedded into hardwood handles were used to fell trees, build houses, and occasionally bludgeon foes.

Prompted by conclusions reached by Welch (1991) concerning Moundville's centralized control over the production of utilitarian greenstone celts, several scholars have investigated the distribution and nature of greenstone artifacts at the Moundville site. Wilson (2001) examined 274 greenstone artifacts (249 of which were celts or celt fragments) from Moundville in an effort to test Welch's supposition that axe production took place at the site. Over fifty percent of the tools he studied had been recycled from broken greenstone objects, with the vast majority of that fifty percent expedient in nature. Broken celts, then, were most commonly reincarnated as amorphous cores and hammerstones, not as chisels, smaller celts, or any other more formal tool. This expedient recycling suggests more casual use of greenstone than that suggested by Welch (1991) and others. In fact, Wilson (2001) encountered no large unpolished greenstone flakes, shatter, rejected greenstone nodules, or preforms, artifacts that would have indicated that celts underwent primary reduction at Moundville. This dearth of primary reduction refuse also characterizes rural greenstone assemblages (Hammerstedt 2000).

Methods

Here I address the methods employed in this project. Three approaches to the farmsteads' lithic assemblages can produce a good impression of the kinds and scale of activities that took place at each of the sites considered. These methods are designed to 1) identify flintknapping and lapidary objectives, and, 2) compare sites in terms of relative scales of crafting activities. Flintknapping activities can be reconstructed via mass debitage analysis (Ahler 1972, 1989; Newcomer 1971), that is, using nested screens to size grade chipped stone debitage, then sorting flakes within each size grade according to material type (e.g., local or nonlocal) and presence or absence of cortex, and finally recording flake counts and/or weights in each resulting category. Lapidary objectives are implied by tool kits, stone tool use wear (analysis of which is not included in this thesis), kinds and conditions of scrap material, the presence of complete or broken craft items, craft items in various stages of completion, and other artifacts present in a site's assemblage. These kinds of artifacts were identified, counted, and weighed. Finally, abundance measures enable comparison of artifact counts from differing excavation volumes by comparing them against counts of a ubiquitous artifact type such as pottery sherds. These approaches are detailed below.

Mass Debitage Analysis

Debitage from each site was mass analyzed following methods pioneered by Newcomer (1971) and Ahler (1972, 1989). More traditional individual flake analyses often entail years of constant data recording even for relatively small assemblages of only a few thousand flakes (e.g., Fish 1979; Schneider 1972). Of course, Master's level projects do not typically afford such copious amounts of time for analysis. Fortunately, many lithic experts agree that a flake aggregate analysis is an excellent means of easily and efficiently deriving useful data from a collection of lithic debitage (Ahler 1972, 1989; Newcomer 1971). Such an analysis virtually eliminates the kinds of subjectivity inherent in individual flake analyses, allowing for data collection that is replicable even by novices. Finally, because flintknapping is a reductive or subtractive technology (Andrefsky 2001:3; Collins 1975:16; Deetz 1967:48-49) as opposed to an additive technology like pottery manufacture, mass debitage analyses that size-grade debitage are capable of characterizing an assemblage according to reduction stages (e.g., primary, secondary, tertiary) thereby answering production-related questions such as those that are central to this study.

Though there are several ways to conduct a mass debitage analysis, that which size grades assemblages has come to dominate and it is the way that I chose to conduct my analysis. Regardless of some recent contention concerning the misapplication of mass debitage analysis in some cases (e.g., Andrefsky 2007), debitage size can inform reports such as this one in multiple respects. First, it is generally accepted that the size of debitage is directly related to the size of the objective piece (Andrefsky 2001:3). For example, an analysis of debitage dating primarily to the Mississippian period can be expected to document a preponderance of relatively small flakes, as most formal tools were quite small during that time. Second, since flintknapping is a reductive enterprise, debitage decreases in size as the objective piece nears completion (Andrefsky 2001:3).

Thus, by size grading debitage one can place flakes in their systemic contexts and achieve a reasonably good idea of which stages of reduction are represented in an assemblage. I size graded debitage from each site by sifting it through a series of four nested screens graduated in increments of 2, 1, ½, and ¼ inches.

In order to increase the interpretative value of any mass debitage analysis, measurement of a couple of additional variables is usually undertaken once debitage has been segregated into size classes. For each size class, I recorded the number of flakes possessing cortex and, using a calibrated laboratory scale, the total weight of all flakes therein. Cortex, defined by Ahler (1989) as “any observable rind or outer surface of the original piece of raw material that can be distinguished from a surface created by human flake removals or fracture processes,” is gradually removed as tool reduction progresses. As such, it is usually present more on flakes resulting from early stages of reduction than those resulting from later stages (Ahler 1989).

Bradbury and Carr (1995) bring up an important point to consider when debitage from gravel-sized material dominates an assemblage. Their experimental study entailed the reduction of a small nodule (90.7 gm) and a large nodule (1373.2 gm). They found that nearly sixty-six percent of the debitage from the large nodule was cortex-free, in contrast to only about thirty-five percent of that from the small nodule. It is clear, then, that different raw material types produce different ratios of debitage possessing cortex, a fact to be remembered during interpretation.

Using a calibrated laboratory scale, the average weight of flakes within each size class was also recorded. There are two reasons why this was done. The first is related to flake shape. Ahler (1989) proposes that the average weight of debitage in each size class is an indirect measure of the length, width, and thickness of flakes in each class, thereby allowing one to infer differences in load application (i.e., whether flakes were produced by hard or soft hammer percussion) across an assemblage. The second reason is related to my belief that, when it comes to relative abundances of local and nonlocal stone, weight is much more accurate measure than count. Knight (2004) and others (e.g., Markin 1997; Pauketat 1994), however, have devised an excellent method that uses counts to quantitatively compare relative abundances of specific artifact classes across contexts. Weights of artifacts in these classes (which include flakes of nonlocal stone) were be used to supplement this method of which more detail will be given below.

Unfortunately, much of this work was accomplished before I was aware of a degree of chronological mixing among the assemblages considered here. Both the Powers site and the Pride Place site were occupied during the late Woodland period as evidenced by a low-level ubiquity of Baytown pottery. As archaeologists know of no way to distinguish Woodland and Mississippian debitage, I am forced to deemphasize the significance of analyses conducted with the chipped stone debitage of these two sites. If a method to distinguish the two is someday devised, then these data are on hand for some other intrepid archaeologist. Still, the Fitts site yielded such a miniscule number of Baytown sherds (only 10 compared to 5923 shell tempered sherds) that I can proceed with interpretations of its debitage as overwhelmingly Mississippian.

Abundance Measures

Because differing excavation volumes make it difficult to compare sites and contexts, Knight (2004) and others (e.g. Markin 1997; Pauketat 1994) have devised quantitative methods to do just that. Called abundance measures, they are particularly useful for this project because they have already been calculated for other contexts within the Moundville chiefdom, thus facilitating comparison between those contexts and the ones that are the focus of this research. Abundance measures were designed to compare and contrast the relative amounts of specific classes of artifacts recovered from different archaeological locales. The formulae consist of a numerator that is the sum of artifacts of relevant classes in a given context and a denominator that is some measure of "background activity" (e.g., cooking as indicated by unburnished sherds) for that context, a fraction that is finally multiplied by some multiple of ten to produce an index of occurrence. The denominator, then, controls for bias in artifact counts generated by assemblages of different sizes.

With data gathered at farmsteads throughout the American Bottom, Pauketat (1989) has demonstrated a strong correlation between number of ceramic jar sherds and volume of feature fill, a discovery that prompted him to use jar rim sherds as an activity standard against which to measure variables of interest at Cahokia. In characterizing elite middens at Moundville, Knight (2004) also measured artifact classes against jar rim sherds. Recently, however, Knight (2007) has revised the abundance formulae he once employed at Moundville in order to obtain a subtler understanding of differences across contexts. The revamped indices that apply to this study are detailed here. With one exception, these indices were developed by Knight (2007) for use in his interpretations of mound use at the Moundville site.

Sandstone Saw Index

By using the groove-and-snap methods discussed above, prehistoric lapidists roughed out a variety of items including pendants, sandstone disks, and celts. Thus, where the production of these items took place, ferruginous sandstone saws are abundant. To compare contexts, though, a quantitative measure is required. For this study, the measure of background activity in the denominator is the total number of pot sherds for the context in question. This is in contrast to earlier work (e.g., Pauketat 1994; Knight 2004), where only jar rim sherds were considered in the denominator. The resulting fraction will then be multiplied by 10,000. Thus, the formula is:

$$\text{index of occurrence}=[CSS/TPS]\text{x}10{,}000$$

whereas, CSS is the count of sandstone saws and TPS is the total number of pot sherds.

Chert Microdrill Index

Here I adapt Knight's (2004) microdrill index to my farmstead contexts where jar rim sherd counts were unacceptably low. Following his lead for measuring the abundance of other artifact classes (e.g., sandstone saws), the total number of pot sherds from the target context will serve as denominator in the chert microdrill index. The fraction will again be multiplied by 10,000 for the final figure. The final formula is:

$$\text{index of occurrence}=[CCM/TPS]\text{x}10{,}000$$

whereas, CCM is the count of chert microdrills and TPS is the total number of pot sherds.

Greenstone Index

In other contexts, the figure resulting from the formula below could be used as an index of woodworking, axe manufacture, or subsistence-related activities (e.g., field clearing), a distinction that depends upon the context under consideration and the kinds of artifacts that come from it. As I am dealing exclusively with poorly understood rural contexts, I must consider the greenstone index a measure of any or all of these activities depending upon the nature of the greenstone assemblage of each site. Additionally, it will be used to measure the abundance of this exotic raw material. Counts from three categories of greenstone artifacts are added to make up the numerator. Again, total number of pot sherds serves as denominator. The formula, then, is:

$$\text{index of occurrence}=[(CCF+CPC+CGS)/TPS]\times 10{,}000$$

whereas, CCF is the count of celt fragments, CPC is the count of polished chips, CGS is the count of greenstone shatter, and TPS is the total number of pot sherds.

Debitage Index

This measure is considered an index of the degree to which farmstead residents made and rejuvenated chipped stone tools. The numerator consists of counts from three categories of debitage. The total number of pot sherds, rather than just jar rim sherds, is again used in order to obtain a sufficient denominator. The formula is:

$$\text{index of occurrence}=[(CF+CS+CCF)/TPS]\times 10{,}000$$

whereas, CF is the count of flakes, CS is the count of shatter, CCF is the count of core fragments, and TPS is the total number of pot sherds.

Nonlocal Debitage Index

For his mound excavations, Knight (2007) used as numerator the sum of three categories of debitage (the same as above) whose raw material was classified as nonlocal. It is then divided by the total debitage of all raw materials, a fraction that is multiplied by one hundred. Thus, the formula is:

$$\text{index of occurrence}=[(CNF+CNS+CNCF)/(CF+CS+CCF)]\times 100$$

whereas, CNF is the count of nonlocal flakes, CNS is the count of nonlocal shatter, CNCF is the count of nonlocal core fragments, CF is the total count of flakes, CS is the total count of shatter, and CCF is the total count of core fragments.

Summary

Analysis conducted for this thesis is limited to lithic assemblages from three nonmound rural sites. Three approaches to these assemblages will be adopted in order to obtain the data required to answer the research questions outlined in Chapter 2. First, mass debitage analysis will characterize the form in which knapping stone arrived at each site and how it was used once it was there. Sorting according to presence/absence of cortex will provide additional lines of evidence concerning the stages of production present at each site while sorting of debitage according to raw material will identify ratios of local to nonlocal. Second, tool kits, stone tool use wear (analysis of which was conducted by other researchers), kinds and conditions of scrap material, the presence of complete or broken craft items, craft items in various stages of completion, and other artifacts present in a site's assemblage will define lapidary objects. Third, use of abundance measures will facilitate comparison of the lithic assemblages of each site. The results of these efforts and their implications will be elucidated in the following pages.

CHAPTER 5
RESULTS OF THE LABORATORY ANALYSIS

In this chapter, I present the results of the laboratory analysis of artifact assemblages from three late Moundville III-early Moundville IV nonmound sites: the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876). The results were garnered through implementation of the methods detailed in chapter four and through perusal of data forms and publications of others who have studied these archaeological locales. Each of the materials described in chapter four was indeed encountered in the course of these analyses. If archaeologists are to understand the economy of a prehistoric society like Moundville, their conclusions must be based upon contemporaneous sites of all types and sizes. In the Black Warrior Valley, very little research has been conducted on rural nonmound sites. Until now, they have contributed correspondingly little to our understanding of Moundville's economy.

As discussed previously, Welch's (1991) political economic model for Moundville proposes that elites gained and maintained power by controlling 1) the crafting of items necessary for the preservation and reproduction of social status quos, and, 2) access to valued nonlocal raw materials from which these items were made. This research evaluates both premises. My approach to hinterland craft production was two-fold. First, chipped stone debitage from features was sifted through a series of nested screens to separate it into distinct size categories that are useful in reconstructing flintknapping activities. Second, chipped and ground stone tools from each site were analyzed for evidence of crafting activities. All local and nonlocal material was counted and weighed for the purposes of evaluating the second premise. The results of these analyses are presented below, including a range of abundance measures to facilitate intersite comparisons.

Analysis of Powers site (1Ha11) Archaeological Materials

In this section, I quantify and summarize the lithic artifacts of the Powers site (1Ha11), a small nonmound site located four kilometers southwest of the Moundville site. Chipped stone artifacts and ground stone artifacts associated with three structures excavated at the site were identified and compared.

Powers Chipped Stone Debitage

The first part of analysis examined debitage to reconstruct flintknapping activities. Primary variables of interest include material (local or nonlocal), flake size (.01-.49”, .50-.99”, 1.0-1.99”, or >2.0”), and presence/absence of cortex. Information concerning crafting activities can be gleaned from these data. Structure 1 yielded a total of 859 chipped stone flakes, 748 (87.1%) of which were of locally available stone (Table 1). Structure 2 yielded 132 total flakes (not including plowzone contexts), 105 (79.5%) of which were of local stone (Table 2). Structure 3 yielded 171 total flakes, 140 (81.9%) of which were of local stone (Table 3). Despite its small size, Structure 1 produced approximately 6.6 times more debitage than Structure 2 and approximately 5.5 times more than Structure 3. This comparably high yield positions Structure 1 to contribute more to conclusions concerning flintknapping activities than the other two structures.

Size Grade	Local Material			Nonlocal Material		Total
	Tuscaloosa Gravel		*Local Quartz*	with cortex	without cortex	
	with cortex	without cortex				
.01-.49”	451 (52.5%)	161 (18.7%)	43 (5.0%)	41 (4.8%)	48 (5.9%)	744 (86.6%)
.50-.99”	67 (7.8%)	13 (1.5%)	12 (1.4%)	16 (1.9%)	6 (0.7%)	114 (13.3%)
1.0-1.99”	1 (0.1%)	0	0	0	0	1 (0.1%)
>2.0”	0	0	0	0	0	0 (0.0%)
Totals	519 (60.4%)	174 (20.3%)	55 (6.4%)	57 (6.6%)	54 (6.3%)	859 (100.0%)
	693 (80.7%)		55 (6.4%)	111 (12.9%)		859 (100.0%)
	748 (87.1%)			111 (12.9%)		859 (100.0%)

Table 1. Powers site Structure 1 chipped stone debitage.

Note each structure assemblage’s heavy bias in favor of smaller flakes (to facilitate discussion, size grades 0.1-.49”, .50-.99”, 1.0-1.99”, and >2.0” will hereafter be called small, medium, large, and very large, respectively). Seven hundred and forty-four (86.6%) of Structure 1’s 859 flakes belong to the small size grade, leaving 114 (13.3%) in the medium size grade, and only one flake (0.1%) in the large size grade. This pattern holds when the size grades are grouped according to material type. Six hundred and twelve (81.8%) of the 748 flakes of local material fit into the small size grade; the remaining 79 (10.4%), plus one large local material flake (0.1%), fell into the medium grade. Likewise, 89 (80.2%) of the 111 nonlocal material flakes from Structure 1 were small and 20 (18.0%) were medium.

The pattern is more or less repeated at the other two structures. Eighty-seven (66.0%) of the 132 flakes from Structure 2 were small and 43 (32.6%) were medium, leaving only two (1.6%) large flakes. Seventy-four (70.5%) of its local material flakes fit

Size Grade	Local Material			Nonlocal Material		Total
	Tuscaloosa Gravel		*Local Quartz*	with cortex	without cortex	
	with cortex	without cortex				
.01-.49"	43 (32.6%)	22 (16.7%)	9 (6.8%)	5 (3.8%)	8 (6.1%)	87 (66.0%)
.50-.99"	15 (11.4%)	10 (7.6%)	5 (3.8%)	5 (3.8%)	8 (6.1%)	43 (32.6%)
1.0-1.99"	0	0	1 (0.8%)	0	1 (0.8%)	2 (1.6%)
>2.0"	0	0	0	0	0	0 (0.0%)
Totals	58 (44.0%)	32 (24.2%)	15 (11.7%)	10 (7.5%)	17 (12.9%)	132 (100.0%)
	90 (68.9%)		15 (11.7%)	27 (20.5%)		132 (100.0%)
	105 (80.0%)			27 (20.5%)		132 (100.0%)

Table 2. Powers site Structure 2 chipped stone debitage.

into the small category, leaving 30 (28.6%) medium flakes and one (0.9%) large one. Thirteen (48.1%) Structure 2 flakes of nonlocal material were small, another 13 (48.1%) were medium, and one (3.3%) was large. One hundred and fifty-two (88.9%) of Structure 3's 171 flakes were small and 19 (11.1%) were medium. Of the 140 flakes of local material, 124 (88.6%) were small and 16 (11.4%) were medium. Twenty-eight (90.3%) of the structure's 31 nonlocal material flakes were small, leaving only three (9.7%) medium sized flakes of nonlocal material.

I recorded ratios of cortex presence and absence on chert debitage only, for the eroded or patinated surface of many of the quartz flakes was not conducive to this measure. Of the 701 local material flakes from Structure 1, 525 (74.9%) possessed cortex and 176 (25.1%) did not; 59 (51.3%) of Structure 1's 115 nonlocal material flakes possessed cortex and 56 (48.7%) did not (Table 1). Fifty-eight (64.4%) of Structure 2's

<table>
<tr><th rowspan="3">Size Grade</th><th colspan="3">Local Material</th><th colspan="2">Nonlocal Material</th><th rowspan="3">Total</th></tr>
<tr><th colspan="2">Tuscaloosa Gravel</th><th>Local Quartz</th><th rowspan="2">with cortex</th><th rowspan="2">without cortex</th></tr>
<tr><th>with cortex</th><th>without cortex</th><th></th></tr>
<tr><td>.01-.49”</td><td>87
(50.9%)</td><td>31
(18.1%)</td><td>6
(3.5%)</td><td>13
(7.6%)</td><td>15
(8.8%)</td><td>152
(88.9%)</td></tr>
<tr><td>.50-.99”</td><td>14
(8.2%)</td><td>2
(1.2%)</td><td>0</td><td>2
(1.2%)</td><td>1
(0.6%)</td><td>19
(11.1%)</td></tr>
<tr><td>1.0-1.99”</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0
(0.0%)</td></tr>
<tr><td>>2.0”</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0</td><td>0
(0.0%)</td></tr>
<tr><td rowspan="3">Totals</td><td>101
(59.1%)</td><td>33
(19.3%)</td><td>6
(3.5%)</td><td>15
(8.8%)</td><td>16
(9.4%)</td><td>171
(100.0%)</td></tr>
<tr><td colspan="2">134
(78.4%)</td><td>6
(3.5%)</td><td colspan="2">31
(18.1%)</td><td>171
(100.0%)</td></tr>
<tr><td colspan="3">140
(81.9%)</td><td colspan="2">31
(18.1%)</td><td>171
(100.0%)</td></tr>
</table>

Table 3. Powers site Structure 3 chipped stone debitage.

90 local material flakes possessed cortex and 32 (35.6%) did not. Ten (37.0%) of its 27 flakes of nonlocal material possessed cortex, leaving 17 (63.0%) without (Table 2). One hundred and one (75.4%) of Structure 3’s local material flakes possessed cortex and 33 (24.6%) did not. Lastly, 15 (48.7%) of Structure 3’s 31 nonlocal material flakes possessed cortex; 16 (51.3%) did not (Table 3).

Powers Chipped Stone Tools

Many chipped stone tools were recovered from excavation contexts at the Powers site, especially in the vicinity of Structure 1. In total, 35 blades (3 of nonlocal material), 59 utilized flakes (all of local material), 18 cores (2 of nonlocal material), four gravers (1 of nonlocal material), four drills/perforators (all of local material), 15 microdrills (5 of nonlocal material), and 45 triangular points (15 of nonlocal material) were recovered.

Seventeen non-Mississippian tools, mostly early to late Archaic projectile points were found inside and outside of the three Mississippian structures. Indeed, an exquisite Dalton point was discovered at the base of a Mississippian posthole, a place sometimes reserved for dedicatory offerings (Blitz 1993:89). It is likely that these objects were collected by the site's Mississippian occupants, but are not a factor in the research conclusions.

The greatest variety and greatest number of chipped stone tools was recovered from Structure 1. These include 20 blade-like flakes (2 of nonlocal material), 40 utilized flakes (all of local material), eight cores (1 of nonlocal material), 1 graver, 2 drills, 6 microdrills of local material, and 18 triangular points (one of nonlocal material) (Table 4). According to the Moundville political economy model, blade cores of nonlocal material, evidence of on-site production, should be absent everywhere but the regional center and subsidiary mound sites. Note, however, that one was found at the Powers site.

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	18	0	2	20
Utilized Flake	38	2	0	40
Core	7	0	1	8
Graver	1	0	0	1
Drill/Perforator	2	0	0	2
Microdrill	6	0	0	6
Triangular Point	16	1	1	18
NonMississippian PPK	0	0	6	6

Table 4. Powers site Structure 1 chipped stone tools.

Just as it yielded the least amount of debitage, Structure 2 also yielded the least amount of chipped stone tools including and 2 microdrills (1 of nonlocal materia1), and 10 blade-like flakes, 7 utilized flakes, and 2 cores of local material (Table 5). The one microdrill of nonlocal material from Structure 2 is a good example of a blade-like flake modified into a formal tool. Being about 2.5 cm in length and only half a centimeter wide, it is quite delicate. Nevertheless, like many microdrills recovered from Mississippian sites, it exhibits use wear on its narrower end (Fig. 8).

A modest amount of chipped stone tools were recovered from Structure 3. These include five blade-like flakes (one of nonlocal material), six utilized flakes, six cores, three gravers, and one drill of local material, five microdrills (three of nonlocal material), and 17 triangular points (seven of nonlocal material) (Table 6).

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	10	0	0	10
Utilized Flake	7	0	0	7
Core	2	0	0	2
Graver	0	0	0	0
Drill/Perforator	0	0	0	0
Microdrill	1	0	1	2
Triangular Point	0	0	0	0
NonMississippian PPK	0	3	1	4

Table 5. Powers site Structure 2 chipped stone tools.

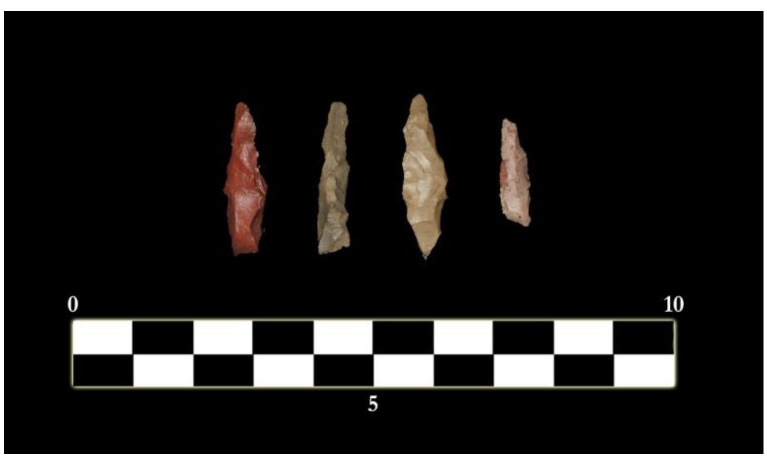

Fig. 8. A selection of local and nonlocal material chipped stone microdrills from structure contexts at the Powers site. Each is a modified microblade struck from a prepared core. The second from the left is discussed in greater depth above.

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	4	0	1	5
Utilized Flake	6	0	0	6
Core	6	0	0	6
Graver	3	0	0	3
Drill/Perforator	1	0	0	1
Microdrill	2	0	3	5
Triangular Point	10	0	7	17
NonMississippian PPK	0	1	2	3

Table 6. Powers site Structure 3 chipped stone tools

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	9	1	0	10
Utilized Flake	6	1	0	7
Core	6	0	1	7
Graver	2	0	0	2
Drill/Perforator	3	0	0	3
Microdrill	0	0	2	2
Triangular Point	7	0	7	14
NonMississippian PPK	0	1	5	6

Table 7. Chipped stone tools from extrastructure contexts at the Powers site.

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	32	1	3	35
Utilized Flake	57	3	0	60
Core	22	0	2	23
Graver	7	0	0	6
Drill/Perforator	6	0	0	6
Microdrill	9	0	6	15
Triangular Point	33	1	15	48
NonMississippian PPK	0	5	14	19

Table 8. All chipped stone tools from the Powers site.

Material	Structures			Outside of Structures	Total	
	#1	#2	#3			
Local Chert	937.3 (82.5%)	186.9 (69.7%)	114.9 (80.3%)	442.3 (71.4%)	1681.4 (78.5%)	1976.2 (92.3%)
Local Quartz	129.4 (11.4%)	60.8 (22.7%)	3.2 (2.2%)	101.4 (17.1%)	294.8 (13.8%)	
Nonlocal Knapping Stone	68.8 (6.1%)	20.4 (7.6%)	25.0 (17.5%)	50.7 (8.5%)	164.9 (7.7%)	164.9 (7.7%)

Table 9. Weights (gm) of local and nonlocal knapping stone from the Powers site (1Ha11). Percentages are tallied within each column.

Based on the chipped stone tools from the Powers site, it is apparent that that site's Mississippian inhabitants 1) had access to blades and cores of nonlocal stone however limited, 2) did not use nonlocal flakes in an expedient manner, indicated by the complete absence of utilized flakes of nonlocal stone, and 3) engaged in a degree of craft production as evidenced by gravers, drills/perforators, and microdrills. Indeed, these tools comprise the basic tool kit for perforating shell beads, an activity known to be common at Mississippian sites of all levels (Pauketat 1994; Trubitt 2000, 2003). Moreover, the chipped stone debitage suggests that the Powers site residents made their own tools principally from locally available stone, because local flakes with cortex dominate the overall assemblage (58.5%). Recalling that the size of debitage is directly related to the size of the objective piece (Andrefsky 2001:3), one would not expect local material flakes to be very large because local pebbles start off small and then small tools (e.g., triangular points, microliths) are made from them. That the assemblage is heavily weighted towards smaller flakes, the overwhelming majority of which retain cortex, is good evidence that the small tools found at the Powers site were also made there.

Treatment	Fine Gray Micaceous Sandstone	Ferruginous Sandstone	Rough Sandstone	Slate	Greenstone
Ground	30	8	9	0	0
Sawn	0	0	0	0	0
Drilled	0	0	1	0	0
Flaked	0	1	0	0	1

Table 10. Crafting debris from Structure 1 at the Powers site.

Treatment	Fine Gray Micaceous Sandstone	Ferruginous Sandstone	Rough Sandstone	Slate	Greenstone
Ground	9	12	1	0	0
Sawn	0	0	0	0	0
Drilled	0	0	0	0	0
Flaked	0	0	0	0	0

Table 11. Crafting debris from Structure 2 at the Powers site.

Treatment	Fine Gray Micaceous Sandstone	Ferruginous Sandstone	Rough Sandstone	Slate	Greenstone
Ground	0	4	0	0	0
Sawn	0	0	0	0	0
Drilled	1	0	0	0	0
Flaked	0	0	0	0	0

Table 12. Crafting debris from Structure 3 at the Powers site.

Treatment	Fine Gray Micaceous Sandstone	Ferruginous Sandstone	Rough Sandstone	Slate	Greenstone
Ground	39	24	11	0	0
Sawn	0	0	0	0	0
Drilled	1	0	1	0	0
Flaked	0	1	0	0	6

Table 13. All crafting debris (including that from extra-structural contexts) from the Powers site.

Powers Ground Stone Artifacts and Crafting Evidence

Excavations yielded 39 pieces of ground and one piece of drilled fine gray micaceous sandstone, 24 pieces of ground ferruginous sandstone and one small ferruginous sandstone flake (possibly a rejuvenation flake from the edge of a ferruginous sandstone saw), 11 pieces of ground and one drilled piece of rough sandstone, five unpolished greenstone flakes (Fig. 9) and one flaked and lightly ground greenstone chunk (Fig. 10) (Table 13). Most of this material derives from Structure 1 (63.3% by count). One artifact in particular is unique among all Black Warrior Valley archaeological assemblages (Knight, personal communication): a greenstone celt preform, weighing 502.6 grams and having been knapped into a thin rectangle (Fig. 10). One side is lightly ground, as if a person abraded it against a flat rock for only a few seconds. It is impossible to determine why this large piece of exotic stone was discarded. Perhaps a misplaced hammerstone blow removed too large a flake and rendered the piece useless, though this is unlikely given the practice of constant greenstone recycling discovered by Wilson (2001) at the Moundville site. The significance of the artifact is moot, however, for it unfortunately remains unprovenienced. Still, if it is true that most greenstone was imported into the Moundville region as finished tools or late stage preforms that were reworked time and again into other items, then unpolished greenstone chips and large chunks of discarded greenstone, whether ground or not, are rare things indeed. They are all, however, present at the Powers site. Moreover, the implications of a celt preform found at a rustic site like the Powers site are significant because this production evidence is contrary to the expectations of the Welch Moundville political economy model, which posits that production of items from nonlocal materials, including greenstone celts, occurred exclusively at the Moundville site under the aegis of elites.

Fig. 9. Unpolished greenstone chips from the Powers site.

Fig. 10. Celt preform from the Powers site. Notice evidence of light grinding in the lower right portion of the artifact.

Tool Type	Structures			Outside of Structures	Total
	#1	#2	#3		
Hammerstone	0	7	0	0	7
Saw	5	3	1	5	14
Abrader	3	2	0	1	6
Metate	2	1	0	0	3
Chisel	1	1	0	0	2

Table 14. Ground stone crafting tools from the Powers site.

A variety of ground stone crafting tools were recovered from the Powers site. These include 7 hammerstones, 14 ferruginous sandstone saws, 6 sandstone abraders, three sandstone metates, and 2 greenstone chisels (Table 14). These tools imply a range of crafting activity. The saws (Fig. 11), abraders, and metates (Fig. 12) imply lapidary work, the chisels (Fig. 13) imply coarse woodworking, and the hammerstones were probably used in flintknapping. Use wear patterns on the majority of these hammerstones, which all came from Structure 2, are what one would expect if used to knap the naturally small size of quartz and Tuscaloosa Gravel pebbles. Four exhibit numerous pecks on their longer, flatter sides, evidence of bipolar flaking, a technique which requires a strong downward whack onto a round chert or quartz pebble that rests on an anvil stone (Fig. 14). If performed correctly, the blow cracks the pebble into two more or less equal halves that lend themselves to the removal of blade-like flakes. These hammerstones support the conclusion made earlier that Powers site residents were taking raw pieces of local material and making diminutive tools out of them on site.

Fig. 11. Ferruginous sandstone saws from the Powers site (worked edges generally facing downward).

Fig. 12. Sandstone metate from the Powers site.

Fig. 13. Fragments of greenstone tools from the Powers site. The artifacts on the left are broken chisels. Those on the right are celt fragments.

Fig. 14. Well-used quartzite hammerstone from the Powers site with use wear indicative of both direct percussion and bipolar flaking.

Fig. 15. Fragmented slate pendant from a posthole in Structure 2 at the Powers site.

Artifact Type	Structures			Outside of Structures	Total
	#1	#2	#3		
Celt	1	1	0	0	2
Polished Chip	3	2	0	3	8
Palette	3	1	0	3	7
Discoidal	0	2	0	0	2
Pendant	1	1	0	1	3

** near complete (3 fragments); polished and drilled red slate

Table 15. Ground stone craft items (all fragments) from the Powers site.

Material	Structures			Outside of Structures	Total	
	#1	#2	#3			
Ground Ferruginous Sandstone	123.3	556.3	365.8	313.0	313.0	313.0
Ground Fine Gray Micaceous Sandstone	2434.6	2813.8	15.5	1684.2	1684.2	1684.2
Greenstone	152.0	79.5	0.0	770.1	1001.6	836.4

Table 16. Weights of local and nonlocal stone used in lapidary work at the Powers site.

Fig. 16. Fragmented limonite pendant from a posthole in Structure 1 at the Powers site.

Fragments of finished or near finished ground stone craft items were also recovered at the Powers site. These include 2 greenstone celts, 8 polished greenstone chips, 7 fine gray micaceous sandstone palette fragments, 2 discoidals (including one of quartz), and 3 pendants (Table 15). Both celts had been discarded after breaking during use, another conspicuous case of wasted greenstone. One discoidal was laboriously crafted from quartz while the other was of fine gray micaceous sandstone, outcrops of which can be found within as little as two kilometers of the Powers site (Redwine n.d.). Also, one pendant fragment of fine gray micaceous sandstone was found in the course of the 1991 field school. Two near complete but shattered pendants derive from features at the

Powers site. One fragmented pendant with three small holes drilled through its upper portion comes from near the central post of Structure 2 (Fig. 15). It is undecorated save for a possible engraved line on one surface. The other pendant is more elaborate, with two holes drilled side by side through the top, one drilled near the middle and a "swastika" design in the Hemphill style engraved in between (Fig. 16). This was the only stone artifact engraved with recognizable Moundville iconography recovered at Powers.

Analysis of Pride Place site (1Tu1) Archaeological Materials

In this section, I quantify and summarize lithic artifacts from the Pride Place site (1Tu1), a small nonmound site located on a bluff above the Black Warrior River and on the border of the Fall Line Hills region. Most of the analysis of artifacts from the Pride Place site was by archaeologists in the University of Alabama Office of Archaeological Research (OAR). Recorded on data sheets, the results remain unpublished.

Pride Place Chipped Stone Debitage

In my examination of the records and collections, I was only able to locate a very small fraction (2.3%) of debitage from the site, which I consider insufficient for the purposes of mass analysis and individual flake attribute analysis. However, Meeks (n.d.) identified abundant evidence of the familiar Mississippian microlithic industry at the Pride Place site – cores, blade-like flakes, and bit tools. Because OAR archaeologists analyzed the same variables as I did for the Powers and Fitts site assemblages, I have

Chipped Stone Debitage	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
from features	3332 (28.4%)	455 (3.9%)	346 (3.0%)	4133 (35.0%)
not from features	5919 (50.5%)	1137 (9.7%)	531 (4.5%)	7587 (65.0%)
Totals	9251 (78.9%)	1592 (13.6%)	877 (7.5%)	11720 (100.0%)
	10843 (92.5%)		877 (7.5%)	11720 (100.0%)

Table 17. Chipped stone debitage raw material at the Pride Place site.

applied these data to this research.

In all, 11,720 pieces of debitage were recovered during OAR excavations at the Pride Place site, 877 (7.5%) of which consisted of nonlocal material (Table 17). However, because occupation at the site stretches back over 4,000 years (as indicated by Late Archaic Little Bear Creek projectile points found there), I confine my analysis of debitage to Moundville III feature data. An overwhelming majority, 3332 (91.6%), of the 4133 flakes from features were of local stone; 346 (8.4%) flakes were nonlocal stone (Table 17). Here as elsewhere in Moundville's hinterlands, the Mississippians relied heavily upon locally available materials for use in making small chipped stone tools.

Pride Place Chipped Stone Tools and Crafting Evidence

Meeks (n.d.) analyzed the chipped stone tools. However, because his analysis examined tools on far more variables than mine, I have condensed some of his categories for the purposes of compatibility with my analysis. For example, his Madison and Hamilton point categories are lumped into my triangular point category. Likewise, his amorphous cores, microblade cores, and core fragments are here reported together as cores.

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	25	4	14	43
Utilized Flake	4	0	0	4
Core	15	3	4	22
Drill/Perforator	0	0	1	1
Microdrill	23	2	6	31
Triangular Point	44	9	9	62
NonMississippian PPK	1	1	3	5

Table 18. Chipped stone tools from the Pride Place site.

Meeks recognized 43 blade-like flakes (14 of nonlocal material), four utilized flakes of local material, 22 cores (four of nonlocal material), one drill of nonlocal material, 31 microdrills (six of nonlocal material), and 62 triangular points (nine of nonlocal material), plus five non-Mississippian projectile points not included here (Table 18). Taken together, the blades, cores, microdrills, and their methods of manufacture suggest that the Pride Place site's Mississippian residents were practicing the same kinds of microlithic technologies as Mississippians in other parts of the Southeast including Illinois, Georgia, Florida, Texas, and Alabama (Ensor 1991; Meeks n.d.; Pope 1989). While most Mississippian microlithic industries are associated with shell bead manufacture (Ensor 1991; Johnson 1987; Pope 1989, 1994; Yerkes 1983, 1989), little shell was recovered in excavations at the Pride Place site despite the presence of blades, cores, and microdrills. For this reason, Meeks took his analysis a step further by conducting use wear analysis on a random sample of 20 microtools from the site, thereby revealing a range of activities, none of which involved shell working. Nine exhibited wear patterns that suggest the engraving of sandstone (i.e., pronounced striations running perpendicular to the working bit) (Meeks n.d.), a finding entirely consistent with the interpretation of Pride Place as a site where objects were produced from fine gray micaceous sandstone. Three other microtools showed evidence of bone drilling or engraving. Another possessed use wear indicative of hide perforation. The remaining seven microtools did not exhibit use wear traces indicative of utilization (Meeks n.d.). The Pride Place site chipped stone assemblage evidences a variety of activities including hide perforation, cutting, bone drilling or engraving, and sandstone engraving.

Pride Place Ground Stone Artifacts and Crafting Evidence

The assemblage of ground stone debris at Pride Place clarifies why some archaeologists suggest that there was once a sandstone workshop there (Sherard 1999). Excavations yielded 2549 ground pieces (weighing 51,950.1 gm), 65 polished pieces (weighing 772.9 gm), 14 sawn pieces (weighing 1244.5 gm), and 1 engraved piece (weighing 0.5 gm) of fine gray micaceous sandstone, 107 ground pieces (weighing 2529.9 gm) and 1 polished piece (weighing 3.7 gm) of ferruginous sandstone, and 181 pieces (weighing 8012.0 gm) of ground brown sandstone (Table 19).

What ground stone objects were crafted at Pride Place? Archaeologists recovered a complete circular paint palette with 24 notches spaced around its edges and an incised line on one face (Fig. 17), a fragment of a circular palette with a scalloped edge and paint residue, 8 irregular fragments of paint palettes (two with possible paint residue and one with a score mark) (Fig. 18), a fragment of a rectangular palette (Fig. 18), a fragment of a palette of unidentifiable shape (with possible paint residue) (Fig. 18), 4 pendant fragments of fine gray micaceous sandstone (Fig. 19), and 30 ground fine gray micaceous discoidals (Fig. 20) (Table 20).

Treatment	Fine Gray Micaceous Sandstone		Ferruginous Sandstone		Brown Sandstone		Greenstone	
	count	*weight (gm)*	*count*	*weight (gm)*	*count*	*weight (gm)*	*count*	*weight (gm)*
Ground	2549	51,950.1	107	2529.9	181	8012.0	0	0.0
Polished	65	772.9	1	3.7	0	0.0	2	1.2
Sawn and/or Snapped	14	1244.5	0	0.0	0	0.0	0	0.0
Engraved	1	0.5	0	0.0	0	0.0	0	0.0

Table 19. Crafting Debris from the Pride Place site.

Artifact Type	Count
Celt	3
Polished Greenstone Chip	3
Palette	12
Discoidal	30
Pendant	4

Table 20. Ground stone craft items from the Pride Place site.

Tool Type	Count
Hammerstone	15
Saw	5
Abrader	9
Metate	1

Table 21. Stone tools from the Pride Place site.

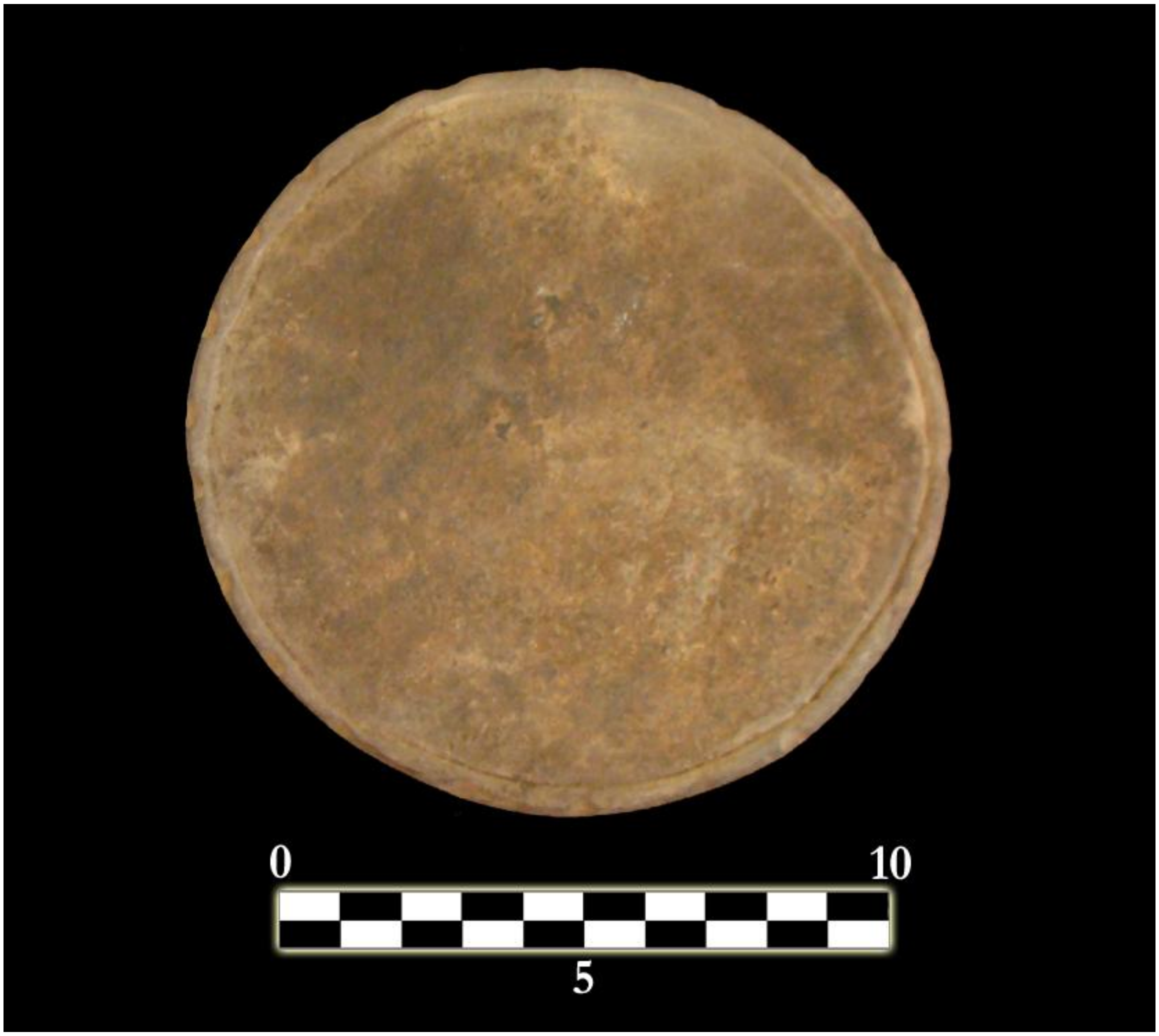

Fig. 17. Circular, notched stone palette from a late prehistoric burial at the Pride Place site.

Fig. 18. Palette fragments from the Pride Place site.

Fig. 19. Other objects found at the Pride Place site and crafted of fine gray micaceous sandstone. Bottom artifact is a celt fragment. The rest are pendant fragments.

Fig. 20. Select stone discoidals from the Pride Place site.

Clues to how these objects might have been made come in the form of well-worn tools that were also found at the Pride Place site, including 15 hammerstones, 5 ferruginous sandstone saws, 9 sandstone abraders, and 1 sandstone metate (see Table 21). Hypothetically, sandstone palette production took several steps, each of which is suggested by the Pride Place lithic assemblage. First, fist-sized hammerstones were used to pound excess material from around the edge of sandstone blanks carried from nearby outcrops of the Pottsville formation. This step would have produced abundant sandstone shatter; 19,315 pieces of unmodified sandstone weighing a total of 34,932.0 grams were recovered. Second, sandstone abraders were used to grind blanks to a uniform thickness. Some palettes evidently never made it past this step. Rather, they were put to use as suggested by irregularly shaped palettes possessing paint residue. Third, ferruginous sandstone saws were used to score lines in the ground blanks and then with hammerstones the blanks were snapped along the scores, resulting in a more-or-less circular or rectangular piece. Saws are not necessary for this step. The piece could have been roughed into shape during the first step. Whatever the case, the fourth step consisted of smoothing the rough edges with a sandstone abrader. Many palettes never progressed past this step, but many examples recovered at Moundville, Pride Place, and elsewhere were embellished with notches or scallops and their surfaces engraved with Moundville iconography. Though no palettes with engraved iconography were found at the Pride Place site, archaeologists did recover one whole palette with notches and a fragment of another with a scalloped edge. Another 30 fine gray micaceous sandstone discoidals (whole and fragments) and two celt fragments of the same material suggest that the inhabitants of the Pride Place crafted more than just palettes from the Pottsville stone, though most were made with as much care and skill. In addition to these things, one greenstone celt (recycled from a larger celt) and three polished greenstone chips were also recovered from the Pride Place site (see Table 20).

Analysis of Fitts site (1Tu876) Archaeological Materials

The Black Warrior Valley survey under the direction of Jim Knight and Jennifer Myer visited the Fitts site twice, once in 2002 and again in 2003. Thousands of artifacts were recovered as a result of each brief visit. Here I will discuss all of those made of stone. Most of the materials discussed below were analyzed by Myer (2003), and Steven

Barry (2004), who conducted Master's research on the Fitts site's chipped stone assemblage. Barry recorded the same variables as this research, so these data are comparable. Chipped stone artifacts recovered from the Fitts site in 2003, however, were not available for Barry's analysis, and so were analyzed by myself in accordance with the methods outlined in chapter four.

Size Grade	Local Material			Nonlocal Material		Total
	Tuscaloosa Gravel		*Local Quartz*	with cortex	without cortex	
	with cortex	without cortex				
.01-.49"	1308 (57.8%)	357 (15.8%)	24 (1.0%)	45 (2.0%)	51 (2.3%)	1785 (78.9%)
.50-.99"	385 (17.0%)	22 (1.0%)	21 (0.9%)	10 (0.4%)	6 (0.3%)	444 (19.6%)
1.0-1.99"	27 (1.2%)	0	6 (0.2%)	0	0	32 (1.4%)
>2.0"	0	0	0	0	0	0 (0.0%)
Totals	1720 (76.0%)	379 (16.8%)	51 (2.3%)	55 (2.4%)	57 (2.5%)	2262 (100.0%)
	2099 (92.8%)		51 (2.3%)	112 (4.9%)		2262 (100.0%)
	2150 (95.1%)			112 (4.9%)		2262 (100.0%)

Table 22. Chipped stone debitage from Mississippian features at the Fitts site.

Material	weight from features	Total
Local Chert	5053.2	5560.2
Local Quartz	507.0	
Nonlocal Knapping Stone	158.3	158.3

Table 23. Weights of local and nonlocal knapping stone from the Fitts site.

Fitts Chipped Stone Debitage

Two thousand two hundred and sixty-two pieces of chipped stone debitage were recovered from Mississippian features at the Fitts site, 2150 (95.1%) of which were of locally available stone, leaving 112 (4.9%) of nonlocal material. In ratios similar to those yielded by both the Powers site (1Ha11) and the Pride Place site (1Tu1), Fitts site excavations yielded 1689 (74.7%) small, 428 (18.9%) medium, and 33 (1.5%) large pieces of local debitage, and 96 (4.3%) small and 16 (0.7%) medium pieces of nonlocal debitage (see Table 22). Again, note the assemblage's heavy bias in favor of smaller flakes, one indication of Mississippian microlithic technology. That 80.3% of the chert debitage (n=1775) retained dorsal cortex indicates that most chipped stone tools found at the Fitts site underwent primary reduction there. The assemblage is dominated by small flakes possessing cortex, evidence that the Fitts site residents made their own chipped stone tools and made them small.

Fitts Chipped Stone Tools

Some of these tools remained at the site until recovered by Black Warrior Valley survey operations. They include 24 blade-like flakes (four of nonlocal material), 26 utilized flakes (all of local material), 34 cores (one of nonlocal material), 9 drills (all of local material), 55 microdrills (three of nonlocal material), 4 scrapers (all of local material), 1 Mill Creek hoe chip, 19 bifaces (six of nonlocal material), one local material triangular point, and one nonlocal material nonMississippian denticulate of unspecified type (see Table 24).

A Mill Creek hoe chip indicates that though the occupation of the Fitts site was humble relative to nearby mound centers, it was not isolated from larger Mississippian

Chipped Stone Tool Type	Local Material		Nonlocal Material	Total
	Tuscaloosa Gravel	*Local Quartz*		
Blade-like Flake	20	0	4	24
Utilized Flake	24	2	0	26
Core	38	0	1	39
Drill/Perforator	8	1	0	9
Microdrill	52	0	3	55
Scraper	4	0	0	4
Hoe Chip	0	0	1	1
Biface	13	0	6	19
Triangular Point	1	0	0	1
NonMississippian PPK	0	0	1	1

Table 24. Chipped stone tools from the Fitts site.

social and economic interaction spheres. In fact, no other artifact encountered during this research traveled a greater distance from its source than this Mill Creek hoe chip. Mill Creek chert hoes derived from about fourteen rural workshops in southeastern Illinois and filtered through trade systems across the Southeast (Cobb 2000). While *de rigueur* for the average Mississippian farmer in the Central Mississippi Valley, they rarely made their way to sites in the Black Warrior Valley.

By and large, these chipped stone tools reinforce conclusions drawn from debitage. With the exception of the hoe chip which came from a large, nonlocally produced biface of Mill Creek chert, the Fitts site chipped stone tools were achieved by flintknappers employing microlithic techniques. Cores, blades, expedient flake tools, and microdrills are relatively abundant. Though microdrills elsewhere are associated with shell bead drilling (Ensor 1991; Johnson 1987, Pope 1989, 1994; Yerkes 1983, 1989), examinations of microwear on those from the Pride Place site, show multiple uses (Meeks n.d.). Therefore, one cannot assume that the 55 microdrills from the Fitts site are

Treatment	Fine Gray Micaceous Sandstone	Limonite	Sandstone (unspecified)	Ferruginous Sandstone
Ground	17	0	28	6
Sawn and/or Snapped	2	1	4	0

Table 25. Crafting debris from the Fitts site.

associated with shell bead manufacture, especially given the miniscule amount of shell recovered there.

Fitts Ground Stone Artifacts and Crafting Evidence

A small amount of ground stone debris was found at the Fitts site including 17 pieces of ground and 2 pieces of sawn and/or snapped fine gray micaceous sandstone, 1 piece of sawn limonite, 28 pieces of ground and 4 pieces of sawn and/or snapped sandstone, and 6 pieces of ground ferruginous sandstone (see Table 25). Mica scrap was also recovered. Overall, this debris seems excessively light considering the number of ground stone crafting tools found at the site, especially sandstone saws.

The Fitts site yielded 16 hammerstones (Fig. 21), 14 abraders, two metates, and a staggering 143 ferruginous sandstone saws (see Table 26) (Fig. 22), an unprecedented quantity, even compared to the Moundville site. Several of the abraders exhibited multiple deep “U” and “V”-shaped grooves (Fig. 23). All saws had a single ground edge with two exceptions that had two ground edges. This is perhaps an indication that tabular ferruginous sandstone was a locally abundant and easily accessed resource for the inhabitants of the Fitts site. If it had been otherwise, one would expect more saws with multiple used edges, as craftsmen would have used each saw until it was completely inhabitants of the Fitts site. If it had been otherwise, one would expect more saws with multiple used edges, as craftsmen would have used each saw until it was completely exhausted.

Treatment	Fine Gray Micaceous Sandstone	Limonite	Sandstone (unspecified)	Ferruginous Sandstone
Ground	17	0	28	6
Sawn and/or Snapped	2	1	4	0

Table 25. Crafting debris from the Fitts site.

Tool Type	Count
Hammerstone	16
Saw	143
Abrader	14
Metate	2

Table 26. Ground stone crafting tools from the Fitts site.

Fig. 21. Three quartzite hammerstones from the Fitts site, all appearing to have been used in bipolar flaking. The artifact on the right may also have been used as an abrader.

Fig. 22. Some ferruginous sandstone saws from the Fitts site (1Tu876).

Fig. 23. Two abraders from the Fitts site. On the left, an abrader with two "V"-shaped grooves on its ground surface. On the right, an abrader with three "U"-shaped grooves (seen in profile on the right side of the artifact).

Fig. 24. A selection of pendant fragments from the Fitts site.

Artifact Type	Count
Celt	6
Polished Greenstone Chip	9
Palette	1
Discoidal	5
Pendant	7

Table 27. Ground stone craft items from the Fitts site.

Finished and near finished craft items from the Fitts site provide clues as to what may have been made with the tools listed above. Six greenstone celts (one reused as a hammerstone), 9 polished greenstone chips, a palette fragment, 5 stone discoidals, and 7 pendant fragments were recovered (Fig. 24) (Table 27). All pendant fragments were highly polished. Some were drilled, but appear to have broken in the process. The pendant fragments possessed well ground "U" and "V"-shaped edges. Correspondingly, several of the abraders exhibited multiple deep "U" and "V"-shaped grooves. Two kinds of materials were used to make these pendants – a pink iridescent slate and a ferruginous slate – but only one of the pendant fragments was made of the latter. A third material is hinted at by a sawn limonite fragment, an artifact unique among all of the lithic material included in this research. Limonite pendants have been recovered from other sites such as Powers (see Fig. 16). Myer (2003) suggested that pendants were made at the Fitts site. From my analysis, I have also reached the same conclusion, based on the relative abundance of sandstone saws, microdrills, and drilled pendant fragments.

Comparing the Sites

In what follows, I compare each site in terms of relative abundances of certain artifact classes, a necessary step in determining the range of crafting activity and differences in access to raw materials, if any, present at late Moundville III to early Moundville IV nonmound sites. Abundance measures, described in the previous chapter, were used to facilitate comparison of the different archaeological locales. These formulae make it possible to compare and contrast artifact counts from different excavation volumes by comparing them against counts of a ubiquitous artifact type, ceramic sherds in this case. Ceramic type-variety counts, based on the classification system in common use on Moundville sites (Steponaitis 1983), were available for most of the contexts at Powers, Pride Place and Fitts, but only the tabulations from Fitts were published (Myer 2003). Ceramics from Powers Structures 1 and 2 were analyzed under the supervision of Dr. Richard Krause and Dr. Jim Knight, and Pride Place ceramics by

OAR staff archaeologists. I sorted ceramics from contexts that had not yet been analyzed, including all those recovered at the Powers site by the 1991 University of Alabama field school.

I divided the data by temper (whether shell or otherwise) and surface treatment (unburnished or burnished) (Steponaitis 1983). In Tables 28, 29, and 30, "Not Shell-Tempered" consists of Baytown Plain, Mulberry Creek Cord-Marked, Alligator Incised, and Benson Punctated; "Unburnished Shell-Tempered" is Mississippi Plain, Moundville Incised, Alabama River Incised, and Barton Incised; and "Burnished Shell-Tempered" is composed of Bell Plain, Carthage Incised, and Moundville Engraved. Counts were further divided by context, either feature or nonfeature.

Sherd Type	Structures			Outside Structures	Total
	#1	#2	#3		
Not Shell-Tempered	210 (4.0%)	61 (1.2%)	84 (1.6%)	3037 (57.2%)	3392 (64.0%)
Unburnished Shell-Tempered	308 (5.8%)	492 (9.3%)	21 (0.4%)	594 (11.2%)	1415 (26.7%)
Burnished Shell-Tempered	108 (2.0%)	226 (4.3%)	6 (0.1%)	152 (2.9%)	492 (9.3%)
Total	626 (11.8%)	779 (14.8%)	111 (2.1%)	3783 (71.3%)	5299 (100.0%)

Table 28. Powers site (1Ha11) ceramic assemblage.

Sherd Type	count from concerned features	all other contexts	Total
Not Shell-Tempered	50 (0.9%)	1485 (26.5%)	1535 (27.4%)
Unburnished Shell-Tempered	347 (6.2%)	2560 (45.7%)	2907 (51.9%)
Burnished Shell-Tempered	84 (1.5%)	1072 (19.1%)	1156 (20.7%)
Total	481 (8.6%)	5117 (91.4%)	5598 (100.0%)

Table 29. Pride Place site (1Tu1) ceramic assemblage.

Sherd Type	count from features	count not from features	Total
Not Shell-Tempered	14 (0.2%)	293 (4.7%)	307 (4.9%)
Unburnished Shell-Tempered	4025 (64.7%)	1222 (19.6%)	5247 (84.3%)
Burnished Shell-Tempered	524 (8.4%)	152 (2.4%)	676 (10.8%)
Total	4563 (73.3%)	1667 (26.7%)	6230 (100.0%)

Table 30. Fitts site (1Tu876) ceramic assemblage.

Some contexts yielded very few potsherds. Since similar recovery methods were used in these excavations, variation in the pottery counts are probably the result of past human behavior, such as differences in debris removal or accumulation rates. This is most evident in Structure 3 of the Powers site where, despite being subject to the largest block excavation to have taken place there, only 111 (27 of which are shell-tempered) sherds were recovered (Table 28). The structure's abnormally large size suggests that it is a nondomestic structure (Redwine n.d.; also see Wilson 2005 for examples of large structures at Moundville). If so, it may have been kept relatively clean of debris compared to common domestic structures. This activity could account for the low ceramic yield of excavations there.

Most other contexts, however, offered at least hundreds of pottery sherds. Structures 1 and 2 of the Powers site yielded 626, 416 (66.5%) of which were shell-tempered, and 727 sherds, 718 (98.8%) of which were shell-tempered, respectively. Extrastructural contexts there yielded 3783 sherds, 746 (19.7%) of were shell-tempered. In total, the Powers site yielded 5299 sherds, 1907 (36.0%) of which were shell-tempered (Table 28). In fact, comparable numbers of sherds were recovered from the totality of excavations from each site, though proportions of nonshell-tempered to shell-tempered

	Chipped Stone Debitage Index	Nonlocal Chipped Stone Debitage Index	Microdrill Index	Sandstone Saw Index	Greenstone Index
Powers (all contexts)	6177.2	14.5	78.7	73.4	78.7
Powers Structure 1	20,841.3	14.8	144.2		
Powers Structure 2	1838.4	25.2	13.9		
Powers Structure 3	63,333.3	25.3	1851.9		
Pride Place	96,403.7	1285.2	76.3	12.3	14.8
Fitts	3884.9	4.9	92.9	241.4	25.3

Table 31. Abundance measures for specific artifact classes at the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

do differ from site to site and context to context. The Pride Place site yielded 5598 total sherds, 4063 (72.6%) of which were shell-tempered (Table 29). Finally, the Fitts site yielded 6230 sherds, 5923 (95.0%) of which were shell-tempered (Table 30).

Comparisons of the sites using abundance measures make it clear that they are more different than similar. Microdrills were only slightly more abundant at the Fitts site

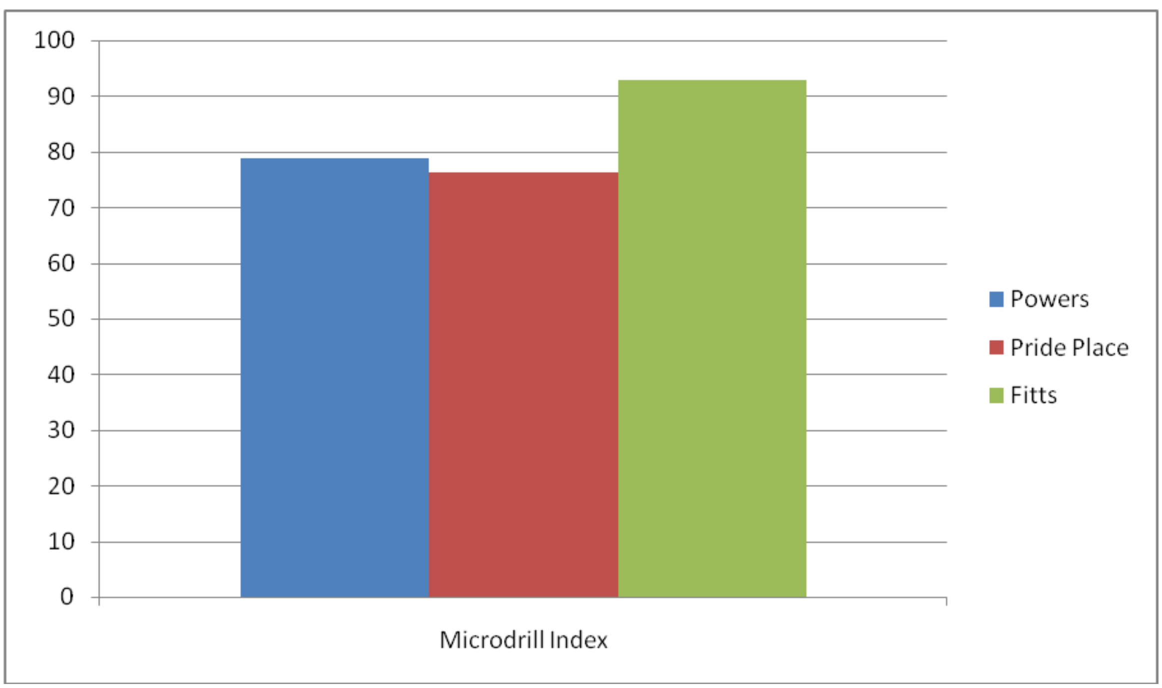

Fig. 25. Bar graph displaying microdrill abundance measures for the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

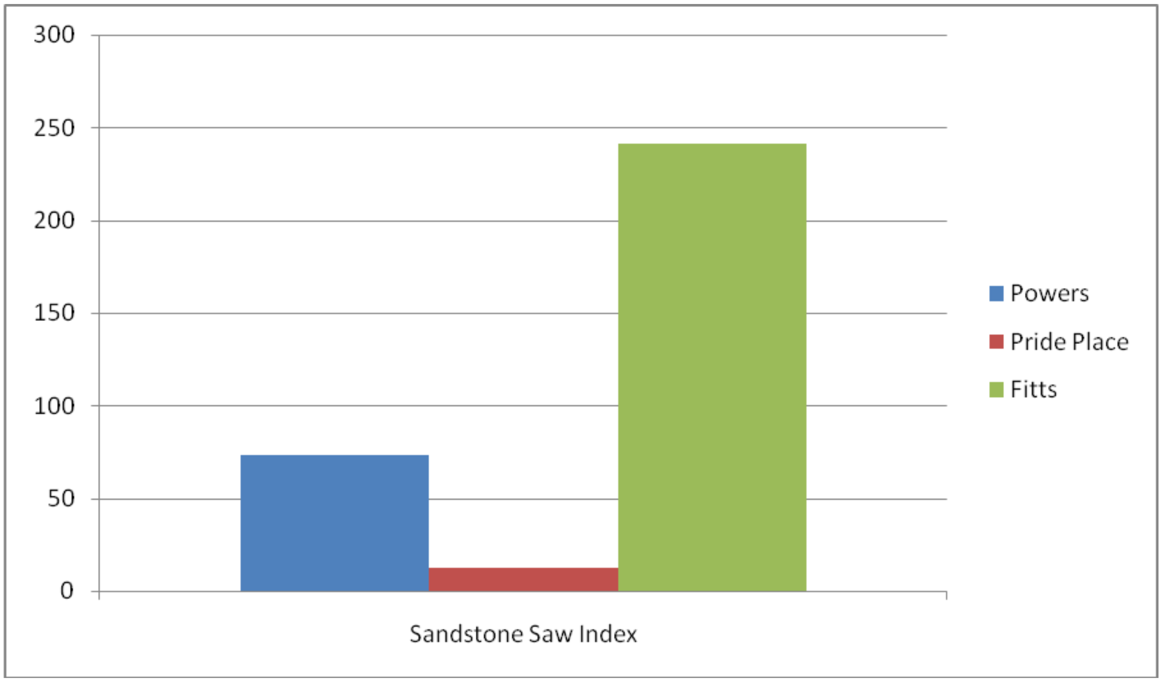

Fig. 26. Bar graph displaying sandstone saw abundance measures for the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

than at the Powers site and Pride Place site (Fig. 25). In other words, each site yielded roughly the same amount of microdrills in relation to shell-tempered sherd counts. This is most likely due to the microdrill's versatility, a point demonstrated by Meeks's usewear analysis discussed above. Though future use-wear analyses may determine for what each individual microdrill was used, it can be assumed based on other such analyses (e.g., Ensor 1991; Johnson 1987; Pope 1989, 1994; Yerkes 1983, 1989) that most microdrills were used to perforate shell beads.

The relative abundances of microdrills contrast sharply with those of more specialized tools such as ferruginous sandstone saws. Sandstone saw abundance indices are proxies only of lapidary work. Not surprisingly, the Fitts site sandstone saw count produced the highest index by a factor of 3.29 over the Powers site index and by a factor

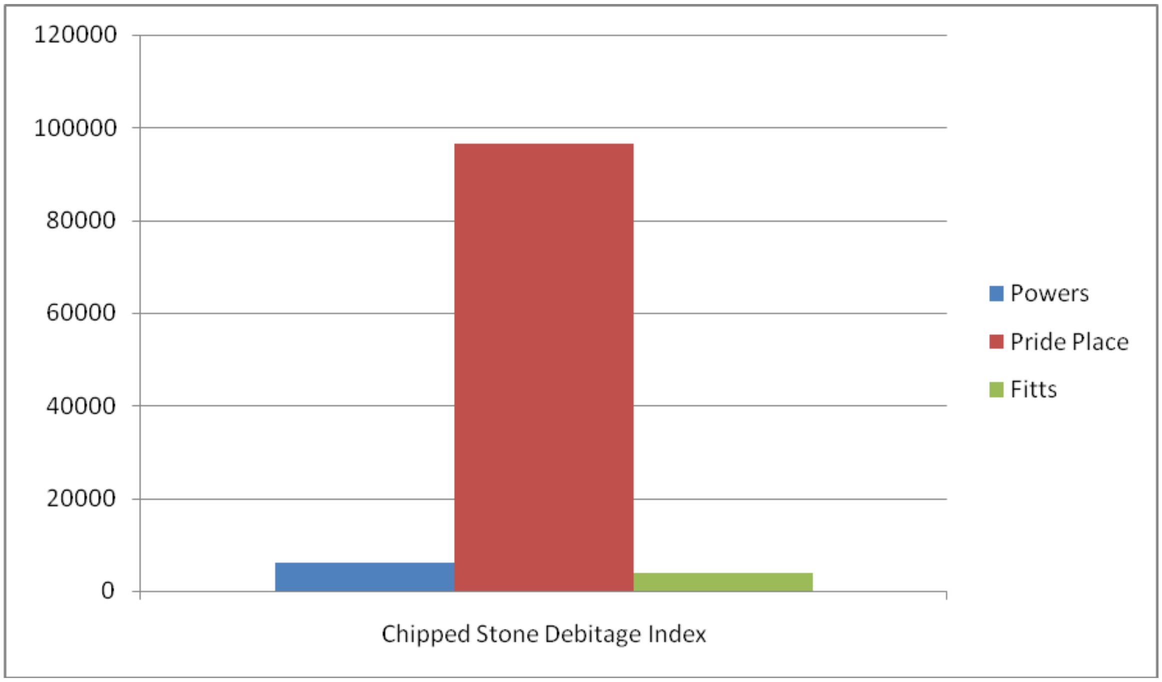

Fig. 27. Bar graph displaying chipped stone debitage abundance measures for the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

of 19.63 over the Pride Place site index (Table 31) (Fig. 26). That the abundance of sandstone saws at the Fitts site is so much greater than that of the Pride Place site where a great quantity of sandstone debitage was recovered can be explained with reference to the nature of crafting items from slate versus crafting items from sandstone. Fine gray micaceous sandstone is quite friable in comparison to slate, meaning it can be shaped without having to score lines with ferruginous sandstone saws. Hammerstone blows can crush a predictable edge into fine gray micaceous sandstone that can later be smoothed and rounded with sandstone abraders. Thin sheets of slate like those involved in pendant production, on the other hand, crack unpredictably unless first scored with saws. Perhaps this is why the Fitts site yielded relatively so many more saws than the Pride Place site despite the great quantity of stone debitage recovered from the latter.

The sites also produced very different relative quantities of chipped stone debitage, supposedly much greater than was anticipated when abundance measure

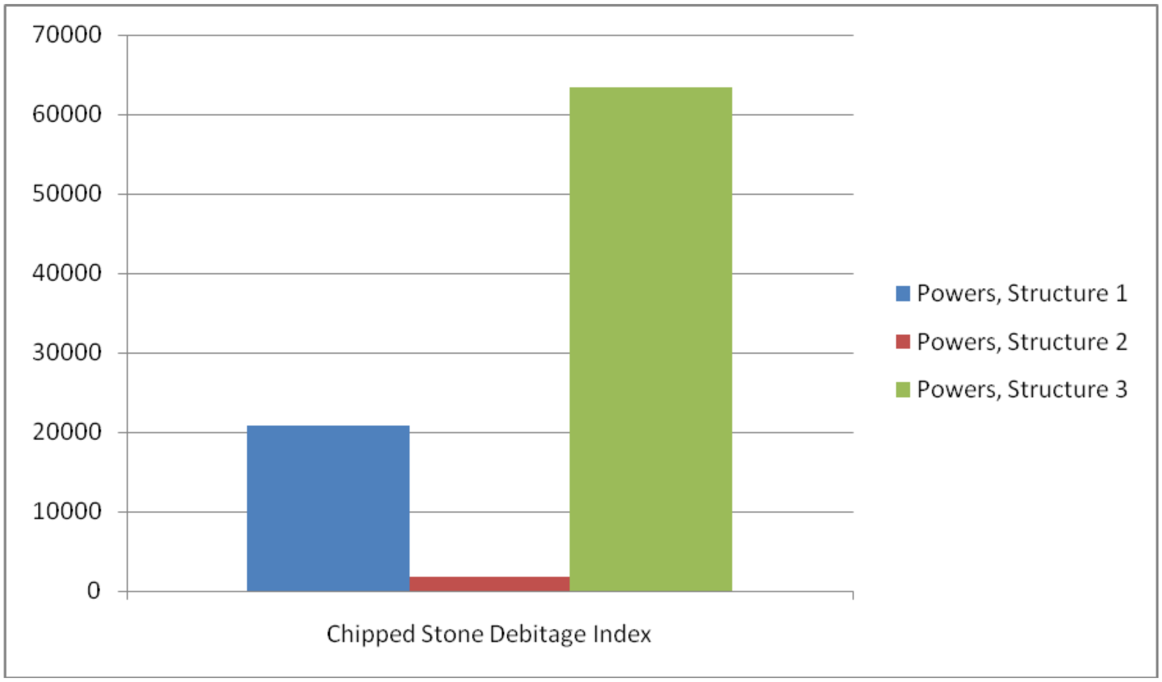

Fig. 28. Bar graph displaying chipped stone debitage abundance measures for Structures 1, 2, and 3 at the Powers site (1Ha11).

formulas were devised, for some of the resulting figures are higher than actual counts. I do not think that this is a flaw in the system. Rather, I think it highlights the terrific difference in terms of chipped stone debitage between mound top assemblages (for which abundance measures were devised) and rural nonmound site assemblages. While the Powers site debitage index is 6177.2, the structures produced different relative quantities of debitage. Structure 3, the largest structure but also the poorest in sherds (discussed above), generated an abundance measure 3.04 times greater (63,333.3) than that generated by Structure 1 (20,841.3), the smallest structure, and 34.45 times greater than that generated by Structure 2 (Table 31) (Fig. 28). Oddly, however, every hammerstone (n=7) recovered from the Powers site comes from Structure 2. The only conclusion to be drawn from this is that a hammerstone count is not a reliable index of flintknapping activity. They are tools to be curated, whereas chipped stone debitage is hazardous waste to be rapidly removed from high traffic areas. Thus, tools are more likely indices of a

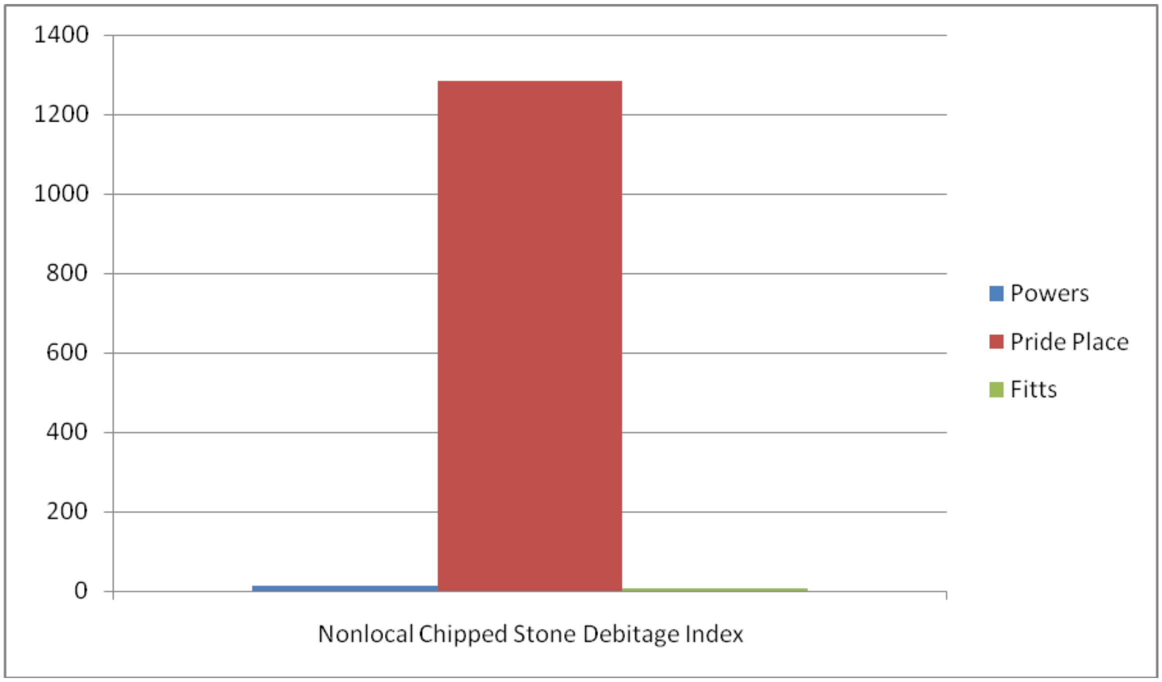

Fig. 29. Bar graph displaying nonlocal chipped stone debitage abundance measures for the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

crafter's residence and debitage is a more likely index of where he does his work. A flintknapper most likely lived in the vicinity of Structure 2, but the bulk of his flintknapping was done elsewhere.

Two abundance measures employed in this research address relatively how much exotic stone made its way to each sites – the nonlocal chipped stone debitage measure and the greenstone measure. The abundance measures indicate that the residents of Powers, Pride Place, and Fitts sites possessed unequal quantities of different types of exotic raw material. Excavations at the Powers site, for example, yielded 3.11 times greater greenstone abundance than excavations at the Fitts site and 5.32 time greater greenstone abundance than excavations at the Pride Place site (Table 31) (Fig. 30). As discussed earlier, excavations at the Powers site also produced more greenstone by weight, including a possible greenstone celt preform, than either of the other two sites. These greenstone abundance measures, however, hide an important aspect of the

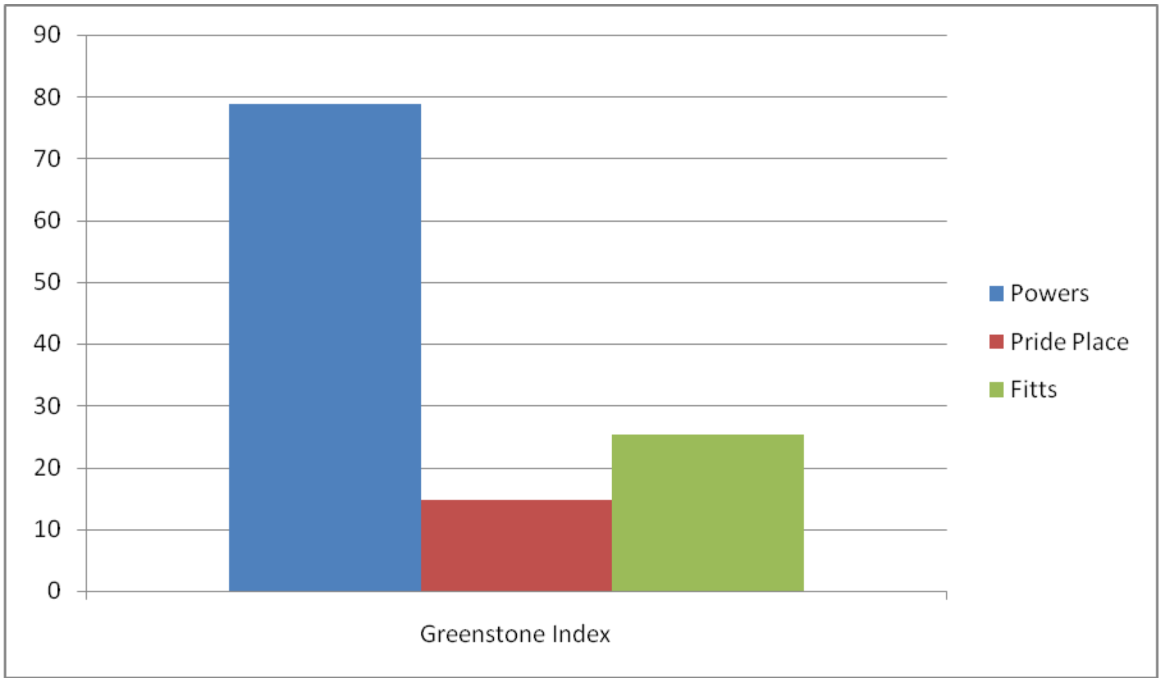

Fig. 30. Bar graph displaying greenstone abundance measures for the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876).

greenstone assemblages from each site, specifically that each consists in part of unpolished greenstone flakes. If exchange in raw greenstone and greenstone tools was as centralized as the Moundville political economy model suggests (Welch 1991), then one would not expect raw greenstone artifacts at any of the sites examined by the research, much less all three of them. In the end, it's not so much the quantity of greenstone found at each of these sites as it is the fact the any raw greenstone was found there at all. Nonlocal cherts and quartzites also made their way to rural nonmound sites in the Black Warrior Valley, though they account for a small fraction of the total knapping stone found at the sites included in this research. Nonlocal debitage was distributed relatively evenly between the three structures excavated at the Powers site, with Structure 1 yielding about half as much as Structures 2 and 3 (Table 31) (Fig. 31). All excavations there produced a measure 2.96 times higher than that produced by the Fitts site, but 88.63 times lower than that produced by the Pride Place site. Again, what matters most is that

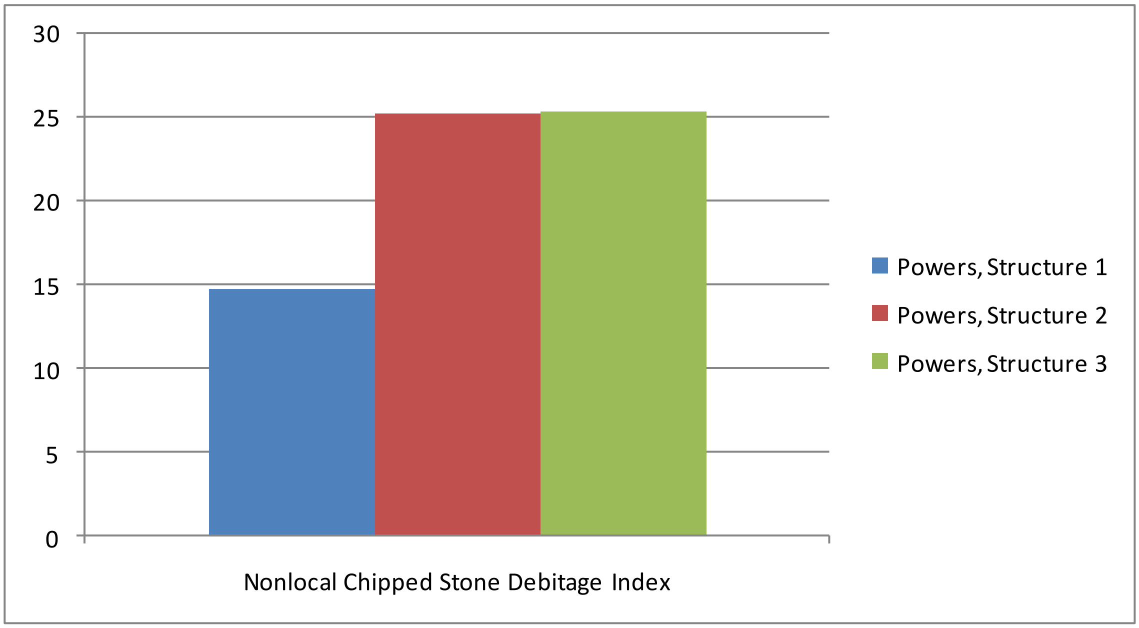

Fig. 31. Bar graph displaying nonlocal chipped stone debitage abundance measures Structures 1, 2, and 3 at the Powers site (1Ha11).

these rural Mississippians could get their hands on nonlocal raw material for use in making the same tools they made out of local raw material, a conclusion supported by mass debitage analysis and flake attribute analysis.

Crafting in Moundville's Hinterlands

This chapter has presented results of the mass debitage, flake attribute, and lithic artifact assemblage analyses from the Powers site (1Ha11), the Pride Place site (1Tu1), and the Fitts site (1Tu876), three rural nonmound sites occupied during the late Moundville III to early Moundville IV phases. Aspects of these data were then compared using abundance measure formulae that highlighted relative differences between the sites in terms of relevant artifact classes – total debitage, nonlocal chipped stone debitage, chipped stone microdrills, ferruginous sandstone saws, and greenstone artifacts.

The results of the mass debitage and flake attribute analyses indicate that the flintknappers of each site were practiced microlithic technologists, relying on small flakes struck from cores as blanks for the bulk of their chipped stone tools. Microdrills, triangular arrow points, gravers, and a host of other small tools could have been and probably were crafted from flakes at each site.

Analysis of ground and chipped stone tools indicate that a variety of crafting activity took place in Moundville's hinterlands during this time. Crafting debris such as pieces of ground, polished, sawn and/or snapped, and drilled stone in addition to broken and complete craft items like paint palettes, sandstone discoidals, and slate pendants corroborate conclusions made about what exactly took place at each site.

The Powers site produced the least amount of crafting tools and debris, but it did turn out the most greenstone by weight and relative abundance. In fact, the inhabitants of the Powers site had everything they needed in order to make their own greenstone tools – ferruginous sandstone saws, abraders, large grinding stones, and a decent quantity of the exotic material. Raw greenstone chips and a possible greenstone celt preform found at the site substantiate this claim.

Sandstone paint palettes and discoidals were made at the Pride Place site most likely by skilled crafters. A wealth of ground, polished, sawn, and raw sandstone debitage attest to this probability, as do hammerstones, abraders, metates, and bits and pieces of the craft items themselves. Indeed, a couple of complete sandstone palettes and several dozen discoidals derive from Mississippian features at the site. Microwear analysis of some chipped stone microdrills from the Pride Place indicates that more than the crafting of items from sandstone took place the site; they evidence bone engraving and drilling, hide working, and stone engraving.

Tools and debris suggest that slate pendants were made at the Fitts site. A tremendous number of ferruginous sandstone saws were recovered from excavation contexts there (only six were recovered in mound-top excavations at Moundville (Knight 2004)), as well as curious small abraders featuring parallel rows of deep grooves, the likely result of grinding pendant edges straight. The site also yielded many microdrills, but use wear analysis has not yet been conducted. As some pendants appear to have broken while being drilled, perhaps some of the microdrills were used to drill slate, an undoubtedly laborious task at best. It is also possible that other microdrills were used to perforate shell beads, a common use of these minute tools at other Mississippian sites.

Of all of the stone artifacts analyzed for this research, only one, a pendant found in a burial at the Powers site for which there is no evidence of onsite manufacture, was engraved with recognizable Hemphill iconography. All other engraving work consisted of a handful of artifacts featuring single short lines. Based on an apparent decline in Hemphill stylistic consensus during the late prehistoric period, Knight (1997) has argued that motifs and symbols that were formerly monopolized by elites were democratized. If this were the case, this thesis found no evidence that such iconography was applied at nonmound sites. In chapter six, these results and conclusions are considered in light of the Moundville political-economy model and the history of the Moundville chiefdom.

CHAPTER 6

CONCLUSIONS

In this chapter I evaluate Welch's (1991) political economic model for the Moundville chiefdom which proposes that access to exotic raw material and the production and consumption of prestige goods was restricted to the chiefdom's elite. Following this, I discuss one possible alternative to that model. Until now, few systematic comparisons of contemporary Black Warrior Valley sites have been attempted. Because archaeologists now know that Moundville underwent several sociopolitical transformations throughout its history (Knight and Steponaitis 1998), transformations that undoubtedly had economic repercussions, I felt it necessary to control for temporality in my sample. To this end, I have mustered data from three late Moundville III to early Moundville IV nonmound rural sites, the Powers site (1Ha11), the Fitts site (1Tu876), and the Pride Place site (1Tu1).

Lithic assemblages were the analytical focus of this study, for their durable quality makes them ideal lines of evidence reflecting the organization of a prehistoric economy (Cobb 2000; Welch 1991; Whittaker 1994). Three approaches to the farmsteads' lithic assemblages produced a good impression of the kinds and scale of activities that took place at each of the sites considered. Mass analysis of chipped stone debitage specified the form in which raw material arrived at a site and how it was used thereafter. Lapidary objectives were implied by tool kits, stone tool use wear, scrap material, the presence of complete or broken craft items, craft items in various stages of completion, and other artifacts present in the assemblages. Finally, abundance measures enabled comparison of artifact counts from differing excavation volumes by comparing them against counts of potsherds. Some of the resulting data contradict expectations produced by Moundville's political economic model. Some of them do not.

The remainder of this chapter I draw conclusions about the significance of this evidence with respect to the role of craft production and consumption in late Moundville III to early Moundville IV society. For reasons not yet understood, the authority of the Moundville paramounts dwindled and all but vanished over the course of this period, likely prompting a realignment of social relations in the Black Warrior Valley. It is in this context that these conclusions are presented.

Evaluating Moundville's Political Economy Model

As argued here and throughout this thesis, hinterland nonmound sites are crucial to a thorough understanding of Moundville's economy. That they have largely been ignored by archaeologists working the Black Warrior River Valley only amplifies the timeliness of a study such as this one. Political economy theorists posit that such sites contributed little, at least willingly, to the public economy of the Moundville polity. Instead, Welch (1991) implies that the hinterland inhabitants of the Moundville chiefdom received certain valued goods such as greenstone axes only once they had fulfilled their tribute obligations to their high-status superiors.

If single mound sites like the White site were inhabited by elite middlemen, as Welch (1991, 1996) and others (Steponaitis 1978) propose, then one would expect Moundville to have the most nonlocal stone, the White site (1Ha7,8), the late Moundville III single mound center upon which Welch based his formulation of Moundville's political economy model, to have less, and nonmound sites to have the least. Data presented herein considered alongside those presented in *Moundville's Economy* (Welch 1991) suggest no such patterning in the distribution of nonlocal material in Moundville's hinterlands. It is true that contemporaneous contexts on mound summits at Moundville retrieved about twice as much nonlocal chipped stone debitage as local (Knight 2008), the highest ratio by far yet recorded in the Black Warrior Valley, but beyond Moundville, nonlocal chipped stone has a sporadic distribution. Powers, Fitts, and Pride Place yielded percentages of nonlocal chipped stone debitage (14.5%, 4.9%, 3.0%, respectively) similar to those of the White site (1Ha7,8) (3.4%). Additionally, cores of nonlocal chert were recovered from each of the nonmound sites (see Chapter 5) but not from White (Welch 1991:158). Thus, while the cultural and geographic prominence of the Moundville site may have afforded its residents "first dibs" on exotic knapping stone, it seems as if it was acquired opportunistically by inhabitants of the hinterlands.

In any case, coercion through the withholding of nonlocal knapping stone may not have been a very successful tactic for Moundville elites. While highly tractable nonlocal cherts like Fort Payne and Bangor are preferable to local gravel cherts, they would only have been necessary in the production of large formal tools, something that neither nonmounded nor mounded residents made often. For the triangular points, microdrills, expedient flakes, and other petite tools commonly used during the Mississippian period (Ensor 1991; Pope 1989) and documented herein to have been made and used at the study sites (see Chapter 5), local gravels are more than adequate – they start off at about the right size, are rendered suitably tractable with heat-treating, and blanket large portions of the Black Warrior River valley. Of the Moundville political economy model's expectations, data presented in this thesis most strongly supports the proposition that "most tools made of chipped stone were made of locally available materials" (Welch 1991:152).

Data presented herein contradict the expectations of the Moundville political economy model in significant ways. The model states, for example, that tools and cores of nonlocal chipped stone arrived at hinterland sites as finished products (Welch 1991:159). There appears to be little difference in the way that local and nonlocal knapping stone was used at the study sites, however, for both local and nonlocal categories are dominated by similar ratios of small to medium-sized flakes. With the exception of utilized flakes, the same things were knapped from local and nonlocal stone – triangular projectile points, microdrills, blades, and cores.

Likewise, whereas the model posits the production of greenstone celts to have occurred exclusively at the Moundville site, this thesis documented the presence of unpolished greenstone chips in all three rural assemblages. There is a fundamental distinction to be drawn between polished and unpolished greenstone chips. Polished greenstone chips are relatively common artifacts; they are spalls from used axes. Unpolished chips, on the other hand, likely derived from the knapping of raw greenstone chunks. Furthermore, a possible axe preform was recovered in excavations at the Powers site, but as it remains unprovenienced it may or may not date to the Mississippian period. Granted, evidence of greenstone axe production at the sites considered in this thesis is sparse, yet the fact that there is any evidence whatsoever sharply contrasts with the Moundville political economy model's expectations concerning craft production, not to mention its expectations regarding the distribution of raw greenstone.

Another significant contradiction was the discovery of crafting debris and specialized tool kits for the production of nonutilitarian goods at the three nonmound sites. Moreover, debris and tools from Pride Place and Fitts are connected with the production of items thought to be restricted to ascribed status and elite contexts (Peebles 1978; Welch 1991:56-57), items variously labeled in Moundville literature as superordinate artifacts (Peebles 1974), status goods (Blitz 1993), prestige goods (Welch 1991), or display goods (Marcoux 2000, 2008). Specifically, the Pride Place site yielded approximately fifty thousand grams of ground Pottsville sandstone, grooved, snapped, crushed, and polished pieces of fine gray micaceous sandstone, small and large abraders, and well-used hammerstones, all associated with complete and broken paint palettes, some with scalloped or notched edges, most with pigment residue. The Fitts site yielded sawn and snapped, ground, and polished pendant fragments in addition to several finished and near-finished but broken pendants, curious deep-grooved abraders possibly used to smooth pendant edges, and an unprecedented amount (n=142) of ferruginous sandstone saws. An abundance of chert microdrills recovered from Mississippian features at Fitts may have been involved in drilling pendants (as a couple appear to have broken at this point) or may have been used to perforate marine shell beads as documented elsewhere in the Mississippian Southeast.

These data also contrast with a recent slightly stronger restatement of the political economy model by Marcoux (2008) who specifically addressed the production of display goods within the Moundville chiefdom. He argued that the production and consumption of display goods was restricted to elite contexts at the paramount center. He further proposes that display goods did not constitute a primary fund of elite power. While I agree with the latter statement, in this thesis, I have presented new data, unavailable to Marcoux, that do not support his conclusions concerning production and consumption insofar as they apply to the late Moundville III-early Moundville IV period.

A Decentralized View of Moundville's Economy

To reiterate, the data presented in this thesis apply only to the late Moundville III to early Moundville IV phase. It is likely that the nature of production and consumption changed through Moundville's history as surely as did many other aspects of the chiefdom's economic, social, and political structure. Since the formulation of Moundville's political economy model, archaeologists have demonstrated that the Moundville chiefdom underwent a significant social and political transformation during the Moundville III phase, one that saw a change in regional political dynamics, the splintering of kin segments, factions, and communities, and the abandonment of significant portions of the paramount center (Knight and Steponaitis 1998; Peebles 1987). In the vacuum left by the decline of the paramount center, a restructuring of social and political relationships surely developed. Mississippian occupation of the sites considered in this study coincided with and was probably affected by these developments. As suggested by the thousands of Mississippians who returned to Moundville to bury their dead among the long decayed yet unquestionably remembered house clusters of their ancestors (Wilson 2005), membership in the same group, be it a kin segment, faction, or community, likely remained fundamental to one's identity and, therefore, interaction with the rest of society.

If the Moundville chiefs ever were potentates of craft production, the data presented in this thesis suggest that their power in that capacity had waned by the late Moundville III-early Moundville IV phase. Prestige goods such as stone paint palettes and pendants were crafted at dispersed humble sites in Moundville's hinterlands. With the burden of dependency lifted from the valley's scattered communities, commoners would have been able to fulfill their social and ritual obligations unencumbered by the machinations of elite aggrandizers. But perhaps Moundville's economy never hinged upon the ambitions of an elite minority, and was instead embedded in the ritual and social obligations of every member of society. In such a "ritual economy," it is appeals to sacred authority, not chiefly threats, that sustain surplus production. If this was the case, then making, exchanging, and consuming socially valued goods were practices involved in the reciprocal negotiation of meanings, values, and power among segmented kin-groups (Mills 2004; Spielmann 2002; Wells 2006).

Archaeological correlates of a ritual economy have been identified at Moundville in contexts contemporaneous to and predating the rural occupations that were the focus of this thesis. Barrier's (2007) documentation of over-sized storage jars in off-mound residential groups, for example, indicates that non-elites retained control of their own staple surpluses for use as they saw fit. In his analysis of off-mound residential groups at Moundville, Wilson (2005) found a wide distribution of craft items and a class of abnormally large structures (dubbed "Class III structures") that most likely served as localized nexuses of ceremonial and ritual practices. Other locales at Moundville have yielded similar results (see Johnson 2005; Scarry 1995). Maxham's (2000) discovery of abundant serving ware and eclectic faunal material at a Moundville I phase nonmound site (1Tu66) suggests that hinterland Moundvillians periodically gathered at special function settlements to celebrate life transitions and harvests. As for access to imported raw material, Nanfro's (2007) systematic subsurface survey and testing of Moundville revealed a ubiquity of materials like mica and exotic knapping stone in all quadrants. Powers, Fitts, and Pride Place yielded similar evidence – a ubiquity of nonlocal material, specialized tool kits for crafting both alienable and inalienable objects, abundant production debris, the conspicuous consumption of palettes, pendants, and other display goods by way of burial (at the Powers and Pride Place sites) and utilization (evidenced by paint residues on palettes at the Pride Place site), and one Class III structure (i.e., the Powers site's Structure 3). Considering these data together with that compiled for the paramount center, it is clear that ritual was an omnipresent force in Moundville society.

These artifacts and features highlight not only the importance of ritual, but also the importance of the kin relations that structured ritual and social interaction. The kinds of display goods production documented in this thesis were not simply conducted anywhere and by anyone; they occurred in communities according, most likely, to the social and ritual obligations of the members of those communities. Indeed, the segmentary nature of society was made symbolically manifest in the monumental arrangement at Moundville as multiple mound pairs arrayed side by side (Knight 1998, 2008). Likewise, social gathering places like the Powers site's Structure 3 and equivalent structures at Moundville were not situated apart from communities but were erected amongst them. The chiefdom's political and ceremonial structure was certainly embedded within and generated by group participation in ritual and social exchanges. In other words, agency in economic relationships in the Moundville polity was not an exclusive prerogative of elites.

In this thesis, I have provided evidence that, contrary to the claims of the Moundville political economy model, the production of some valued goods, specifically paint palettes, pendants, and possibly greenstone axes and shell beads, was decentralized during the late Moundville III-early Moundville IV period. Furthermore, I propose that the evidence is more consistent with expectations of a decentralized ritual economy rather than a centralized political economy, a claim corroborated by additional evidence from the Moundville site and the White site. Future investigations at nonmound sites have the potential to further evaluate this proposal.

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APPENDIX

Case Identification Number: _____#_____ Analyzed by: _______________ Date: _____/_____/_____

Site: ______________ Provenience: ____

Context: ___________ Bag Number(s):____

FLAKED STONE	Tuscaloosa Gravel (T) ct.	Tuscaloosa Gravel (T) wt. gm	Quartzite (Q) ct.	Quartzite (Q) wt. gm	Nonlocal Stone ct.	Nonlocal Stone wt. gm
>2" Flake	cort.		cort.		cort.	
1-2" Flake	cort.		cort.		cort.	
.5-1" Flake	cort.		cort.		cort.	
.25-.5" Flake	cort.		cort.		cort.	
Blade-like Flake	cort.		cort.		cort.	
Utilized Flake	cort.		cort.		cort.	
Shatter	cort.		cort.		cort.	
Core/fragment						
Tested Pebble						
Drill/perforator						
Microlith/drill						
Preform/frag.						
Madison Point						
PPK (Non-Miss.)						
TOTAL						

GROUND STONE	Sandstone HS ct.	Sandstone HS wt. gm	Sandstone FS ct.	Sandstone FS wt. gm	Greenstone ct.	Greenstone wt. gm	Other ct./code	Other wt. gm
Abrader							/	
Ground							/	
Sawn							/	
Saw							/	
Polished Chip							/	
Celt/frag.							/	
Pallet/frag.							/	
Discoidal							/	
Hammerstone							/	
Pendant/frag.							/	
Metate/mortar							/	
							/	
							/	
							/	
TOTAL								

UNMODIFIED STONE	ct.	wt. gm
Sandstone (SS)		
Sandstone, fine gray micaceous (FS)		
Sandstone, hematitic		
Conglomerate (CG)		
Hematite (pigment quality – H)		
Limonite (L)		
Pebble (quartz/chert/limestone – P)		
Cobble fragment (quartz/chert – CB)		
Petrified Wood (PW)		
Coal (CL)		
Muscovite (M)		
Galena (G)		
Greenstone (GS)		
Caulk (C)		
Fossil (F)		
Slate (S)		
Metamorphic (MT)		
Limestone (LM)		
Sedimentary (SD)		
Quartzite (Q)		
Tuscaloosa Gravel (T)		

SHERDS	ct.	rims
Unburnished		
Burnished		
Hemphill		
TOTAL		

ADDITIONAL COMMENTS/ARTIFACTS (e.g., description, material, count, weight): _____________

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