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A Microdebitage Analysis of the Winterville Mounds Site (22WS500)

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A MICRODEBITAGE ANALYSIS OF

THE WINTERVILLE MOUNDS SITE (22WS500)

by

Stephanie Leigh-Ann Guest

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ABSTRACT

A MICRODEBITAGE ANALYSIS OF

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The Winterville Mounds site (22WS500) was a civic ceremonial center of 23 mounds and is located near Greenville in northwest Mississippi. Winterville excavations as field schools are ongoing since 2005 under the direction of Dr. H. Edwin Jackson of The University of Southern Mississippi. Examination of the >1/4" (6.35 mm) mesh screened lithic material provided mixed results of reduction stages and lacked variety of non-local materials (Guest 2006, Winter 2009, McClendon 2012). Authors of these analyses called for the examination of the 1/16" (1.58 mm) water-screened lithic material to identify reduction stages and traces of non-local materials to provide evidence of outside trade. I analyzed the microdebitage from the non-elite residential location of Area A and the elite locale of Mound C to discern variations in accessibility to non-local lithic material to provide conclusive evidence of the sociopolitical organization once managed by Winterville's elite. The microdebitage analysis validates previous interpretations that Winterville was managed via a corporate sociopolitical scheme, as there is no evidence that elites acquired sumptuary items for display. A wide variety of raw materials were uncovered, with few specimens represented for each variety. The microdebitage is likely the result of the re-sharpening and re-shaping of complete stone tools that were brought onto and eventually left the site. Radiocarbon dates along with artefactual evidence provides for an occupation of Mound C well into the Lake George

phase, previously characterized as a time of occupational decline and eventual site abandonment (Brain 1989).

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DEDICATION

Thank you to everyone in my life who has encouraged me to continue with my education and for your sustained support. Special thanks to my partner, Ben Mitcham, for his boundless love and encouragement throughout my graduate career. I have Ben to thank for being my shoulder to cry on and providing me with the words of encouragement that followed. Ben is my rock and my best friend. Thank you to my parents, Jimmy and Lourinda Guest, for always encouraging me to follow my dreams. Thank you to my cohort for the comradery, support, and encouragement along the way, especially that of Beth Hunt.

This thesis is dedicated to my very dear friend, Jamie Lynn Cantrell. More of a sister than a friend, Jamie had the biggest heart, an innate wittiness, the face of an angel, and the mouth of a sailor. Though not an archaeologist, Jamie was an intellectual and an activist. She was an avid birder and hiker who understood the importance of conservation. She earned an M.S. in Biology from U.T. Tyler; specializing in Ornithology. Her journey through graduate school encouraged me to follow with the continuation of my own education. I will forever be grateful for the many years of friendship, amazing memories, laughter, and sisterly love that we shared.

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CHAPTER I - INTRODUCTION

1.1 Overview of Winterville and Thesis Project

The Winterville Mounds site (22WS500) is a civic ceremonial center that was constructed by people of the Plaquemine Mississippian culture in the Mississippi Delta. Winterville is in Washington County, 6.5 km north of Greenville, Mississippi, and 5 km from the Mississippi River (Brain 1989, 11). The site originally consisted of at least 23 pyramidal structural mounds and two plazas encompassing an area over 20ha (Brain 1989, 11). Nine of the original 23 mounds are presently protected as a state park and museum, which is owned and operated by the Mississippi Department of Archives and History. Research excavations of Winterville have been conducted under the direction of Dr. H. Edwin Jackson since 2005 as part of The University of Southern Mississippi Department of Anthropology and Sociology's Archaeology Field School. I performed research on a selected portion of microdebitage (<1/4") assemblages recovered from the Winterville Mounds site with the intention of identifying traces of exotic (non-local) raw materials to evaluate the proposition that residents were involved in long distance stone exchange. Discovery of long distance exchange could have ramifications on the way we interpret the political strategy once employed by the Winterville elites.

The Mississippian period (AD 1000-1500) is exemplified by an abrupt sociopolitical shift throughout the southeastern United States that influenced cultural transformation to chiefdom-level societies, long-distance exchange networks, innovations in ceramic technology and residential construction, shared symbolism and ideology, intensive agriculture, and the eruption of a mound building tradition (Cobb 2003). Small mound settlements developed into large-scale multi-mound complexes, ruled by a chiefly

elite. Long-distance raw material exchange became necessary during the Mississippian period due to the low availability of quality goods in these abruptly sedentary populations. These "exotic" materials were extracted from quarries, fashioned into utilitarian stone tools and ornamental displays for the elite, traded throughout the Southeast, and were greatly prized. Complete stone tools were uncovered from Winterville in trivial quantities, leaving flake analysis as the primary means of exploring the site's comprehensive record of lithic materials.

Prior research of lithic material was conducted as a series of academic assignments for the completion of a degree in Anthropology, and are fully explored in Chapter III. Mixed and incomplete results of previous lithic studies led to my decision to incorporate microdebitage analysis to provide a comprehensive observation of raw materials and reduction stages of Winterville's lithic assemblage. In her research paper, Jennifer Winter (2009) suggested further analysis of <1/4" water-screened lithics recovered from Area A during USM's field school excavations to discern the full spectrum of lithic reduction stages. Barbara McClendon (2012) analyzed the > 1/4" lithics from the summit of Mound C, and suggested further analysis of the microdebitage for additional raw material identification. These areas were chosen for lithic studies as both Mound C and Area A produced copious amounts of lithics, which were largely absent from the remainder of excavated locations. Analysis of the numerous microdebitage water-screened artifacts recovered from the summit of Mound C and the residential site of Area A can potentially enhance our understanding of the exchange practices and sociopolitical scheme of the Winterville elite.

Chiefdoms were typically ruled under one of two types of sociopolitical systems: corporate or network (King 2003, 9). Corporate systems were maintained through the reciprocation of goods back into society, as evidenced in feasting. Feature 113 of Area A was interpreted as a feasting pit, providing evidence that Winterville elites once practiced a political scheme expectable of a corporate society. Corporate polities provide little evidence of elite-amassed sumptuary items. In a network system, elites had total political control over society and accrued prestige goods to magnify their power (King 2003, 8). Elites were very distinct in the archaeological record, as prestige goods were accumulated as burial furniture. Feasting evidence at Winterville and minimal non-local lithic and ceramic presence in the >1/4"' material is indicative of a corporate political scheme. Microdebitage results could bolster or alter researchers' interpretation of political scheme. Discussion of chiefdom sociopolitical schema will be further explored in the Theoretical Considerations chapter.

This researcher analyzed and compared the Mound C elite microdebitage context to the non-mound and presumably non-elite residential location of Area A to discern any variations in accessibility of raw materials. Diverse variations in raw material could indicate differential access to exotic materials, aiding to interpret the sociopolitical classification once upheld by Winterville's societal elite. I then compared two different elite structures from the summit of Mound C to evaluate changes in mound-top activity over time. The structure contexts represent differing points in Winterville's chronology; thus, variation of non-local raw material could represent changes in political strategies or the role of material exchange.

Per previous research performed on the >1/4" lithic material, local chert was the primary raw material recovered from Winterville, and non-local lithics were minimally represented (Guest 2006; Winter 2009; McClendon 2012). Exotic raw material is likely to appear in the archaeological record where there is evidence of retouch and reworking, as likely, these materials were imported in the form of complete stone tools that were then continuously modified (Price 2012, 23). Since non-local materials were presumably brought to Winterville as complete stone tools and eventually departed the site, microdebitage from re-sharpening and re-shaping is likely the only trace of raw materials that once had a presence at the site. It appears exotic stone resources may be scarce in Winterville, yet the investigation of selected microdebitage assemblages may prove otherwise. The presence or absence of exotic raw materials will resolve inquiries about the exchange practices and political strategies of Winterville's elite.

CHAPTER II – THEORETICAL CONSIDERATIONS

2.1 The Mississippian Period

In this chapter I will briefly explore the rise of Mississippian societies and how this major cultural shift affected the events that transpired at Winterville. Discussed in this chapter are the defining characteristics of Mississippian society as well as climatic and cultural changes that allowed for a shift to chiefdom-level societies in the Southeastern U.S., a discussion on the differing political strategies employed by societal elite, then how social organization is represented in the architectural design of mound complexes. Lastly, the correlation between this cultural phenomenon and the Winterville site closes the chapter.

As seen in Figure 2.1, the American Bottom is located along the Mississippi River, a river that influenced the settlement of Native American peoples for thousands of years. The Mississippian period (AD 1000-1500) arose in the American Bottom region (largely west central Illinois and east central Missouri along the Mississippi River) during the era Timothy Pauketat refers to as the "big bang" of the Cahokia chiefdom (located across the Mississippi River from St. Louis, Missouri). This "big bang" idea posits that a significant sociopolitical change occurred within a society over a short period, that transformation ensued under the influence of a small number of elite individuals, and that action caused a ripple effect that initiated the spread of this type of society to other regions over time (Pauketat 2010, 4).

> A suite of horizon markers denotes this rapid development: triangular Cahokia-style arrowheads, Cahokia-style "chunkey" stones, the predominance of shell-tempered pottery, a novel wall trench architectural style, pyramidal mound

construction, and a suite of icons depicting supernatural themes (Pauketat 2004, 10).

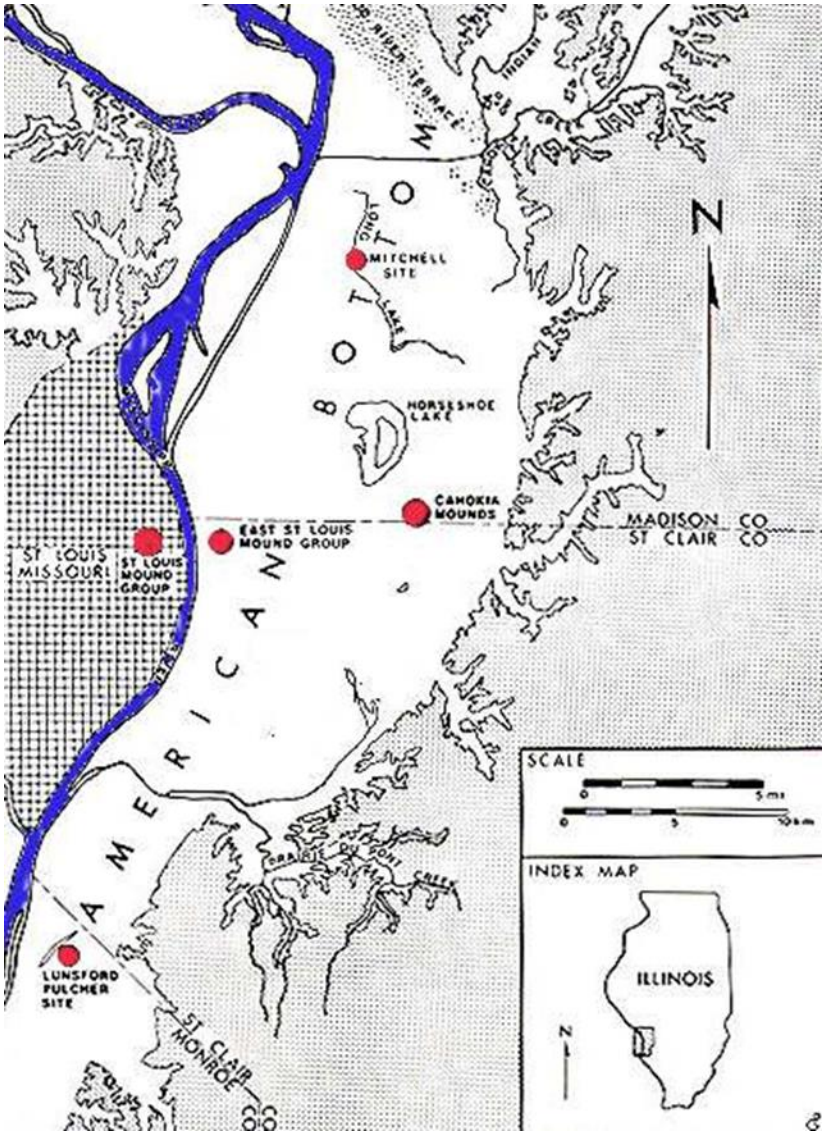

Figure 2.1 Map of the American Bottom region.

(Adapted: http://www.museum.state.il.us/RiverWeb/landings/Ambot/prehistory/archives/images/society/pages/ptscty50map2.html).

A warming climate during the Medieval Warm period (ca. AD 800-1300), along with a population boom in the American Bottom region positioned along the Mississippi River, created the perfect conditions for the rise of agriculture (Smith 1990). The Mississippi River has been shaping and reshaping the land since the late Pleistocene. The

Mississippi River ebbed and flowed along its banks enough to form nutrient-rich soil that was ideal for the cultivation of crops. This lush and diverse environment provided prolific resources that could sustain large populations.

The rise of agriculture in the American Bottoms may have created a need for a faction of society to farm the land while others managed the process. Timothy Pauketat and George Milner have differing views on the possible political structure imposed by the ruling elite of the Cahokia chiefdom and its outlying sites. Milner (1998, 3) believes that though Cahokia is great in size, contains vast quantities of exceptional artifacts, and has many mounds and several satellite communities, it is considered a complex chiefdom rather than a state. Milner does not believe that a central political authority controlled the entire American Bottom region, but rather it was a series of chiefdoms. Timothy Pauketat examined the possibility of the political centralization of craft production in Cahokia and outlying areas and concluded that the Mississippian iconography and craft specialization was, in fact, controlled by a unified central elite within the American Bottom region (Pauketat 1997, 12). The differing perspectives of Milner and Pauketat were largely based on the same information and exemplify the varied viewpoints on Cahokian political centralization.

"The broad and conceptually difficult terrain that stretches between tribal societies and state-level organizations is often assigned the general label of 'chiefdom' or 'ranked society'" (Smith 1990, 1). Perhaps the most distinctive characteristic of the Mississippian Period is the development of chiefdom-level sociopolitical organizations.

> Chiefdoms are usually characterized by increased complexity of organization, productivity, and population density. Moreover, chiefdoms possess

> institutionalized offices of leadership: the chief and his associates. Such offices can exert control and exercise some power over persons, products, and situations. As in segmentary societies, however, these offices rely to a greater or lesser extent on sanctified authority for their legitimacy and for social regulation and control (Peebles & Kus 1977, 421-422).

Judith Bense (1994: 191) argues the central feature of a chiefdom society is the omnipresent inequality of individuals. The chiefly elite was comprised of numerous positions of rank in which religious and political power were indivisible, all of which would reside at the largest civic ceremonial center (Bense 1994, 192).

Societal rank of chiefdoms was based upon kinship and emphasized via religious practices, the right to rule bestowed only to those closely related to the chiefly elite. "Quite often the legitimacy of chiefly rule is sanctioned by a religious ideology, and chiefs often take pains to reinforce actively that legitimacy through conspicuous displays in terms of dress, consumption, and treatment" (King 2003, 4). The political and religious power held by the ruling elite was seemingly indivisible. The amount of power a chief held over society depended on the type of sociopolitical structure of the chiefdom.

Chiefdoms are typically ruled under one of two types of political strategies: corporate or network. King (2003) uses descriptions of these strategies to express material differences found in the archaeological record between two Mississippian sociopolitical strategies and their differing ideologies. In a system whereby the Mississippian elite acquired and maintained their power via a network strategy, individual power and prestige were of vast importance. Competition for the acquisition of additional chiefdoms was constant in a network strategy, resulting in a commonly

shared ideology and symbolism expressed in analogous decorated pottery and trade goods found throughout the Southeastern United States. Elites of society acquired and maintained prestige goods that were traded throughout the Southeast.

> Polities structured through a network strategy are likely to exhibit greater differences in individual wealth and prestige, and individual leaders are likely to be highly visible because a great deal of the mobilized surplus will be used to aggrandize them (King 2003, 8).

In contrast, "Corporate approaches are more inclusive and emphasize the importance of the social group at the expense of individual wealth and status" (King 2003, 9). Corporate sociopolitical strategies involve an ideology based upon the notion of reciprocation of goods back into society, as seen in the prevalence of feasting. The chiefly elite of a corporate political system would provide feasts for the community to formulate an integrated chiefdom. "Corporate polities are likely to exhibit fewer wealth and status differences, and political leaders as important personages will be less visible archaeologically" (King 2003, 9). Prestige goods are not likely to be consistently recovered at an archaeological site associated with a corporate system, as these items were not viewed as essential in this type of sociopolitical system. Archaeologically, the distinction between elites and commoners in a corporate polity is difficult to assess due to the lack of elite ownership of prestige goods.

A large quantity of local raw material was uncovered from Mound C, leading McClendon to believe that the political structure of the Winterville site was that of a corporate strategy. The lithic analyses resulting in a large majority of local raw materials in combination with the evidence of the Feature 113 feasting pit (suggesting elites and

non-elites partook in feasting activities) further supports the assumption that Winterville may be associated with a corporate sociopolitical scheme.

Evidence for the delineation of sociopolitical status can be interpreted from the archaeological record in the form of burial furniture, the health of human remains, mortuary placement, and site organization. Social organization of sites can be determined through the design and placement of Mississippian mound centers, due to required strategic architectural planning. Vernon Knight (1998) investigated the relationship between the spatial layout of Moundville and its relation to an ethnographic account (Speck 1907) which suggests this major Mississippian mound complex is a sociogram: an architectural representation of societal kinship and rank. Verification that the Moundville site's architectural design was strategic is based on the large degree of formal placement in the mound complex arrangement, which is unlike most other mound complexes. The design and architectural placement of the Moundville site was seemingly a deliberate plan of construction based upon social and cosmological features which possess map-like characteristics. Diagrammatic mound complexes were designed by political elites that deliberately arranged the architecture of the ceremonial center to emulate the structure of social status (Knight 1998, 60).

> The dimensions of that reality – its hierarchies, levels, oppositions, contrasts, and polarities – once designated and monumentalized in public architecture, from that point onward contribute to the recreation of that reality, as people participate in the center as part of their social environment. (Knight 1998, 46-47)

The extent to which Winterville is a sociogram has yet to be examined, however the occupants participated in a social environment, as mounds were clearly occupied by

societal elite and non-elites lived in off-mound locations. Before Winterville was a multi-mound complex, it arose as a Coles Creek culture settlement.

Coles Creek societies were indigenous to the southern Lower Mississippi Valley and by approximately AD 1000 settled into the northern part of the lower Yazoo region (Brain 1989, 108). Likely a village site at the time, Winterville represented one of the most northerly Coles Creek cultural settlements of the Lower Mississippi Valley. Brain suggested that the Yazoo Basin was predominately uninhabited during this time and the Coles Creek society likely migrated from the Lake George site to Winterville. Only 80 km to the south, the Lake George site experienced population expansion during that time (Brain 1989, 108). Brain postulated there could have been one or more modest mounds constructed at Winterville during the Crippen Point phase (AD 1000-1200). The Coles Creek culture was the first to erect sub-structural pyramidal mounds (Williams & Brain 1983, 405). The Coles Creek mound raised important buildings above others, and the typical mound complex included two to four mounds that were positioned around a plaza with access ramps placed on the plaza side of the mound. Over the next 200 years, Winterville continued to flourish and experienced significant cultural influences from societies located in the American Bottom region.

The level of association between the events of the American Bottom and the florescence of the Winterville phase (AD 1200-1350) is not entirely known. The site is representative of both Coles Creek and Mississippian cultures. The sheer size of the site is representative of Mississippian societies, yet the occupation of merely the social elite and vacant ceremonial center is characteristic of Coles Creek mound centers (Brain 1989). Evidence of mound occupation is prevalent, while the plazas remained

uninhabited during this phase. The presence of American Bottoms influence is evident in the form of shell-tempered Mississippian wares, distinct mortuary practices, and earthwork construction. Described by Brain as "Mississippianized" Coles Creek culture, this society had clear developmental influence from the Mississippian civilizations (Cahokia) to the North (Brain 1989,125). This "hybridization" of the Coles Creek and Mississippian societies is recognized as the Plaquemine culture (Brain 1989, 122).

At its apex, the Plaquemine culture reached a large portion of Louisiana and Mississippi (Brown 1985, 252). Though many sites were comprised of few mounds, the Plaquemine cultural florescence is attributed to the transformation of small Coles Creek mound sites into major mound complexes, such as Lake George and Winterville (Brown 1985). Plaquemine mound building reached its peak during the Winterville phase, from AD 1200-1350. The Winterville phase represents the site at its finest; a period of thriving mound construction and regular ceremonial practices made Winterville a major mound complex.

The rise of agriculture, the ascent of sociopolitical status based on kinship, population boom, development of chiefdoms, the emergence of shared ideology and trade networks of the Southeastern Ceremonial Complex (SECC), the invention of shell-tempered pottery, and craft specialization are several characteristics that help to describe the culture of the Mississippian period. Though altogether these attributes are largely designated to this specific period in prehistory, it is not necessary for each Mississippian site to contain these components entirely as each site was not characteristically homogenous (Carr 1994). Political strategy is expressed in Mississippian material culture

via archaeology context: SECC artifacts would not be found in abundance in a corporate sociopolitical structure, as elites did not use material culture to magnify their power.

CHAPTER III – PREVIOUS INVESTIGATIONS OF THE WINTERVILLE MOUNDS SITE

Located in the once densely forested Yazoo Basin, the Winterville site was overlooked for quite some time. "The first river towns were founded in the 1820's following the Treaty of Doak's Stand (1820), by which the Choctaw Indians ceded their land claims in the southern half of the basin" (Brain 1989, 18). The initial documentation of Winterville was provided by Henry Tillinghast Ireys in 1852 (McCain & Capers 1954, 13-14, 67-70). The first professionally drawn maps of Winterville were produced in the late 1800s by Squier and later by Hough (Brain 1989, 18).

During his expedition through the Lower Mississippi Valley in the early 1900s, Clarence B. Moore carried out the first quasi-professional excavations of the Winterville site. Moore provided Winterville with its original name of "Blum Mounds" and drew the first realistic map of the site in 1907 (Moore 1998). Moore and his men discovered 15 of the original 23 mounds and recorded their findings during their six-day excavation of the site. With little success in locating burials or abundant artifacts, Moore promptly continued elsewhere with his expedition of the Lower Mississippi Valley (Moore 1998).

Philip Phillips, James Ford, and James B. Griffin (2003) continued archaeological research in the Delta with the Survey of the Lower Mississippi Valley, conducted from 1940 to 1947. Phillips revisited the site in the late 1940s accompanied by Albert C. Spaulding, who produced the earliest precise contour map of Winterville (Phillips 1970, 476).

Jeffrey P. Brain performed archaeological investigations of the Winterville Mound complex in 1967 (as seen in Figure 3.1). Since Winterville is situated at the

southern boundary of Mississippian influence and northern border of the Coles Creek culture, Brain focused upon "the contact of these two dynamic cultures at Winterville and the resultant cultural development in the Yazoo and contiguous regions" with an objective to reconstruct the cultural history of the site (Brain 1989, 1). He and his men excavated Winterville for a total of six months over the duration of one year. Over the course of his excavations, Brain divided his units into eight sections on the site (I-VIII) in areas which he believed to be the best locations for recovering information regarding his research inquiries (Brain 1989, 29). The procedure for the excavation grid was to lay out one unit and expand upon the unit if necessary. A 2x2m unit was generally used for excavation, though the use of 1x2m, 2x4m, trenches and profiles were additionally employed (Brain 1989, 29). Brain focused mainly on the excavation of mounds; therefore, the only recognizable occupation was recovered from mound-top activity.

Brain's work on the Winterville site aided to establish occupation dates for Winterville and identify mound-top occupation areas. Brain ascertained dates of occupation for the Winterville site. During the Crippen Point phase of the Coles Creek Culture between AD 1000 and 1200, the site saw its first permanent settlement. Brain postulated that during this phase Winterville was most likely a village with one or two mounds.

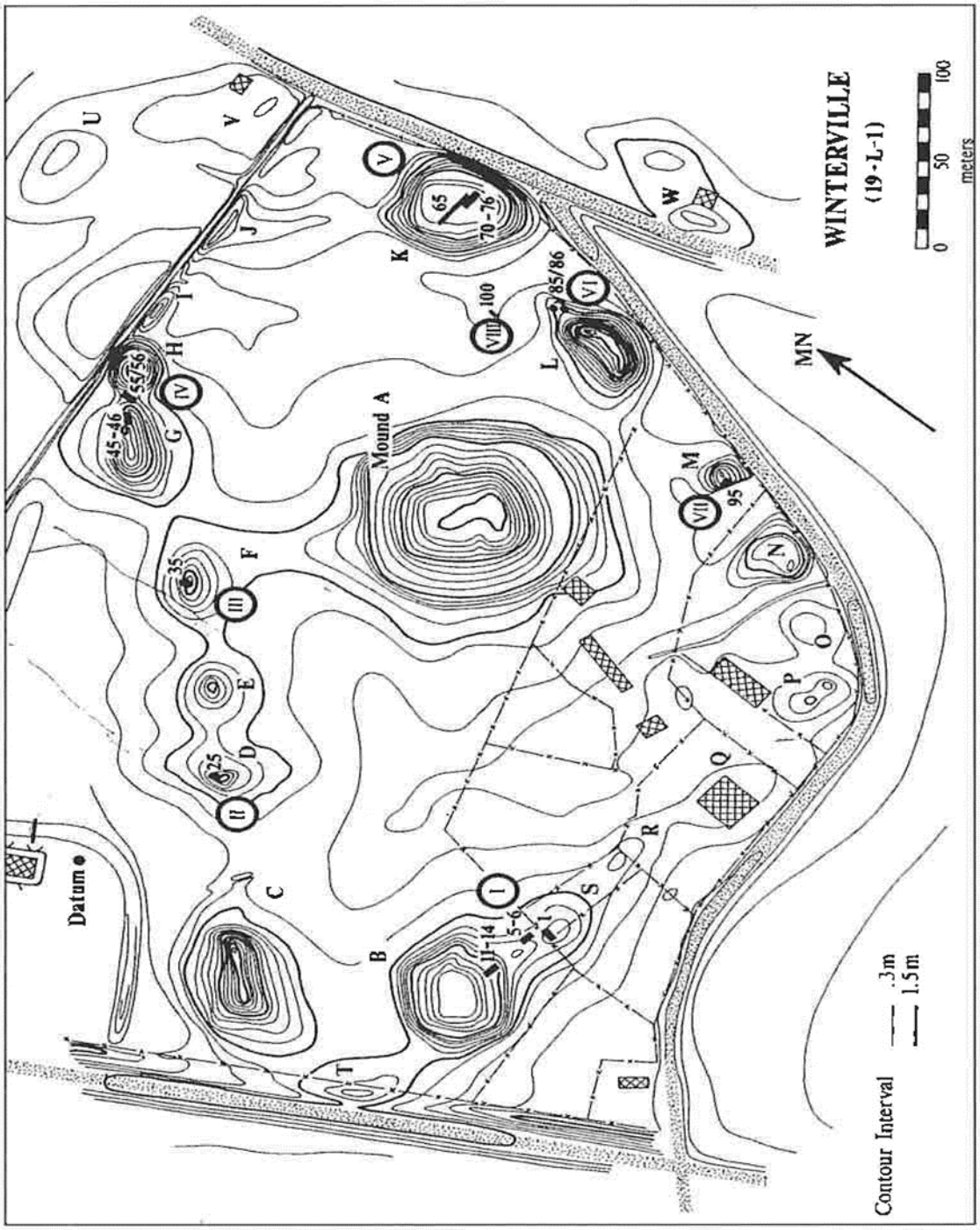

Figure 3.1 Winterville Excavations

(Adapted from Brain 1989, Figure 12, 28)

The legacy of Coles Creek culture remained prominent at the site even after the clear presence of Mississippian influence which originated in the American Bottom and spread throughout the southeast. The blending of the Coles Creek and Mississippian cultures is referred to as the Plaquemine culture (Brain 1989, 108-111). The site of Winterville grew with the rise of the Mississippian culture in the Delta region between AD 1200 and 1350 during the Winterville phase (see Table 3.2). The Winterville phase witnessed this civic ceremonial center at its finest, with substantial religious and sociopolitical ceremonies transpiring regularly. The Winterville I subphase is associated with the site's first industrious mound construction. The Winterville II subphase witnessed a large resident population and the "greatest amount of mound construction," evidenced to have been largely completed by the termination of this phase (Brain 1989, 105). Brain concluded that Winterville witnessed occupational decline by the florescence of the Lake George phase and was abandoned by the end of this phase (Brain 1989).

Table 3.2 Cultures and Phases of the Mississippian Period

(Adapted from McClendon 2012, Table 1, 7)

Period	Cultural System	Phase of Lower Yazoo Basin	Dates
Mississippian	Coles Creek	Crippen Point	1000-1200 AD
	Plaquemine	Winterville	1200-1350 AD
	Mississippian	Lake George	1350-1500 AD
		Wasp Lake Phase	1500-1700 AD

Modern research has been conducted on the Winterville site by The University of Southern Mississippi since 2005. Several student research papers have been composed

on the topic of lithics recovered from USM excavations at Winterville by this researcher, Julie Leist, Jennifer Winter, as well as a senior honors thesis by Barbara McClendon. These research papers will be further discussed in the following section.

As displayed in Figure 3.2, the initial field season in 2005 consisted of the excavation of Mound F and surrounding areas to the west of Mounds E, F, and G (areas A, B, and C). A deep midden was located and excavated west of Mounds F and G. Further excavation of Mound F and Area A continued with the 2006 field season, leading to the recovery of several features.

Multiple feature layers were unearthed in Area A (see Figure 3.2): initially with a midden deposit superimposing a layer of burned clay, a possible burned surface, and charcoal (Jackson 2007). Once preliminary layers were excavated, they revealed numerous post molds; several of which displayed signs of in-situ burning (Jackson 2007). The 2006 field season revealed a total of 74 features including trash-filled pits, wall trench segments, abundant post molds, and evidence of a single burning event. Calibrated dates taken from midden/charcoal samples suggest that Area A was occupied from the Winterville (AD 1200-1350) into the Wasp Lake (AD 1500-1700) phases, with artefactual evidence supporting occupation from Lake George (AD 1350-1500) into the Wasp Lake phase (Jackson 2007). Discovery and analysis of lithic artifacts will be discussed in the following section.

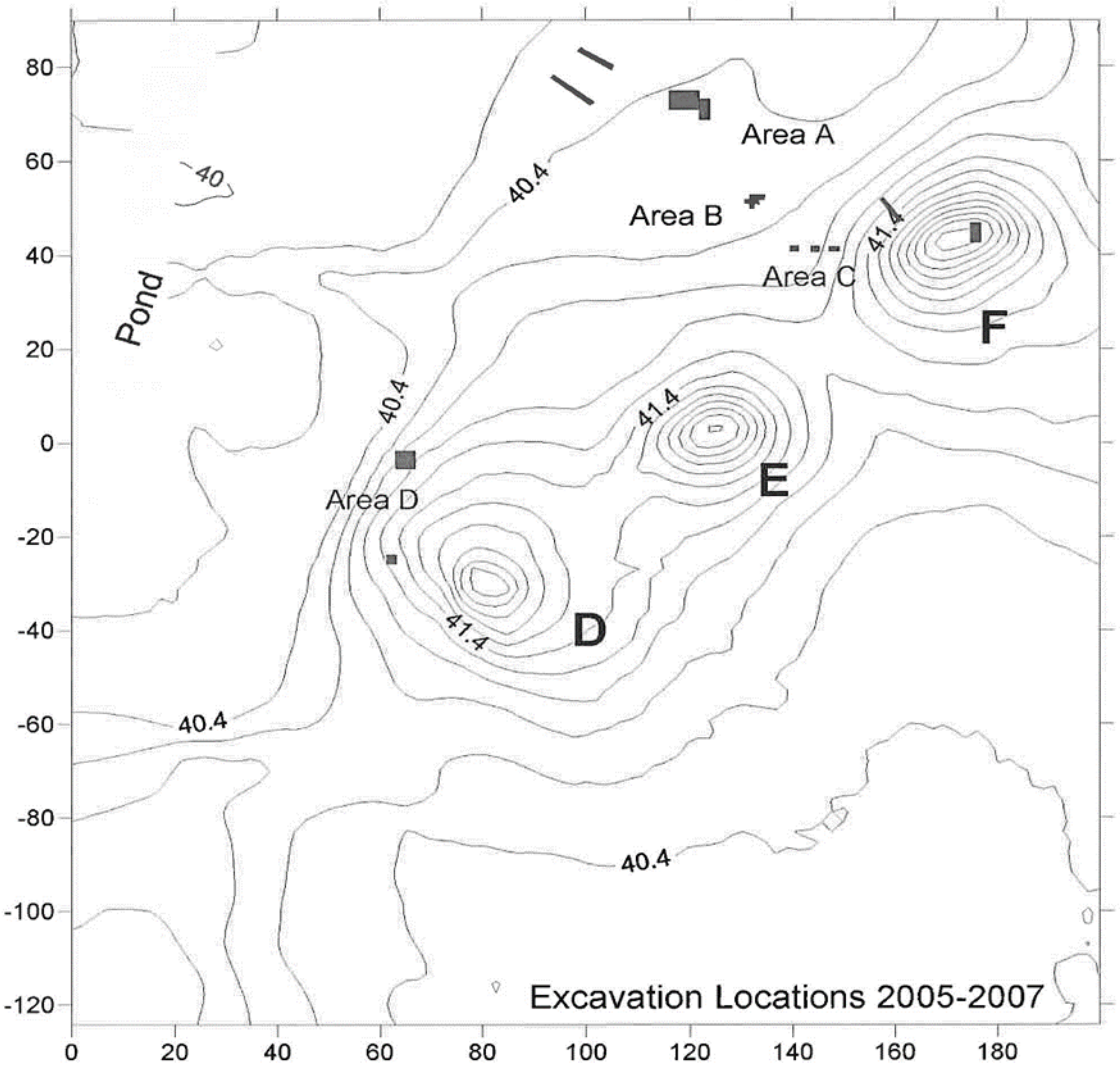

Figure 3.2 2005-2007 USM Excavations.

(Adapted from Kowalski 2009, Figure 1.5, 14)

Participants of the 2007 field season excavated shovel test pits in the vicinity and flanks of Mounds D, C, B, F, and G in search of occupation areas and flank midden deposits (Jackson 2008). Additionally, two large features revealed by remote sensing were excavated. Previous investigations on the summit of Mound F by Brain (1989) and Jackson (2005) were also completed in 2007 with the discovery of a burned structure,

providing radiocarbon dates of a single building event that occurred during the late Winterville I or early Winterville II phases.

The two excavated features included Feature 113, a large stratified trash-filled pit exhibiting defining layers of ash and burned earth, located adjacent to Mound D (Jackson 2008). "A two-sigma calibrated date of AD 1040-1100 and 1120-1260 places the feature at the end of the Crippen Point phase or beginning of the Winterville I subphase" (Jackson 2008, 9). This feature, approximately four meters in diameter was interpreted as a borrow pit subsequently used as a roasting facility, contained an abundance of faunal remains, ceramics, and lithics, providing insight into the material culture of Winterville as it transformed from a village to a mound complex (Jackson 2008).

Ceramic analysis of Feature 113 revealed the possibility of external contacts, as expressed in such wares as Powell and Ramey Incised, assumed to be directly imported from the American Bottom region and an expression of elites "potentially displaying connections with other networks to solidify local support" (Kowalski 2009, 100). Information about lithics recovered from Feature 113 can be found in the following section.

Multiple locations were tested and excavated during the 2009 Winterville field season. Shovel tests and test excavation units were placed within the northeastern portion of the plaza, and units were placed on the summit of both Mounds B and C, and on the east and north flanks of Mound C (Jackson & Kowalski 2009, 1). The primary focus of this field season was to gather information on Mound C, particularly to collect samples from midden deposits and examine any correlation between midden and mound stratigraphy. A 1x10m trench was excavated on the east flank of Mound C, exposing

several wall trenches and a baked floor which provide evidence that four or five possible structures were in this area, associated with second stage construction (Jackson & Kowalski 2009, 11). Radiocarbon dates were extracted from three different samples leading slightly varied dates: AD 1280-1410 (sample from charcoal below Feature 195), AD 1270-1330 and 1340-1400 (sample from cane associated with Feature 133), AD 1260-1320 and 1350-1390 (sample from Feature 131) (Jackson & Kowalski 2009, 13). Sample ranges occur due to the calibration curve that is used to convert the radiocarbon into an age estimation. The Mound C radiocarbon dating results range from the Winterville phase to the early Lake George phase.

The 2011 field season expanded upon the previous season's investigation of Mound C. Mound C served as a platform on which a series of building episodes occurred. A minimum of four structures were encountered in the 36-square meter block of excavation units placed around the 2009 test unit, plus one more unit (Jackson 2012, 5). Charcoal samples from the summit of Mound C (level 3 of S94W10) revealed radiocarbon dates of AD 1320-1350 and 1390-1435; providing occupation dates of Winterville into the Lake George Phase. Along with several structures, an abundance of artefactual evidence was also recovered. The recovery of numerous sherds from vessels associated with ceremonial practices, a high percentage of non-local lithics, and the discovery of a possible fence or palisade suggests that Mound C is ceremonial in nature and exhibits traits of craft production (Jackson 2012, 9).

Slope wash, in addition to midden deposits, produced a large amount of lithics, both of local and non-local origin, making Mound C a potentially important context for the present research. The large number of lithics, animal head rim adornos, non-local

ceramics, and a discoidal recovered from Mound C may indicate that occupants were associated with local and external trade (Jackson & Kowalski 2010, 17). A more detailed description of lithics recovered from Mound C can be found in the following section.

3.1.2 Previous Lithic Investigations of the Winterville Mounds Site

Under the supervision of Dr. H. Edwin Jackson, I conducted an undergraduate research paper on the debitage recovered from two Winterville house sites in 2006. House A consists of the coordinates N70E116, N70E118, and N72E118. House B contains the proveniences N50E129, N49E130, N51E132, N50E130, N51E130, N50E131, and N50E132. An analysis was performed on the full range of lithic debitage; however, flakes were analyzed for this project. One hundred and six flakes were recovered from the vicinity of a structure in Area A, while 44 flakes were recovered from another house in Area B. The majority of the flakes (House A: 80%, House B: 89%) ranging from size 2 (3/8") to 5 (1/16") consisted of local chert gravel (Guest 2006, 2). Most debitage from both houses was comprised of small size grades of 3 (1/4") and 4 (1/8"), leading to the interpretation that late-stage reduction or retouch accounts for most of the assemblage (Guest 2006).

Julie N. Leist (2008) conducted a senior honors thesis on her analysis of lithics recovered from the Winterville site. Leist conducted her analysis on the types of stone tools recovered from Winterville's Features 113 and 103 (adjacent to Mound D), with the intention of linking tools to carbon dates associated with these areas. Based on carbon dates, Feature 113 dates to the beginning of the Winterville phase. Feature 103 dates to the end of the Lake George or early part of the Wasp Lake phase. Identifying lithic raw

materials was not one of Leist's main objectives of analysis. Consequently, little is learned about the raw material origins. Leist does mention that Dover chert, originating from Tennessee, was used in the manufacture of a Nodena projectile point recovered from Winterville. Additionally, source material used in the manufacture of most Madison points was that of local chert and possibly one of Fort Payne chert. In addition, one recovered celt is possibly comprised of Greenstone, a raw material source originating from the southern Appalachian region (Leist 2008, 16). Though Leist's results provided few material types, evidence of non-local trade was established through her research.

Raw material was investigated by Jennifer Winter (2009), providing a broader understanding of Winterville trade. Winter's research was conducted on lithic debitage from four units in Area A (N70E114, N72E114, N70E116, and N72E116), associated with the residential structure and recovered during the 2006 USM field season and Feature 113 (the feasting pit) excavated in 2007 (Winter 2009, 1). The focus of Winter's research was to compare the assemblages from these two areas of the Winterville site.

In the debitage sample from Area A, 199 out of the 200 flakes recovered from Area A were comprised of local gravel chert. The lone flake of quartzite is a distal portion, size grade 3 (1/4"). Flake reduction stage was based on the facet counts, platform configuration, and percentage of remaining dorsal cortex, rather than size grades. It is commonly believed that early stage flakes are of larger size grades, yet the use of small cobbles (that produce small flakes during each reduction stage) for the utilization of stone tools precludes this assumption. All stages of reduction were represented in Area A, yet the platform analysis supports that most the flakes resulted from early stage reduction, as most flakes had one or two facets (a characteristic of early

reduction) (Winter 2009). The Area A lithic analysis provided verification that local raw material was the dominant lithic resource for this residential site and the presence of mainly early stage reduction implies that tools were formed within the residence (Winter 2009).

Excavation of Feature 113 produced a greater variety of raw materials including Fort Payne and Burlington cherts, and quartzite. The Lewisburg variety of Fort Payne chert was represented by at least two size-grade 3 flakes recovered from this area. Most lithics were comprised of Citronelle gravel chert; 99.7% of area A and 95.3% of Feature 113 are that of Citronelle gravel chert (Winter 2009, 15). Analysis based upon facet counts suggests that the early stage of reduction was most commonly observed. Dorsal cortex analysis suggests that both Area A and Feature 113 are of middle and later reduction stages. The recovery of lipped and cortical lipped platforms supports evidence for middle stage reduction and late stage reduction via soft hammer percussion. Due to the mixed results of Winter's analysis, she suggests that further research of the water screened non-tool lithic material will help reveal a wider variety of reduction stages.

Barbara McClendon performed a lithic analysis upon artifacts recovered from Mound C during The University of Southern Mississippi's 2009 and 2011 archaeology field schools. McClendon (2012) examined stone tool manufacture in this location to determine whether Winterville elites had differential access to non-local raw material, which could aid in the determination of sociopolitical methods maintained at the site. Further discussion on Winterville political strategies are discussed in the following chapter. An abundance of lithic debitage was uncovered from the summit of Mound C, yielding McClendon's analysis imperative to raw material identification at Winterville.

Using individual flake analysis on 830 lithic artifacts, McClendon could positively identify the raw material of 775 artifacts using a comparative collection from the USM archaeology laboratory (2012, 19). Of the materials identified, 91.5% of the artifacts were recognized as local gravel chert, 28 artifacts were Fort Payne chert, 21 were that of Burlington, nine lithics were recognized as Dover, two were Coastal Plain chert, and one each of Mill Creek, Kincaid, Brush Creek, and Camden chert (2012, 19-20).

> Fort Payne is a widely-dispersed flint with outcrops from Kentucky through Alabama, while Dover is most commonly found in Tennessee. Burlington, Mill Creek, Kincaid, and Camden are all varieties of stone found in Illinois. Interestingly, the average weight of the local gravel was 5.1g, and the average weight of the specimens identified as non-local was 1.43g. (McClendon 2012, 20)

McClendon interprets the small amount of non-local lithic material to signify that the exotic raw materials recovered from Mound C were the direct representation of the re-sharpening or reshaping of complete stone tools. Microdebitage analysis will engender the full spectrum of raw material exchange practices of the Winterville elite.

Recent excavations have provided a great deal of information about distribution and dates of occupation, and indications of external trade practices. In summary, the 2005/2006 field seasons' excavations of Mounds E, F and G revealed occupation dates from the Winterville (AD 1200-1350) and into the Wasp Lake (AD 1500-1700) phases. Participants of the 2007 field school excavated in the vicinity and flanks of Mounds D, C, B, F, and G. Feature 113 was a key component to the 2007 excavation, providing researchers with calibrated dates of AD 1040-1100 and 1120-1260 (Crippen Point or

beginning of Winterville phase), and the identification of non-local ceramics (Kowalski 2009) and larger-sized lithics (Leist 2008 and Winter 2009) originating from the American Bottoms and beyond. During the 2009 field season, shovel tests and test excavation units were placed in the northeastern portion of the plaza on the summit of both Mounds B and C, and on the east and north flanks of Mound C, with intentions of identifying any correlation with midden and mound stratigraphy. Multiple structures were unearthed during the 2009 season and radiocarbon samples provided occupation dates from the Winterville into early Lake George phase. Several structures were uncovered on the summit of Mound C, along with radiocarbon dates of AD 1320-1350 and 1390-1435 (Winterville to Lake George phase) during the 2011 field season. Mound C lithics recovered from 2009 and 2011field seasons were analyzed by McClendon (2012): raw materials such as Fort Payne (Kentucky through Alabama), Dover (Tennessee), and Burlington, Mill Creek, Kincaid, and Camden cherts (all varieties from Illinois) were identified. Non-local lithics and ceramics were identified in the larger-size grades, rendering the examination of microdebitage imperative to understanding the full extent of external trade.

CHAPTER IV – IMPORTANCE OF MICRODEBITAGE FOR INTERPRETING THE ARCHAEOLOGICAL RECORD

"Humans and human-like creatures were making and using stone tools before the discovery of fire. In this regard, it can be argued that stone or rock has been one of the most important kinds of raw material during most of human existence" (Andrefsky 1998, 40). An assumption that microartifacts (micro-lithics, ceramics, and faunal) merely mirror larger sized artifact data, rather than providing new information about behavioral practices and additional costs and time is largely to blame for the lack of research on smaller artifacts (Homsey-Messer & Humkey, 2016). Microdebitage may be small, but provides a wealth of information about the archaeological record. The utilization of lithic analysis to observe behavior within the archaeological record has proven to be a successful tool of recreating past lifeways. The investigation of microdebitage can enlighten archaeologists about the origin of raw material sources, site formation processes, recognition of primary or secondary refuse, and types of tools manufactured from raw materials.

Cobb (2000) remarks on the importance of studying lithic assemblages, noting that alongside food remains the greatest confirmation for production within the Mississippian period comes from the study of lithic assemblages. Most Mississippian societies were heavily reliant on expedient tool technology and due to the low availability of good quality raw material in many regions, a dependence on long distance trade networks was necessary for these sedentary populations (Cobb 2000). Cobb suggests that most small populations and chiefdoms performed their lithic production within the household or community level. If lithic materials were produced locally and maintained

within the household, then it is possible to learn a great deal from the lithic assemblages of Mississippian sites.

4.1 Microdebitage and Site Formation Processes

The examination of site formation processes was a concept made common in the 1970s by the processual archaeologist, Michael Schiffer. Schiffer explains factors influencing the actions of the manufacturers of stone tools, focusing on the social processes and the traits of completed stone tools (Schiffer 1972). This model presents the life history of artifacts distributed into the archaeological record. Artifact size, discard location, and post-depositional disturbances all play vital roles in how we interpret the archaeological record.

The presence of technological evidence can prove useful for understanding site function when site preservation is poor, leaving researchers with primarily lithic debris to provide insight to site inquiries (Cowan 1999). Per Schiffer, archaeologists can infer a great deal of information about differing uses depending on location of lithic assemblages. Discarded waste can be unearthed both in the location of use and intentional disposal locations. Primary refuse refers to litter that is left behind in the location in which it was used, whereas secondary refuse refers to debris that was transferred from the use area location (Schiffer 1972, 161).

Artifact size plays a large role in site interpretation, and can be used in conjunction with location of discard to aid in the determination of site formation processes. It is possible to discern site formation processes through the recovery and examination of microdebitage (Hull 1987). These tiny artifacts are less likely to be transported to an alternate refuse location, and are often associated with primary refuse

when represented in a collection (Binford 1978). Large items tend to become subject to such post-depositional disturbances as reuse or scavenging, whereas micro-artifacts are less likely to encounter such instances due to their slight size and difficulty to relocate (Hull 1987). Microdebitage assemblages are considered by some to be in-situ, and therefore, display a direct representation of the actions taken by individuals during the formation of the archaeological record (Scharlotta, Gilstrap, Neff 2011).

Location of discard can reveal a great deal of information about primary and secondary refuse patterns of an artifact assemblage. Discarded macrodebitage is likely to be obtained from its original refuse location and reshaped or re-sharpened to be discarded in an alternate location later in the artifact life-cycle. When no correlation with microdebitage is represented, macrodebitage assemblages are indicative of secondary refuse (Hull 1987). When macrodebitage assemblages have been deposited with microdebitage they can be considered as primary refuse. The use of both macro and microdebitage analysis can enrich interpretations of site formation processes in the determination of primary and secondary refuse patterns, especially when the assemblage is representative of certain cultural behaviors.

The production of stone tools creates a dangerous heap of razor-sharp lithic material, therefore the macro portion of debitage was likely disposed of in a secondary context, an area designated for refuse. Due to difficulty in relocation, microdebitage was likely left behind in the use location. The investigation of debitage offers archaeologists the opportunity to identify lithic materials in lieu of stone tools. The use of 1/8" or smaller screens during the retrieval of microdebitage is essential to determining processes

of site formation. The addition of microdebitage analysis provides a comprehensive range of material exchange to lithic studies.

4.1.1 Data Enriched by the Addition of Microdebitage Analysis

"Standard survey methods in the Southeast typically require the use of 6.35-mm (1/4") mesh for screening shovel test fill, and most Phase II testing standards require a minimum of 6.35-mm mesh as well" (Price 2012, 13). The use of 1/4" screen during the excavation process can often result in the loss of valuable artifacts that could have provided useful information about the archaeological record. "Even if the tool itself is not recovered, debitage can provide ample material to investigate the source materials being used at a particular site" (Scharlotta, Gilstrap, Neff 2011, 877). While using a 1/4" mesh to sift material is the less time-consuming option for excavation, a 1/8" (3.17 mm) mesh can seize a significant amount of lithic material that is potentially overlooked with the use of a larger sized screen. Excavations where collection of micro-artifacts is not intended the use of 1/4" mesh is satisfactory; however, if research investigations are determinate upon the recovery of microdebitage then the use of a smaller screen mesh would ensure an encompassing illustration of lithic activities.

Michelle Hammond's analysis (2013) of the Woodland settlement site of Clark Lake in Sharkey county, Mississippi was enriched through the addition of microdebitage analysis. When comparing the 1999 field season in which the use of 1/4" screens were implemented with the 2009/2010 excavation in which 1/8" screens were used, Hammond articulates that "the large amount of debitage recovered from size grade 4 and 5 indicates that the use of one-fourth inch screen during the screening process shows that some important data may be lost or sacrificed for ease and expediency in excavations, and

sampling errors may occur" (Hammond 2013, 116). Hammond screened sediment samples through geological screens to obtain exotic material. Exotic raw materials such as andesite and basalt were predominantly recovered from the small size graded lithic material, indicating that the discovery of any exotic raw materials within this site was dependent upon the use of 1/8" to 1/16" (1.58 mm) mesh screens during the excavation process. Price (2012) also illustrated multiple site analyses (1RU142, 22LI504, 1CK56) that were enhanced by the addition of microdebitage data and research goals via the recovery of exotic raw materials. For example, over 90% of raw materials recovered from 1RU142 were present only in the microdebitage assemblage, and any evidence of non-local Knox chert flakes were solely microdebitage. The addition of microdebitage recovery and analysis can offer a complete representation of the lithic assemblage.

As evidenced in archaeological reports from Camp Shelby in Forrest County, Mississippi, most microdebitage is lost during artifact recovery when 1/4" or larger screens are used for retrieval. A large amount of lithic debitage recovered from the Camp Shelby site 22FO1515 belong to the smallest size grades of 4 and 5. The number of pieces of debitage recovered from this site is 3,878; 1,944 flakes were recovered from the size grade 4 screen and 675 flakes recovered from the size grade 5 screen, which is half of the entire debitage collection for the site. This example of more than half of excavated lithic debitage belonging to size grades 4 and 5 demonstrates the importance of utilizing smaller screens during excavation (Jackson 2012).

Multidisciplinary research that included microartifacts (lithics, etc.) at the Widows Creek site in Jackson County, Alabama (dating from the Early Archaic (BC 8000) and into the Mississippian period (AD 1000) provided insight into the nature,

timing, and intensity of occupation as well as environmental factors and site formation processes that effected stratification attributes (Cyr et al. 2016). Comparative analysis of microartifacts, and sedimentologic, geochemical, and macrobotanical traits revealed occupational practices throughout the life of this flood-prone site. High concentrations of unmodified rock (thought to have been brought in via foot traffic) suggested that the site saw prolonged usage. The research concluded that site use was not necessarily correlated with changing flood-plain levels, and occupation was based on the access to shellfish, waterfowl, and fertile soil for the growth of seed crops (Cyr et al. 2016).

Examination of density plots to reveal activity areas within Mississippian house sites in western Tennessee proved that the analysis of microartifacts can be useful in recreating cultural behavior and can differ from larger artifact information. The recovery of 100 copper chloride ore slivers measuring 1-2mm, possibly exploited to make green pigmentation used in the formation of elite earspools, was minimally present in the larger size-graded artifacts (Homsey-Messer & Humkey 2016). An element not indigenous to the area, the presence of numerous copper artifacts, provides researchers with evidence of exotic trade. Analyzing microartifacts can reveal new information about cultural behaviors not observed in the larger size-graded assemblage.

Most archaeological sites are nominated for the NRHP under Criterion D: the site must generate information that is significant in the history or prehistory of a region (Little et al. 2000; National Park Service 2001; Johnson, Pritchard, Poplin: 2016). A prime example of a Cultural Resource Management (CRM) survey enriched by the addition of microdebitage analysis is the Meade County, Kentucky site 15MD543, listed as potentially eligible for the NRHP under Criterion D (Johnson, Pritchard, Poplin 2016).

The site was initially screened using 1/4" screens, and when abundant microdebitage was discovered in the soil, close attention was paid to the collection of the small artifacts. Phase II testing commenced after the site was deemed potentially eligible, and 1/8" screens were implemented in the recovery process. Many diagnostic bifaces were recovered, and half of the lithics recovered from 15MD543 were microdebitage. A wider variety of local and non-local materials were identified using a combination of both the macro and microdebitage, than using the macrodebitage collection alone. The quantity of microdebitage suggests more concentrated cultural activity; most lithic activity at the site was that of late-stage reduction. The presence of prolific microdebitage densities in soil transitions, aligned with scattered macrodebitage artifacts, allowed for the discovery of a buried occupation surface. Without the addition of microartifact analysis (MAA), this site would have appeared to be a basic lithic scatter, and would not have been recommended for NRHP listing (Johnson, Pritchard, Poplin 2016).

Though the use of smaller screens may be necessary for the interpretation of sites such as Winterville, the collection and analysis of microdebitage may not be feasible for all archaeological investigations, particularly CRM. The CRM arena must focus upon questions that could enhance excavation results prior to developing MAA as a research tool: "(1) Can MAA contribute to site interpretations and eligibility determinations? (2) Which collection and laboratory methods are most appropriate and can they be undertaken in a cost-effective manner? (3) What types of archaeological sites warrant the use of MAA?" (Johnson, Pritchard, Poplin 2016, 39).

MAA is being used as a research tool to fill the gaps of data left by the investigation of the larger size-graded lithics at Winterville. Microdebitage findings

aligned with previous investigations of macrodebitage will aid in the conclusive determination of a specific sociopolitical scheme of Winterville, based on the frequency wherein elites obtained non-local raw materials.

"Culture is said to be historically created. Thus, it is not surprising that, viewing human products as reflections of the culture carried by the makers, we hope to convert contemporary observations into statements about past culture" (Binford 1977, 180). One of the primary goals of modern archaeology is to reconstruct past cultures and lifeways, and I believe that the study of microdebitage assemblages aides in the understanding of this significant objective. The analysis of microdebitage proves that substantial inferences can be ascertained from the investigation of tiny objects.

4.1.1.1 The Organization of Technology

The Organization of Technology (TO) approach to lithic analysis is commonly used by archaeologists to comprehend relationships between economic and social strategies, and the environment. Margaret Nelson defines the organization of technology as "the study of the selection and integration of strategies for making, using, transporting, and discarding tools and the materials needed for their manufacture and maintenance. Studies of the organization of technology consider economic and social variables that influence those strategies" (Nelson 1991, 57). The organization of technology approach began with Lewis Binford, became popular in the 1980s, and is a commonly employed framework for the examination of lithic materials.

Lewis Binford was highly influential in TO studies concerned with foraging and collecting, settlement mobility patterns and curation among hunters and gatherers, as expressed in his studies of the Nunamiut (Binford 1977, 1979, 1980). Lewis Binford was

a key contributor to the creation of lithic studies based upon organization of technology analysis as exemplified in many published articles, most significantly "Organization and Formation Processes: Looking at Curated Technologies", as he studied the many elements of the organization of Nunamiut Eskimo gear and procurement strategies in which he coins the terms "active" and "passive" gear (1979). The article "Willow Smoke and Dog Tails" displays research upon the differing degrees in which the Nunamiut organized residential strategies and how this related to logistical mobility (Binford 1980). Binford describes curated gear as a sophisticated technology that was often recycled, reused, and heavily maintained (Binford 1979). Expediently designed tools were shaped from available raw materials and were utilized for immediate needs. Expediently used tools should be thought of as a response to environmental conditions that were promptly shaped, used and swiftly discarded (Binford 1979).

Margaret Nelson drew from the studies of Binford and others of the organization of technology as strategy to create an outline of theory in "The Study of Technological Organization" (Nelson 1991). She created a diagram depicting the life cycle of stone tools which begins with lithic procurement, manufacture, use, reuse, and ends with discard (Nelson 1991). Nelson provides researchers with an encompassing overview of material associations for interpreting site functions. These inferences suggest that correlation between minor importance on opportunistic behavior, evidence of stockpiling in addition to differing stages of reduction are behaviors which are indicative of residential site locations. Nelson suggests that using the technological strategies approach has limitations and therefore should be used in conjunction with independent

lines of evidence to further strengthen inferences about type site associations (Nelson 1991).

Per Charles Cobb, the most successful TO studies investigate the methods in which lithic technological organization can merge with independent lines of evidence to make inferences applicable to anthropological archaeology (Cobb 2000). Additionally, evaluating the relationship between settlement mobility and lithic procurement and reduction strategies as well as recording and describing the universal change from intense utilization of formal tools to expedient stone tools are two successful studies in the technological organization method (Cobb 2000).

"The key to studies of technological organization is relating artifacts, such as chipped stone tools and debitage, to a variety of economic and social parameters that allow sound inferences concerning the dynamics of past cultures" (Carr 1994, 1). I used TO studies within my thesis by analyzing the microdebitage located within Mound C to greater understand the in-situ activities of the inhabitants and I verified whether exotic raw materials are present in the microdebitage collection to reveal if trade was an integral element of the Winterville elite. Mound C has proven to be the most prolific locality in the recovery of lithic materials, therefore was an ideal location to begin my microdebitage analysis.

CHAPTER V –MATERIALS AND METHODS

"One of the primary purposes of lithic raw-material identification is to determine the provenance or source location of the stone used for the production of stone artifacts" (Andrefsky 1998, 41). Analysis and research of 1/16" (1.58 mm) mesh-screened lithic material recovered from the Winterville site is imperative to the understanding of stone tool resource trade during the Mississippian period. Much of the archaeological record is lost during an excavation or shovel testing when using 1/4" (6.35 mm) mesh screens for recovering artifacts. While lithics were largely absent from other excavated locations, they were recovered in abundance from the summit of Mound C and Area A. Previous lithic analyses were performed on the >1/4" lithics from these locations, and analysis of the microdebitage provides a comprehensive evaluation of Winterville lithics. The investigation of microdebitage from both the residential site of Area A and the elite-occupied summit of Mound C could potentially enhance the understanding of both exchange and site activities associated with Winterville.

Per Sarah Price, "standard survey methods in the Southeast typically require the use of 6.35-mm (1/4-inch) mesh for screening shovel test fill, and most Phase II testing standards require a minimum of 6.35-mm mesh as well" (Price 2012, 13). One-sixteenth inch mesh screens in addition to 1/4" screens were used for the recovery of artifacts from the Winterville mounds site. Buckets of excavation fill were placed into a 1/4" mesh screen with a 1/16" mesh screen below it and then water screened to recover artifacts from the compact soil. The artifacts were then dried in the sun and placed in bags labeled 1/4" or 1/16" sized artifacts. Though previous research has been performed on the >1/4"

lithic materials recovered from the Winterville mounds site, the lithics that are 1/16" or smaller in size had not been analyzed.

To begin my project, I first examined the previously-analyzed lithic research to become familiar with disparities in larger-sized lithic data. My project is an extension of the research performed by Barbara McClendon (2012), who analyzed the larger size-graded lithics of Mound C. She determined that small quantities of non-local lithics in the assemblage were a representation of the re-sharpening and re-shaping of stone tools. Re-sharpening and re-shaping of stone tools is generally evident solely in the <1/4" water-screened material. This research prompted my decision to determine if there was evidence of exotic material in the re-sharpening/re-shaping collection, since non-local materials were largely lacking in the larger-size graded lithics.

Jennifer Winter (2009) investigated the larger-sized lithics from Area A, and concluded that local chert was the dominant raw material in this locale. Winter called for an analysis of the microdebitage to confirm her deduction. I then decided to compare the two locations to determine if there was a difference between elite (on-mound) and non-elite (off-mound) access to exotic raw material, to further comprehend the sociopolitical schema once upheld by the Winterville elites. Though non-local material was not largely represented in previous lithic studies, I anticipated that Mound C would produce more non-local materials than Area A; exemplifying at least some differential access to raw materials.

I sifted through the water screened material from Area A and Mound C proveniences to recover the 1/16" microdebitage. Recovered microdebitage was then placed in a separate appropriately labeled bag. The microdebitage was examined through

individual flake analysis (Magne 1985) and scored on a variety of different attributes such as color, raw material, lipping, cortex, scarring, and weight. Individual flake analysis provides debitage to a reduction stage based on key attributes: late stage flakes often exhibit multiple dorsal scars and facets and display platform lipping (Magne 1985). I determined if exotic lithic raw materials were represented. To determine types of lithic raw material of the microdebitage, I used the aid of a microscope as well as a stone material comparative collection housed at the USM archaeology laboratory. I then entered all results into Excel and manipulated the spreadsheet to gather artifact totals for each provenience of the site, level, and quad. Additionally, I used Excel to determine levels of highest artifact concentrations for each level/quad of Structures 1 and 3 of Mound C. I then used the Organization of Technology approach to interpret my data to demonstrate how microdebitage can clarify the relationship between economic and social relationships and the environment. Figure 5.1 below provides a list of the data scoring codes used for the microdebitage analysis.

MICRODEBITAGE INDIVIDUAL LITHIC ANALYSIS:
Winterville Mound C and Area A (22WS500)
DATA SCORING CODES

WT=weight in grams

RM=raw material
- 1=Local Chert Gravel-heat Treated
- 2=Local Chert Gravel
- 3=tallahatta quartzite
- 4=quartzite gravel
- 5=sandstone
- 6=agate
- 7=petrified wood
- 8=white chert
- 9= Kaolin
- 10= Novaculite
- 11= Burlington Chert
- 12= Coastal Plain Chert
- 13= Kosciusko Quartzite
- 14= Mill Creek Chert
- 15= Upper Mercer (Ohio) RM 92
- 16= Dover
- 17= Knox Chert (78)
- 18= Brush Creek
- 19= Dover-Heat Treated
- 20= Basalt
- 21=Ft Payne Chert

PO=portion
- 1=complete flake
- 2=proximal (with platform)
- 3=medial
- 4=distal
- 5=blocky fragment/shatter
- 6=split longitudinally
- 7=potlid/fire shatter
- 8=rock
- 9=other

PL=platform
- 1=no cortex; non-lipped
- 2=cortex; non-lipped
- 3=no cortex; lipped
- 4=cortex; lipped
- 5=indiscernible cortex; lipped
- 6=indiscernible cortex; non-lipped
- 7=incomplete/not present
- F=number of platform facets (1-5). 6= more than

CX=cortex
- Y=present, N=not present

CO=color
- 1=Red
- 2=Pink
- 3=Tan
- 4=Light Brown
- 5=Dark Brown
- 6=Yellow
- 7=White
- 8=Gray
- 9=Black
- 10=Multi (Specify)

DS=dorsal scars (1-5)
- 0=cortex
- 6=more than five
- 9=indiscernible

MO= modification
- 0=none obvious
- 1=retouch-one edge
- 2=retouch-two plus edges
- 3=utilization-possible
- 4=utilization damage-obvious

Figure 5.1 Data scoring codes for microdebitage analysis.

Dry-screened material was not used for this analysis, as the <1/4" screens were used solely on the water-screened material. This is demonstrated in my comparison of Structures 1 and 3 of the Mound C summit, where many quads were not water-screened. Comparison of water-screened quads per structure was used to determine microdebitage ratios and variations between the two chronologically different proveniences. The presence or lack of exotic raw material found in the water-screened lithics from the Winterville site would answer questions of exotic trade routes of peoples occupying the Mississippi delta during this time. Additionally, this research may contribute to further knowledge of the Winterville sociopolitical classification.

It is the researcher's belief that there is much more to be learned from lithic material recovered from the Winterville site. Based on previous studies showing predominantly local sources, I expect the microdebitage analysis will provide similar results. Evidence of exotic trade or lack thereof recovered from the <1/4" microdebitage can provide researchers with the answers to questions of sociopolitical strategies forged by the Winterville elite. The control of crafts and large abundance of exotic materials in the possession of a few are signs of a network sociopolitical strategy, and as yet, researchers have failed to uncover such evidence from Winterville. Most lithic material analyzed from Mound C signify an abundance of locally sourced chert, indicating that Winterville elites did not exploit exotic materials for individual gain, an attribute of corporate political chiefdoms (McClendon 2012, 5). Exotic raw materials may not appear to be prevalent in the archaeological record, due to the presumed arrival of exotic raw materials in complete tool form. These tiny exotic artifacts were most likely the result of retouch, producing a reliance of the discovery and analysis of in-situ microdebitage.

CHAPTER VI –RESULTS

Some 2,172 microdebitage artifacts were analyzed from Mound C and Area A using nine attributes; the results of each explained in Chapter VII. The use of trace element analysis would be the ideal method for classifying geological sources due to its accuracy of identification (Bradbury and Carr 2000, 121), yet was not financially feasible for this project. Raw material was identified instead using microscopic comparison with the lithic comparative collection at USM's archaeology laboratory.

As seen in Table 6.1 and Figure 6.1, the large majority of analyzed artifacts were of materials of local origin. Forty-two percent (914) of the artifacts were categorized as heat-treated local chert and forty percent (879) were non-heat treated local chert, totaling 83% (1,793) local chert microdebitage flakes. Sixty-five artifacts were identified as Quartzite gravel, 48 as Kaolin, 46 as White Chert, 42 as Novaculite and Brush Creek, 31 as Burlington chert, 28 as Tallahatta Quartzite, 23 as Coastal Plain chert, 12 as Mill Creek Chert, ten as Sandstone, nine each as Petrified Wood and Fort Payne chert, four each as Dover chert and Upper Mercer, two each as Kosciusko Quartzite, and heat-treated Dover chert, and one each of Basalt and Knox chert.

Table 6.1 Raw Material Totals of Entire Microdebitage Assemblage

Raw Material and Totals	
Local Heat-Treated Gravel	914
Local Gravel	879
Quartzite Gravel	65
Kaolin	48
White Chert	46
Novaculite	42
Brush Creek Chert	42
Burlington Chert	31
Tallahatta Quartzite	28
Coastal Plain Chert	23
Mill Creek Chert	12
Sandstone	10
Fort Payne Chert	9
Petrified Wood	9
Upper Mercer	4
Dover	4
Kosciusko Quartzite	2
Dover Chert; Heat-Treated	2
Knox Chert	1
Basalt	1

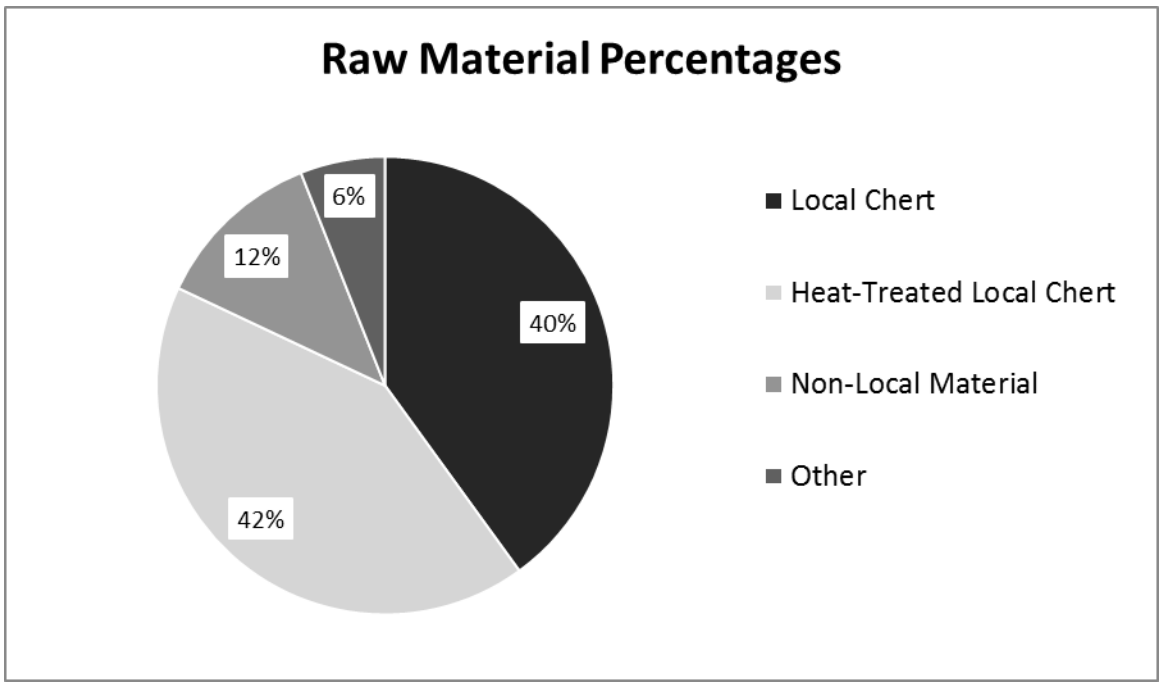

Figure 6.1 Raw material percentages for entire microdebitage assemblage.

Some 16% (339) of the microdebitage assemblage is comprised of complete flakes; 5% are proximal flakes; 10% are medial flakes; 22% are distal flakes; 26% are blocky fragments; 21% are fire shatter; and less than 1% of the analyzed artifacts are rocks or classified as "other." Evaluation for heat-treatment modification was performed based on characteristics such as pock marks, glossy texture, red/pink color of interior, and obvious discoloration of present cortex.

Table 6.2 shows that cortex was present on 23% of the microdebitage assemblage. Eighty percent of the assemblage has an incomplete/non-present platform. Of the 421 flakes that have complete platforms, 42% flakes display cortex and 10% exhibit lipping. Microdebitage flakes that have incomplete platforms have zero facets. Of the flakes that have complete platforms, 50% percent have one facet, 23% have two facets, 1% have three facets, and less than 1% have more than three facets.

Table 6.2 Raw Material Totals of Flakes Exhibiting Present Cortex.

Cortex	
Raw Material	**Total**
Local Gravel Chert	270
Local Chert Gravel: Heat-Treated	168
Kaolin	8
Brush Creek Chert	5
Coastal Plain Chert	5
White Chert	5
Fort Payne Chert	4
Burlington Chert	4
Mill Creek Chert	3
Tallahatta Quartzite	3
Novaculite	2
Heat-Treated Dover Chert	1
Upper Mercer	1
Basalt	1
Total	480

The microdebitage assemblage from Mound C and Area A contains a wide variety of colors (the full range of colors and artifact totals can be seen in Table 6.3): red is the most frequently represented color at 37%. Red material is associated with the practice of heat-treatment modification. Heat treatment denotes the most frequent lithic modification in the microdebitage assemblage. Heat alteration is done by slowly heating lithic raw material, hence modifying the crystalline composition of the material. This structural modification makes it possible to flint knap with greater ease (Raviele 2007: 104). Both Mound C and Area A contain abundant heat-treated microdebitage artifacts, constituting 42% of the entire assemblage.

Heat-treated local raw material accounts for 914 microdebitage samples; 603 (27%) heat-treated local raw material specimens were recovered from Mound C, and 311 (14%) from Area A. Tan is associated with local chert and is the second most represented color recovered at 27%. The least represented colors are black with one sample and blue with four samples. Upper Mercer, a raw material obtained from Ohio, represents the microdebitage artifacts that have a navy-blue color. The single black artifact was identified as Basalt.

Table 6.3 Total of Lithic Specimens by Color

Color and Totals	
Red	794
Tan	581
Light Brown	228
Pink	187
White	111
Yellow	105
Gray	77
Multi	49
Dark Brown	35
Blue	4
Black	1

Some 48% of the microdebitage has indiscernible dorsal scars, which is due to the large amount of fire shatter, medial and distal portions, and blocky fragments represented in the assemblage. 21% of the assemblage has one dorsal scar; 20% has two dorsal scars; 20% has three; and 5% represent four or more dorsal scars. 270 or (31%) of the 879 local chert micro-flakes show signs of cortex; 3 or (27%) of the 11 Tallahatta quartzite samples had cortex; cortex was present on 168 (18%) of the 914 local heat-treated samples. Cortex was present on eight Kaolin artifacts, five specimens each of Brush Creek,

Coastal Plain chert, and white chert; four each of Fort Payne and Burlington chert flakes; three Mill Creek Chert artifacts, two Novaculite artifacts, and one each of Heat-Treated Dover chert, Upper Mercer, and Basalt samples. Cortex was present on 150 (44%) of 339 complete artifacts; 270 incomplete artifacts show signs of cortex; Cortex was present on 23% of the entire microdebitage assemblage from Mound C and Area A. Cortex percentages were not scored, as is a difficult task when scoring microdebitage artifacts.

An overwhelming 99% of the assemblage shows no signs of modification in the form of retouch. Any modification represents less than 1% of the assemblage. Only 26 flakes showed signs of obvious utilization: this is likely retouch exemplifying utilization from the stone tool it was knapped. The large majority (79%) of artifacts weigh less than .01g.

Of the microdebitage that have complete platforms, most have at least one facet. Small amounts of these exhibit lipping and cortex; lipping is a trait of soft-hammer percussion, associated with late stage reduction. The presence of cortex is not necessarily reflective of early-stage reduction since small nodules often encompassed local chert. The large amount of incomplete debitage could be the product of breakage during retouch or the result of broken larger-sized flakes. Both Mound C and Area A contain abundant heat-treated microdebitage artifacts; 39% of the entire assemblage. The occupants of Winterville likely used heat-modification to fully exploit available raw materials. The microdebitage assemblage is likely the product of the re-shaping and re-sharpening of complete stone tools to maximize use-life.

6.2 Raw Materials and Their Source

An assortment of raw material was uncovered from the microdebitage of Mound C and Area A. Though only 15% of the microdebitage assemblage was recognized as exotic material, a wider variety of non-local lithics were identified than in the previously analyzed larger size-grades. In total, 21 types of raw material appear in the microdebitage assemblage. Evidence of Winterville exchange ranged from locally acquired resources to material attained from such distant locations as Southern Illinois and Ohio.

Gravel chert of the Delta is the most represented lithic raw material in the microdebitage collection, with 1,793 specimens. Some 42% of the local chert displayed signs of heat-modification, a practice which made local gravel more efficient during flint knapping. Heat modification will be further explored in the following section.

Kosciusko quartzite is seen in a mere two artifacts. This material has a green-gray color, is fine-grained in texture, and is most notably sourced from a narrow band in north-central Mississippi (Galloway & Peacock 2015). Quartzite gravel accounted for 3% of the collection, and Tallahatta Quartzite was present in the assemblage minimally (28 samples). Tallahatta Quartzite is a gray-translucent colored material with white spots, appearing granular in nature. The main locus of acquisition was the "Tallahatta Hills of southern Alabama northwestward through Lauderdale County and into north-central Mississippi" (McGahey, Dockery, Ingram 1992, 38).

Twenty-three microdebitage samples were identified as Coastal Plain chert, likely sourced from the widespread outcrops in Southeastern Alabama or the upper Coastal Plain section of the Savannah River in (Randolph 2001, 240). Novaculite (42 samples) is

a chert with formations located from Arkansas to Oklahoma and outcrops in Texas. Fort Payne chert (nine samples) is a raw material with outcrops from Tennessee into northeast Mississippi and Alabama. The single Knox chert flake recovered was dark brown in color and is sourced from quarries in Tennessee. Dover chert (four samples) is a raw material with sources in western Tennessee. Comparable to Mill Creek chert, Dover was formed into prolific amounts of utilitarian tools that were traded throughout the Southeast (Cobb 2000).

The Central Mississippi River Valley has an abundant variety of raw materials. Sourced from southern Illinois, Mill Creek chert (represented by 12 specimens) is largely associated with the Cahokia chiefdom and was exploited to craft utilitarian and ceremonial axe-heads that were traded throughout the southeastern United States during the Mississippian period (Cobb 2000). Cahokian influence is also present in the Lower Mississippi Valley at the Lake George site: a single Mill Creek chert flake was recovered from Mound J, and a "Cahokia-horizon diagnostic" was identified, Mississippi Triangular *var. Titterington* (Brain & Williams, 1983, 236). Known for its durability and long use/reuse life, Mill Creek chert was chosen to form stone tools over other materials in the region.

Kaolin (represented by 48 samples) is primarily found in southern Illinois, about 20 kilometers north of Mill Creek quarries (Cobb 2000, 120). The Crescent Quarries of Missouri were mined for Burlington chert (31 samples) to make various tools that were widely disbursed throughout the Southeast during the Mississippian period (Cobb 2000). Further evidence for Burlington chert exchange in the Northern Yazoo Basin was

recovered from the Carson Mounds site, roughly 80 miles north of Winterville (Butz 2015, 108).

Upper Mercer is a dark-colored chert that appears as navy blue in the Winterville specimens, and is sourced from outcrops in Coshoncton, Ohio (Converse 2007, 192). Upper Mercer is represented by four microdebitage artifacts (three from Mound C, one from Area A). Brush Creek, a type of chert that is high in silica content, is represented by 42 samples, and is found in outcrops in Adams County, Ohio. One artifact was recognized as Basalt, which is a dark-colored volcanic igneous rock with quarries as near as eastern Texas.

A substantial variety of raw materials was identified in this research, linking Winterville exchange to local material like Kosciusko Quartzite and exotic materials such as Upper Mercer in Ohio. The trivial quantity of each material type represents the absence of Mississippian influence in the acquisition of exotic materials intended for the ornamental display of elite wealth and prestige. Based on the microdebitage and larger size-graded analyses the Winterville society was principally dependent upon obtaining local material resources, reinforcing previous inferences that the Winterville elite upheld a corporate sociopolitical scheme.

6.2.1.1 Structures of Mound C

Mound C is a platform for a succession of building episodes, each revealed during the 2009 and 2011 field seasons (Jackson 2012). Four structures were unearthed from the summit of Mound C by 2011 field school participants. Two of the structures (Structures 1 and 3) have firm radiocarbon dates associated with in-situ debris removed from occupation floors. Structures 1 and 3 are associated with different phases of Winterville

occupation (refer to Figure 6.2 for the excavation locations of Structures 1 and 3). Structure 3 is the earlier construction, over which later buildings were erected, dating to the Winterville into Lake George phases. Structure 1 was a later construction, dating to the late Lake George phase, a time characterized by Brain (1989) as one of occupational decline in Winterville. Differences in microdebitage frequency in these locations could potentially reveal changes in site activity over time and aid in the determination of a specific sociopolitical scheme once upheld by Winterville elites.

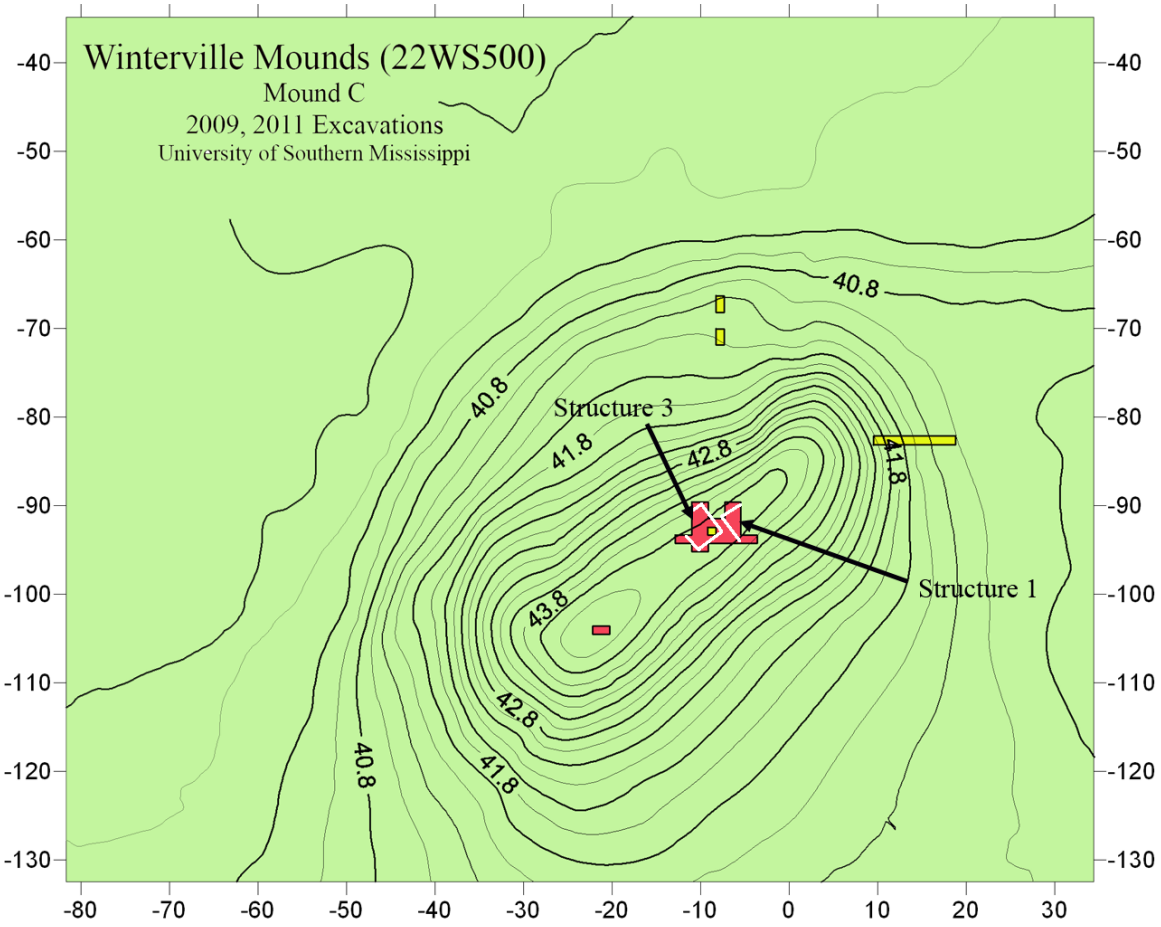

Figure 6.2 Map of Structures 1 and 3 on the Mound C summit

(Adapted from Jackson 2012, Slide 4)

Structure 3 is the earlier of the two locations. It had an obviously exposed floor on the surface of Level 6, associated with an abundance of artifacts. A Mississippian Plain jar, river mussel shells, and a cane-mat were clearly in-situ on the structure floor (Jackson 2012). Radiocarbon dating from the cane mat revealed dates of AD 1320-1350 and AD 1390-1430 (Winterville into Lake George phases).

Some 115 total microdebitage artifacts were recovered from the units encompassing Structure 3. Local chert is the most prominent raw material recovered from Structure 3 (refer to Table 6.4 and Figure 6.3), comprising 50% of the collection. Some 37% of the microdebitage recovered from Structure 3 was identified as heat-treated local chert, 4% as Brush Creek chert, 3% as Sandstone and white chert, 2% as Kaolin and Novaculite, and 1% as Quartzite gravel. Most of the microdebitage recovered from Structure 3 is that of local origin, with only minute traces of exotic trade (8%). Minimal variation in material type is expressed in the microdebitage assemblage of Structure 3.

Table 6.4 Structure 3 Raw Material Totals

Structure #3	
Raw Material	**Totals**
Local Chert	57
Heat-Treated Local Chert	42
Brush Creek	5
Sandstone	3
White Chert	3
Kaolin	2
Novaculite	2
Quartzite Gravel	1

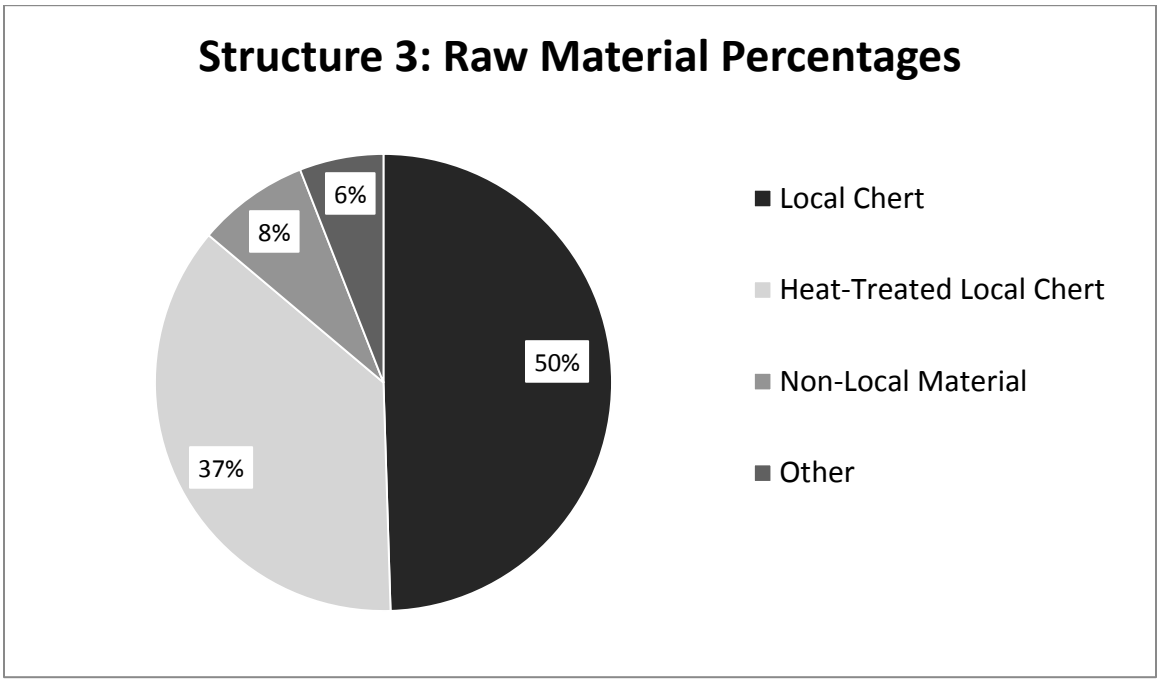

Figure 6.3 Structure 3 raw material percentages.

A radiocarbon date of AD 1450 was taken from samples of carbonized maize recovered from the occupational floor of Structure 1. This date provides occupational evidence of Mound C well into the Lake George phase. According to Brain (1989) Winterville witnessed occupational decline during the Lake George phase, and eventual

abandonment by the end of this phase. Artifactual evidence for later occupation dates could disprove this interpretation.

Along with radiocarbon dates, pottery recovered from these structures also provides an occupational timeline for the summit of Mound C. Diagnostic ceramics from significant areas of the Mound C summit are scarce. *Belzoni* sherds were recovered from Level 4 of S93W8, and *Leland* sherds from Level 4 of S93W10: both dating to the Lake George I phase. S91W12 produced a single *Belzoni* sherd from Level 4; a Leland Incised, *var. Ferris* from Level 6; and a Barton, *var. Ferris* from Level 7; all are markers of the Lake George I phase. A single sherd of Leland Incised, *var. Deep Bayou* was recovered from Level 2 of S93W8 and another from level 2 of S91W8: dating to the Lake George II phase (H. Edwin Jackson, personal communication, May 2017). Thus, Mound C summit ceramics align with radiocarbon dates and present further evidence of that the mound continued to be used at least until near the end of the Lake George phase.

One hundred seventy microdebitage artifacts were recovered from the units encompassing Structure 1. As seen in Table 6.5 and Figure 6.4, 56% of the microdebitage is recognized as heat-treated local chert, 27% as local chert, 5% as Quartzite gravel, 4% as Coastal Plain chert, 2% as white chert and Brush Creek chert, and less than 1% as Dover chert, Tallahatta Quartzite, and Mill Creek chert. As in Structure 3, Structure 1 also is dominated by local raw materials, with minimal representation of exotic material (10%) in the assemblage. The accumulation of exotic material was non-significant to the Winterville elite, though they were active participants in the Mississippian world around them.

Table 6.5 Structure 1 Raw Material Totals

Structure #1	
Raw Material	**Totals**
Heat-Treated Local Chert	95
Local Chert	46
Quartzite Gravel	9
Coastal Plain Chert	6
Novaculite	3
Kaolin	3
White Chert	2
Brush Creek	2
Petrified Wood	1
Dover Chert	1
Tallahatta Quartzite	1
Mill Creek Chert	1

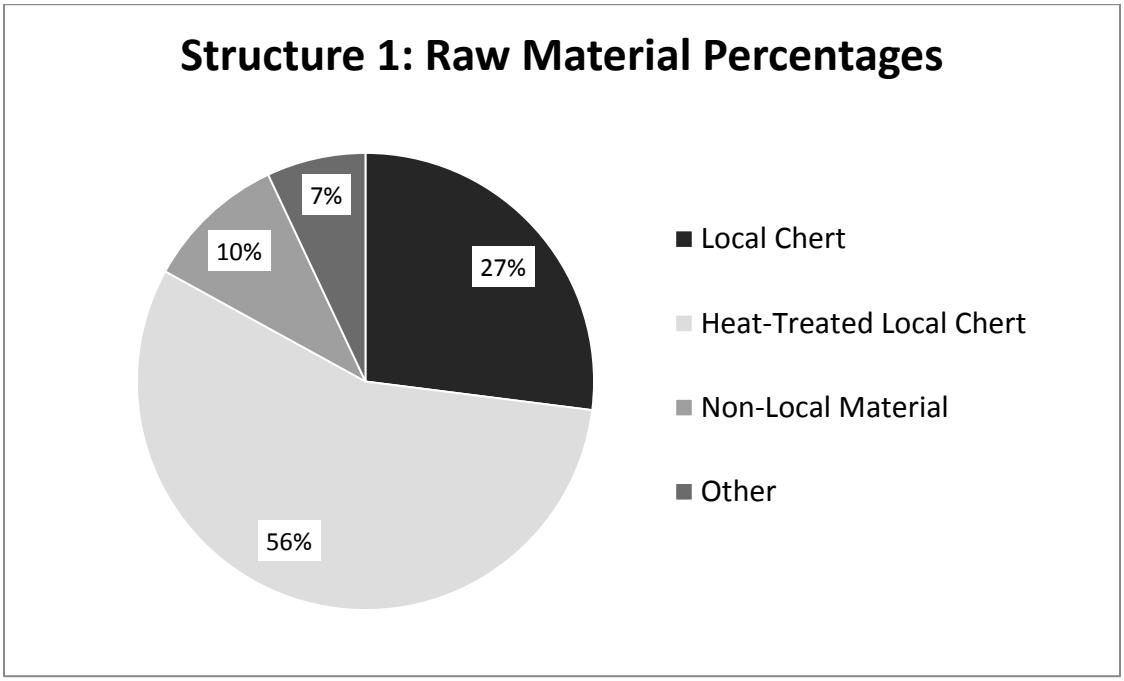

Figure 6.4 Structure 1 raw material percentages.

Interestingly, Structure 1 is represented by fewer units than Structure 3 yet produced more artifacts. This is due to the placement of excavation units in relation to the locations of the structures. The floor of Structure 3 was fully exposed, while merely about half of the Structure 1 floor was uncovered. Structure 3 is represented by 11 total quads of water-screened material; Structure 1 includes eight total quads of water-screened material (Tables 6.6 and 6.7).

Table 6.6 Water and Dry-Screened Units of Structure 3.

Structure 1: Mound C Summit			
Unit	**Size**	**Level 4**	**Level 5**
S93W8	2x2	All quads: water-screened	All quads: water-screened
S91W8	2x2	All quads: water-screened	All quads: water-screened

Table 6.7 Water and Dry-Screened Units of Structure 1.

Structure 3: Mound C Summit			
Unit	**Size**	**Level 5**	**Level 6**
S93W12	2x2	All quads: water-screened	All quads: dry-screened
S94W14	1x2	Both halves: dry-screened	Both halves: water-screened
S94W12	1x2	Both halves: water-screened	Both halves: dry-screened
S93W10	2x2	All quads: water-screened	All quads: water-screened

Though Structure 3 consists of more quads, Structure 1 produced 55 more artifacts. Structure 1 produced 21.25 artifacts per quad versus 10.5 per quad in Structure 3. The only obvious anomaly is in S93W8 of Structure 1: 93 microdebitage artifacts were recovered from Level 4 of the NW quad, which is 55% of the total assemblage for this structure. Of those, 62 (67%) artifacts were identified as heat-treated local chert, 26 (28%) as local chert, and five (5%) as other materials. The NE and SE quads of the same level produced a total of 21 microdebitage artifacts. Therefore, the anomaly is confined

to the NW quad of Level 4. The NE quad of S93W12 has the highest concentration of microdebitage in Structure 3, with 37 artifacts. Unlike Structure 1, Structure 3 did not present any noticeable irregularities. On average, Structure 3 produced 10 artifacts per quad, and Structure 1 yielded 17 or fewer artifacts per quad (discounting the anomaly); the presumed consequence of standard re-sharpening and re-shaping of stone tools. The variance in Structure 1 is presumed to be the result of a designated tool-making area of the structure floor.

The units associated with the summit of Mound C produced over 800 total microdebitage artifacts; however, most of these were not recovered from the levels that comprise these structures. The large quantities of artifacts recovered between or adjacent to the obvious floors were possibly that of mound-fill. No clear floors with intervening construction floors were identified after the construction episode that covered Structure 3. The structures appear to have been built with little to no added fill during the late Winterville into Lake George phases.

Given that each structure represents differing phases of Winterville occupation, one would expect to discover heterogeneous results in the microdebitage analysis. Brush Creek samples recovered from Structure 3 provide evidence of trade with societies in Ohio. Novaculite originates from Arkansas to Oklahoma, with outcrops in Texas. Kaolin is a material sourced from Southern Illinois. Exotic material exchange is not prominent within the microdebitage assemblage of Structure 3, and is evident only in slightly larger representation in Structure 1.

Structure 1 is dated to the late Lake George phase, a time of supposed occupational decline and eventual site abandonment (Brain 1989). Evidence of non-local

raw material exchange is minimally more evident in the Structure 1 microdebitage assemblage. Coastal Plain chert samples provide evidence of trade with societies in Southeastern Alabama. Novaculite, Kaolin, and Brush Creek are again minimally represented in the assemblage of Structure 1. Dover chert was acquired from outcrops in western Tennessee, and Tallahatta quartzite is found in Alabama through north-central Mississippi.

In sum, dates associated with identified ceramics, continuity of microdebitage, and radiocarbon dates provide a comprehensive understanding of the occupational timeline of the Mound C summit. Both ceramics and lithics seem to align nicely with the radiocarbon dates, and reveal a homogeneous occupational timeline. Prolific amounts of both ceramics and microdebitage are dated to the Winterville into Lake George phases, and provide evidence of outside trade during this time. Late ceramic varieties along with a larger variety and quantity of non-local artifacts recovered from Structure 3 indicates that site activity during the Lake George phase was previously misunderstood. Brain (1989) suggested that the Lake George phase experienced occupational decline and eventual depopulation, yet artefactual evidence suggests otherwise. Microdebitage variety and quantity does not change drastically from the earlier Structure 3 to the later Structure 1, suggesting constant occupational activity during the Winterville and well into the Lake George phases.

6.2.1.1.2 Locus Comparison

Both Area A and Mound C produced a prolific amount of microdebitage artifacts. A wide variety of raw materials is represented in each area of the site, portraying an importance of exotic trade among Winterville elite. The extent of the role exotic trade

played in the lives of societal elite may be further understood through comparing the "commoner" residence of Area A with the elite-occupied summit of Mound C. Previous research suggests that the Winterville elite participated in a corporate sociopolitical scheme, and homogenous microdebitage results could solidify this conclusion.

Seven hundred twenty-nine of 2,172 total artifacts were recovered from Area A. As may be seen in Figure 6.5, 320 (44%) artifacts were identified as local chert, 311 (43%) as heat-treated local chert, 3% as quartzite gravel and Novaculite, 2% as Brush Creek and White Chert, 1% as Burlington and Coastal Plain cherts, and less than 1% as Kaolin, Sandstone, Petrified Wood, Mill Creek Chert, Upper Mercer, Dover, heat-treated Dover chert, and Basalt. Non-local raw materials accounted for 8% of the Area A microdebitage assemblage. Local material encompasses 87% of this assemblage. For a complete list of raw material totals refer to Table 6.8.

Table 6.8 Area A Raw Material Totals.

Area A: Raw Material Totals	
Local Chert	320
Heat-Treated Local Chert	311
Quartzite Gravel	23
Novaculite	20
Brush Creek	17
White Chert	14
Burlington Chert	5
Coastal Plain Chert	5
Fort Payne Chert	5
Kaolin	2
Sandstone	1
Petrified Wood	1
Mill Creek Chert	1
Upper Mercer	1
Dover Chert	1
Dover: Heat-Treated	1
Basalt	1

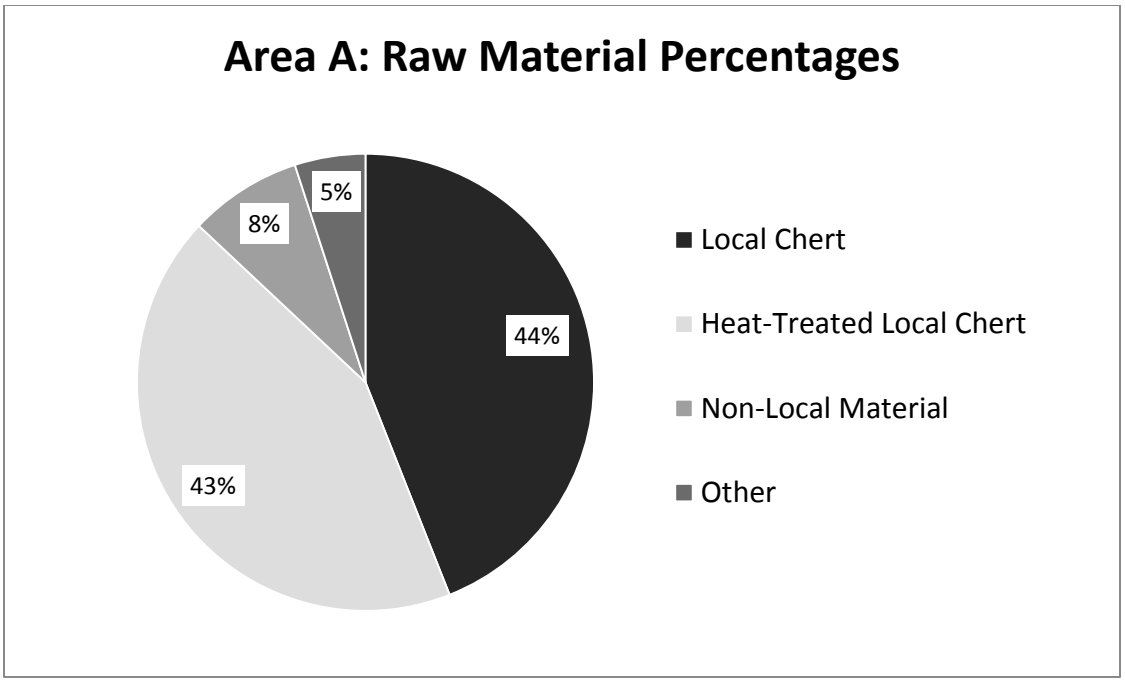

Figure 6.5 Area A raw material totals.

The Mound C microdebitage assemblage consists of 1,443 artifacts. Table 6.9 and Figure 6.6 show that 603 (42%) of the artifacts were recognized as heat-treated local chert, 559 (39%) as local chert, 3% as Kaolin and Quartzite gravel, 2% as white chert, Tallahatta Quartzite, Burlington chert, Brush Creek, and Novaculite; 1% as Coastal Plain chert, Mill Creek chert, Sandstone, and petrified wood; less than 1% of Fort Payne chert, Upper Mercer, Dover and heat-treated Dover chert, Kosciusko Quartzite, and Knox Chert. Local raw material comprises 81% of the Mound C summit assemblage. Exotic material recovered from Mound C accounts for 13% of the microdebitage, slightly more (5%) than that of Area A. Both assemblages appear to contain an abundance of exotic material types, mainly in trivial quantities.

Table 6.9 Mound C Raw Material Totals

Mound C: Raw Material Totals	
Heat-Treated Local Chert	603
Local Chert	559
Kaolin	46
Quartzite Gravel	42
White Chert	32
Tallahatta Quartzite	28
Burlington Chert	26
Brush Creek	25
Novaculite	22
Coastal Plain Chert	18
Mill Creek Chert	11
Sandstone	9
Petrified Wood	8
Fort Payne Chert	4
Upper Mercer	3
Dover Chert	3
Kosciusko Quartzite	2
Knox Chert	1
Dover: Heat-Treated	1

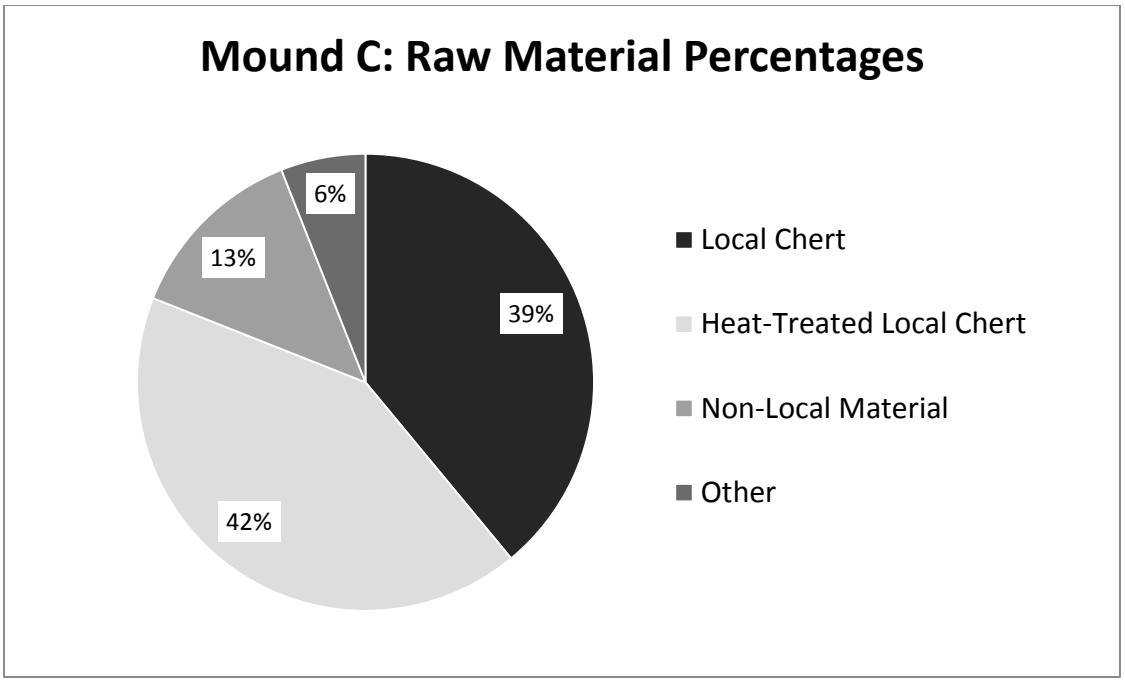

Figure 6.6 Mound C raw material percentages.

Mound C experienced a much larger excavation than Area A, therefore, variation in quantity of artifacts is expected. Generally, non-local material is represented by marginal quantities in Area A. The most represented exotic materials recovered from Area A are Novaculite with 20 (3%) samples and Brush Creek with 17 (2%) specimens. Remaining non-local material is represented in the assemblage by five or fewer (1%) artifacts each. Percentage totals provides a complete representation of materials recovered from the summit of Mound C. Exotic materials are more prominently represented in the Mound C assemblage, which is to be expected given that the collection is nearly twice the size than that of Area A. Perhaps the best representation of raw material access is through comparing Area A with the Mound C structures.

As discussed in the previous section, excavated soil between obvious floors on the Mound C summit was presumably mound-fill transported from alternate locations.

Consequently, assumptions about elite access to exotic material cannot be based predominately on total quantities of lithics alone. Microdebitage recovered from the occupational floors of Mound C present a more accurate representation of elite exchange. Some 285 total artifacts were recovered from the occupational floors of Mound C: 10% are non-local material. Eight percent of the 729 artifacts recovered from Area A were identified as exotic material. Based on these results, elites of Mound C did not have extensive access to exotic material, bolstering previous researchers' assumptions that Winterville was ruled by a corporate sociopolitical scheme (Jackson 2009, McClendon 2012).

Microdebitage analysis has provided a comprehensive examination of the entire lithic assemblage from the Mound C summit and Area A. Most of the exotic material identified in the microdebitage was absent from investigations of larger-sized lithics, demonstrating that the investigation of micro-artifacts is essential to understanding the full spectrum of the archaeological record. The large quantities of local versus non-local material and the continuity of Mound C and Area A indicates an overwhelming reliance on nearby sources of cobble cherts.

The implications of this research will be further explored in the Discussion chapter.

CHAPTER VII – DISCUSSION

The objective of this research was to analyze microdebitage from a selected portion of the Winterville site to evaluate the intensity in which elite members of society were involved in exotic raw material exchange. Previous lithic investigations of Winterville excluded the <1/4" water-screened microdebitage, leaving a void in raw material data. Prior research (Hammond 2012, Price 2012) has demonstrated microdebitage analysis as a useful means to identify raw materials in instances where complete stone tools are absented from the archaeological record. The degree to which elites were involved in exotic exchange could either alter or reinforce the assumption of preceding researchers' assumption that Winterville was ruled under a corporate sociopolitical scheme.

Chiefdom societies were managed via corporate or network sociopolitical scheme. The amount of power upheld by chiefly elite was dependent upon the type of practiced political structure. In a society managed via a network sociopolitical strategy, chiefly elite had control over prestige goods (King 2003). As expressed at Cahokia and its outlying areas, elite controlled the crafting of specialized items for their distribution throughout the southeast (Pauketat 1997). Individuals were deployed with crafted items that were traded for the acquisition of prestige goods which ultimately were possessed by chiefly elite (Pauketat 1997). The accumulation of exotic materials and the excessive display of grandeur both in life and death exemplified by the chiefly elite of network societies, therefore, were very visible in the archaeological record. As yet, characteristics of a network sociopolitical scheme have not been observed in the archaeological record of the Winterville site.

Corporate sociopolitical strategies were inclusive; therefore, the redistribution of wealth (such as exotic stone tools) back into society was commonly practiced (King 2003). Winterville burials exhibited differing internment practices and contained Mississippian shell-tempered pottery types and Cahokian stone tools, a cultural adaptation of Mississippian religious practices (Brain 1989). Indicative of a corporate scheme, elite internments were not excessively decorated often making them less visible archaeologically. A discoidal, such foreign ceramics as Carson Red on Buff, Old Town Red, *var*. *Beaverdam* and others, along with exotic lithics are examples of goods brought in from outlying societies. Though exotic materials such as Mill Creek chert and Kaolin (southern Illinois), Upper Mercer and Brush Creek (Ohio), and Fort Payne, Dover, and Knox cherts (Tennessee) were identified they were seen in few items.

Some 2,172 total microdebitage artifacts were recovered from the locales recognized as Area A and the Mound C summit. Eighty-three percent of the entire assemblage was identified as local chert and 12% as non-local raw material. Some 729 (34%) of those artifacts were recovered from Area A, and 1,143 (66%) from Mound C. More specifically, 285 microdebitage artifacts were recovered from the Mound C structure floors; the assemblage was comprised of 84% local chert. The solitary variance occurring in Structure 1 is recognized as a designated tool-making section of the mound floor. This anomaly had four times as many artifacts than other quads in the same level. Two-thirds of the anomaly microdebitage was identified as heat-treated local chert and 28% as local chert, further verifying that lithic tool production was dependent upon locally acquired resources. Abundant local material recovered from Winterville exhibits the importance of analyzing local production versus exotic acquisition of complete stone

tools. Traces of diverse exotic materials from both Area A and Mound C provide confirmation that exotic material was more prominent in the microdebitage assemblage than in previous lithic investigations. Presence of exotic material demonstrates that occupants had contact with outside Mississippian societies, yet Winterville elites did not deploy surplus to acquire substantial quantities of exotic lithics, as evidenced in the trivial quantities of each material type; an attribute of corporate political strategy.

A sufficient quantity of non-local raw material types was recovered from the microdebitage assemblage, connecting the Winterville chiefdom to outside Mississippian societies. These materials likely arrived in Winterville as complete stone tools, and likely left with people as they departed the site, leaving behind only traces of re-touch for material reference. Materials such as Tallahatta quartzite and Coastal Plain chert originated from portions of Alabama. The presence of Fort Payne, Dover, and Knox cherts illustrate that Winterville occupants possessed marginal quantities of stone tools from locations in Tennessee. The presence of Upper Mercer and Brush Creek chert exemplifies few stone tools made their way to Winterville from Ohio, while Mill Creek chert and Kaolin were acquired from Mississippian societies in southern Illinois. Burlington chert was obtained from quarries in Missouri, and Novaculite was sourced from formations located in Arkansas through Oklahoma, and outcrops in Texas. The presence of exotic re-touch material indicates that occupants had contact with outside Mississippian societies, and trivial quantities of each material type recovered from mound summit and off-mound locations exemplifies that Winterville elite practiced a corporate sociopolitical scheme.

Most lithic artifacts recovered from Winterville are local chert (Guest 2006; Winter 2009; Leist 2008; McClendon 2012). Most flakes recovered from Houses A and B were local chert measuring 1/4" and presented some cortex, indicating early or middle stage reduction (Guest 2006). Large portions of blocky fragments in House B, meaning material is coming in complete and being worked on-site. Nearly the entire 2009 Area A and Feature 113 lithic analysis consisted of local chert (Winter 2009). Conflicting reduction stages were observed between cortex percentage and facet counts: cortex percentage suggests middle and late stage reduction, yet facet counts suggest early stage and later stage soft hammer platforms. Large amounts of cortex indicated the reduction of small pebbles, precluding the assumption that cortical flakes are of late stage reduction. Some 91.5% of the lithic debitage examined by McClendon (2012, 19) was identified as local chert; "28 were identified as Fort Payne chert, 21 as Burlington, nine as Dover, two as Coastal Plain chert, and one each of Mill Creek, Kincaid, Brush Creek, and Camden chert." Over 40% of the debitage from Mound C exhibited lipping, a trait suggested by McClendon to be the result of late stage reduction via soft-hammer percussion. Additionally, microdebitage is the result of retouch, an after-production activity. All stages of reduction are exemplified at Winterville, a trait of active flint-knapping.

The Plaquemine culture of Winterville was a result of the hybridization of the preceding Coles Creek culture with the Mississippian phenomenon (Brain 1989). Though the Winterville elite had noticeable associations with outside Mississippian societies, the network strategy for maintaining political sway was clearly not practiced. Perhaps a network sociopolitical scheme was not employed for the same reason exotic

material exchange was not imperative; it simply was not necessary to manage the Winterville society. With many nearby water sources and the Mississippi River just 5 km west of Winterville, abundant riverine pebbles were available for tool production. Winterville served as a ceremonial center for the surrounding communities, with vacant plazas and elite-occupied mounds. Corporate sociopolitical schemes were inclusive and served the community through events such as feasting, as evidenced at Winterville. Exotic material was not prized or accumulated and was reciprocated into the community. It is possible that support of these corporate activities either was more effective to maintain solidarity or too costly to preclude investment in sustained flow of non-local materials. Mound-top activity is associated with societal elite, and provided a firm occupational timeline where other areas of the site were lacking.

Radiocarbon dates taken from floors of the Mound C structures provide occupation dates of the Winterville (AD 1200-1350) into late Lake George phases (AD 1350-1500). Ceramics associated with the Lake George phases I and II, continuity of microdebitage, and radiocarbon dates provide verification that the Mound C summit was occupied throughout the Lake George phase; previously associated with occupational decline and eventual site abandonment (Brain 1989).

The results of this project resolve inquiries on Winterville raw material exchange, aid in verifying an occupational timeline for Mound C, and provide confirmation for a corporate sociopolitical strategy; yet some deficiencies do occur. Earlier microdebitage contexts of Crippen Point (AD 1000-1200) through the early Winterville phases at the site have not yet been examined. An analysis of earlier microdebitage could aid in

providing an understanding of lithic trade during the Coles Creek naissance of the site and into peak occupation levels of the early Winterville phase.

This project validates previous interpretations that Winterville elite likely retained political power by expending resources in a manner expectable for a corporate sociopolitical strategy. There is little evidence to suggest crafting sumptuary items for elite display. The microdebitage is presumably the result of re-sharpening and re-shaping of complete stone tools acquired through social interaction and cultural adaptation to the Mississippian climate. Winterville and the Plaquemine culture are "better understood as an interaction partner, rather than a client" of Cahokia (Brain 1989, 132). The extensive variety of raw materials indicate wide ranging external contacts, but their representation by small amounts suggests that exotic materials were not an important part of the local lithic technology. Relatively comparable variety and proportions from Mound C and Area A, suggest that if elites obtained exotic materials, they were disbursed into the population; further supporting the inference of a corporate political strategy. The Coles Creek culture was resistant to change, yet allowed for the influence of Mississippian traditions that introduced social and religious changes as well as innovations in ceramic and agricultural technologies to the Yazoo basin (Brain 1989).

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