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Decorated Ceramics At Cypress Citadel (11Js76): Patterning At A Late Woodland Site In Southern Illinois

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DECORATED CERAMICS AT CYPRESS CITADEL (11JS76): PATTERNING AT A LATE WOODLAND SITE IN SOUTHERN ILLINOIS

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ABSTRACT

The Cypress Citadel (11JS76) is a Late Woodland hill top site located in southern Illinois in the southwest portion of Johnson County, near the community of Cypress. Previous research has documented it as a Lewis Phase site within the Late Woodland period. The Lewis phase is set apart from Late Woodland phases by the existence of decorated ceramics. The information presented in this thesis is intended to identify and describe specific decorative attributes of the ceramics at Cypress Citadel and examine specific patterns of incising within the site. Although determining patterning in the decoration is difficult, a focus on attributes allowed for a thorough investigation. After using attribute analysis, it is clear that the ceramics showed small nuances in decoration and style between early and late occupations at the site, primarily in the rim treatment. The results of this document indicate that there is a definitive tendency for two styles of lip treatment, one which predominantly occurs early at the site and another which appears later.

DEDICATION

This work is dedicated to my grandmother, Inez Donnigan, whose role as an educator has given me lifelong inspiration for learning. Also, it is dedicated to my father, Patrick Donnigan who diligently drove me to volunteer at sites as early as sixth grade, toting doughnuts and a pair of work gloves.

ACKNOWLEDGEMENTS

Completion of this thesis requires special thanks to Dr. Jay K. Johnson. His unwavering patience and innumerous hours of editing are so appreciated. Without him, this project could not have been completed. Thanks also to Dr. Brian M. Butler who has always been supportive of my archaeological endeavors and assisted me in obtaining the materials used in this analysis. Thank you to Dr. Matthew Murray for being such a positive addition to my committee and donating time to my research. Thanks to Dr. Janet Ford who agreed to read my thoughts on cordmarking and did so cheerily. Lastly, I'd like to thank my husband Holmes Cook for always extending his loving disposition and stretching in every way imaginable to help me finish this research.

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CHAPTER 1 AN INTRODUCTION TO CYPRESS CITADEL AND THE LEWIS PHASE

Cypress Citadel is located in southern Illinois in the southwest portion of Johnson County, approximately one mile from the community of Cypress. This river region has been the focus of significant amounts of research in the floodplains where burgeoning Mississippian populations developed (Muller 1986:2). Cypress Citadel is a Late Woodland period site that lies in the uplands away from the Lower Ohio River Valley, specifically in the central Cache-Bay Creek region (Butler 2001). Many Late Woodland sites are found near tributaries, most of which are located on ridge tops and terraces, parallel to the adjacent floodplain. During this period, the floodplain was considerably less popular, perhaps due to seasonal flooding.

Cypress Citadel belongs to the Lewis phase, a geographical and temporal construct described on the basis of material from the Kincaid Mounds in the Black Bottoms area of southern Illinois (Butler 2007). The spatial extent of the Lewis phase is the topic of some debate, but it is currently defined within the borders of the Central Mississippi Rivers Region at the southernmost reaches of Illinois, Missouri, Indiana, and western portions of Kentucky. This confluence of major river systems appears to have resulted in the occupation in the uplands during the Woodland Period (Butler and Wagner 2012: 29). This location would have been ideal for access to waterways and also a number of plant and animal resources (Muller 1986: 27). While there are cultures to the north and west which are similar to the Lewis culture, the phase is distinguished primarily on the basis of minor differences in the ceramics.

Research Goals

The primary focus of this research is to examine decorative attributes on pottery at the site. I believe that it is possible to find temporally significant information using an attribute analysis of material culture. This research involves identification and description of the Lewis phase ceramics found at Cypress Citadel. The incised ceramics are important because they can yield information about subtle changes in the pottery technology over time and space which cannot be defined using the current type-variety system of classification. The second research goal will be accomplished through descriptive examination that involves the observation of co-occurring attributes and those attributes which appear to be more prevalent. If co-occurring attributes reveal patterning then it may be possible to identify a specific decorative style at the site. Lastly, the research will explore the possibility for the timed appearance of attributes or trends in the ceramics. Chronological changes might be evident through a statistical evaluation of the individual decorative attributes on each sherd. This temporal examination is one that has not been attempted before through the use of decorated Lewis wares. It is difficult to analyze the rare decoration at Cypress Citadel using the type-variety system. However, this research provides insight using attribute analysis to understand how ceramics at the site changed over time; information that would otherwise be overlooked using the type-variety system.

In order to conduct this project, a collection of data on the decorated sherds is required. The ceramics were borrowed from the State of Illinois, Department of Natural Resources. The analysis focuses on a temporal investigation of test units and their levels. In an attempt to identify a discernible pattern, this analysis will focus on the timed appearance of specific decoration at the site. A detailed analysis of the decorative attributes was therefore essential to this project. A further goal was to discover attributes that co-occur, providing insight to the style and form of these vessels. Since decoration is seldom found on Late Woodland ceramics, this research should

provide valuable information on the co-occurrence of attributes on these vessels and how they relate to the Lewis culture as a whole. This analysis utilizes lip treatment attributes as a method for temporal examination, which has not been done before.

This research is interesting because the present system of classification, the type-variety concept, falls short in a unique situation like Cypress Citadel where decorated ceramics appear during a phase which typically has no decoration. The use of types in ceramic analysis has been addressed in a many publications (Ford 1936, Phillips 1970, Plog 1983, Rouse 1939). Early work by Ford (1936) utilizes historical types in the production of the first chronology of the Lower Mississippi Valley, but it is the analysis of the attributes which makes his work a success. Although he called them "features," Ford uses decorative attributes to track changes in ceramics over time. He addresses these changes as "evolutionary trends" caused by the effects of outside (cultural) influences (Ford 1936: 262-263). Ford's analysis provides a way to develop the regional history through the use of general concepts such as diffusion and migration. The research presented here uses statistical significance of attributes to track temporal changes similarly.

Effective use of attribute analysis can also be found in Rouse's *Prehistory in Haiti*. Rouse's (1939: 18) discussion of types and "modes," or attributes, points out that while types are "a pattern of artifact characteristics which constantly recur on a given kind of artifact," modes are individual parts of an artifact. Individual attributes can be expressions of a potter's behavior when the artifact was created and subject to change at a faster rate over time. If clusters of attributes are considered a specific "type," then minute changes in material culture (which might indicate societal changes) can easily go unnoticed. While the use of the type-variety system is undoubtedly successful in creating chronological sequences, there is room for improvement.

Plog (1983: 131) states “recent studies [referred to above] suggest that further refinements in dating accuracy can be achieved by focusing on individual attributes rather than artifact types.” The historical relevance of analytical anthropology through the use of mode based analysis provides the basis for this research.

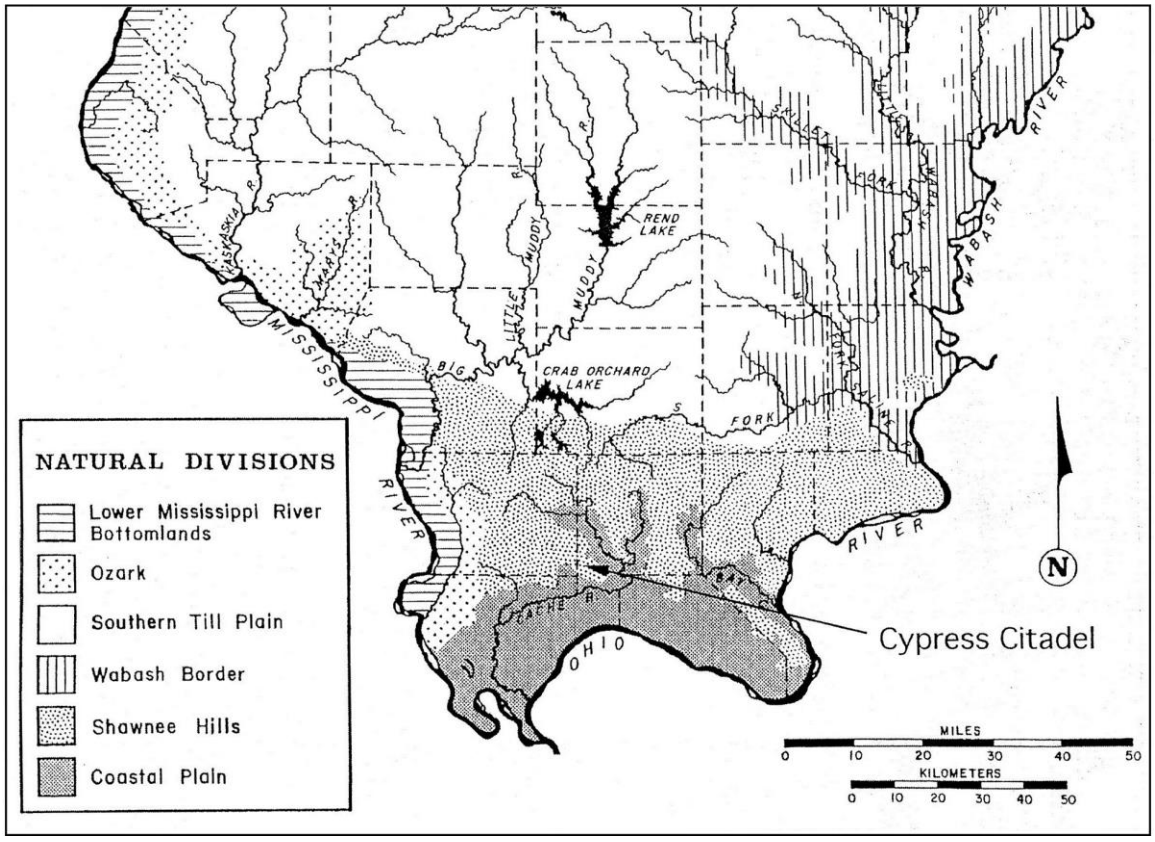

Figure 1-1 Map of southern Illinois adapted from Butler and Wagner 2012.

The Woodland Period

The Woodland period of the Midwest is distinguished from Archaic times by the introduction of ceramic production and in the Lower Ohio Valley it occurs much later than in other areas of the eastern United States. Muller argues "there can be little doubt that ceramic technology was introduced into the region from elsewhere" (1986: 87). However it is important to separate Early, Middle, and Late Woodland time periods, all of which were examined in southern Illinois during the late 1930s and early 1940s by the University of Chicago. The majority of archaeological research was confined to Pope and Massac Counties of southern Illinois, along the Ohio River and Big Muddy River (Cole et al. 1951; Maxwell 1951). The cultural sequences, still maintained today, are defined in post Archaic terms as Baumer, Lewis, and

Douglas in the Lower Ohio River Valley, correlating respectively to Early, Middle and Late Woodland (Klein 1981: 63). The Late Woodland period yielded to the development of the Mississippian after the development of maize agriculture in the floodplain. Temporally speaking, it occurs just before the "mound builders" arrive, between AD 600 and 900 (Butler 2001).

There has been less archaeological research on Woodland sites in this region given the appeal of Mississippian mounds. Most of the Late Woodland is still poorly understood, having been overshadowed by the more aesthetic artifacts of subsequent inhabitants. For this reason the Late Woodland in the lower Ohio Valley of southern Illinois has long been an unexplained period of supposed "cultural decline," although research since 1960 may suggest otherwise (Muller 1986:128). While the monotonous material culture of the Late Woodland appears to have "declined," this viewpoint should be further explored.

Site History

The history of research at Cypress Citadel is a bit murky and there is no documentation of how or when the site was discovered. It appears in 1963 in the Southern Illinois University Carbondale (SIUC) Museum site files and also in the Illinois Archaeological Survey files listed as site 11JS76. Unfortunately, the site received no further examination until 1964 at which point considerable looting had ravaged much of the area. According to the SIUC site files, a Cypress native, Mr. Ralph Canupp, visited the site in late March of 1964 and noted the extensive looting as well as the presence of human burials (Butler and Wagner 2012: 5-6). After communication between various members of the community and the geology staff at SIUC, Canupp eventually contacted a staff archaeologist with the SIUC Museum, Jerome Melbye. The two visited the site in late April of that year, but Melbye could not readily investigate the site. University staff and resources were being channeled into other salvage projects at the time and no one could be spared

for examination of Cypress Citadel, especially without funding. Canupp collected a number of human bones during his visits to the site, many of which were already exposed from looter digging. These were later donated to the SIUC Museum and are now housed at the University facilities for the Center for Archaeological Investigations (Butler and Wagner 2012: 6-7).

Research by Butler and Wagner (2012) indicates the site was ignored by the professional community until 1972 when it was surveyed, almost by accident, by a group headed by Alfonse Stadler. The team was apparently backed by the SIUC Museum, although Stadler was an employee at John A. Logan Community College. Using local informants to locate archaeological sites, the group came to survey the site outside the Cypress community. Stadler was not aware that the site had previously been documented and recorded it again, calling it "Cypress Citadel". Butler notes "on the initial 1972 form Stadler referred to the site as "O'Dell-Main" (after the two owners of the land the site rests on) but that is crossed out and "Cypress" (the original site designation) written in (Bulter and Wagner 2012: 7)." Other site records from the same survey display the name "Cypress Citadel," which has prevailed. In his site report Stadler classified the occupation as a "single component Late Woodland site" associated with the Lewis culture (Klein 1981: 83).

In 1974, archaeologists from New York University examined Cypress Citadel more closely, with specific interest in stone mounds at the site (Butler 2003). Joel Klein, a graduate student of Howard Winters managed a field school that summer and completed the first mapping of the site. However, the map is poorly constructed and not consistent with the topography or shape of the site (Butler 2001). Also, the map does not indicate the locations of NYU excavations. The site then remained untouched for some years (except by looters) until the land was purchased by the state of Illinois in 1998 (Butler 2001).

In 2001 Southern Illinois University began another phase of excavation and was able to plot out some of Klein's test units from metal stakes left in the ground. Magnetic gradient survey carried out by Mike Hargrave from the U.S. Army Corps of Engineers Construction Engineering Research Laboratory located the metallic dipoles from many of the units, but Klein's datum was never located (Butler 2003, Butler and Wagner 2012: 8). For two summers SIUC held field schools at the site under the direction of the Anthropology Department. The first season yielded important geophysical information which guided the placement of test units and served to examine the extensive looting at the site (Butler 2003). The second season focused on investigating specific anomalous areas of the site. For the time being, continued work at the site has been suspended due to lack of funding, although a formal site report has been submitted to the State of Illinois Department of Natural Resources (Butler and Wagner 2012). Almost no artifact evaluation has been carried out aside from washing and general sorting at the time I began this project in 2008. In 2006, I performed a preliminary evaluation and analysis of selected ceramics from the site, which I have expanded on in this project.

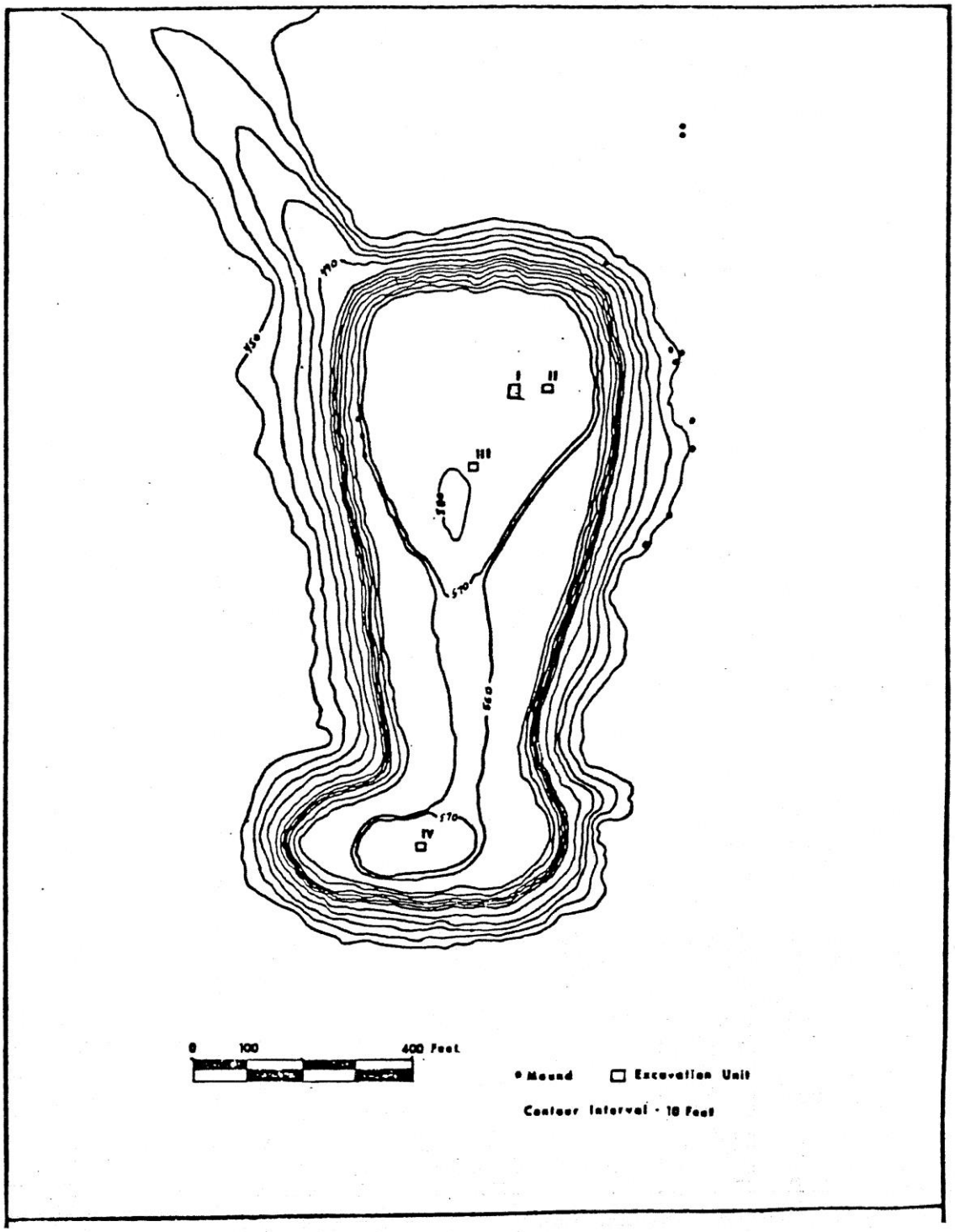

Figure 1-2 1974 site map showing excavations adapted from Klein (1981:84).

Site Description

Like many Woodland complexes in the area, Cypress is a ridge top site known to the surrounding contemporary populations as Big Hill or Glass Hill (Butler and Wagner 2003). The primary habitation area rests atop a sandstone terrace that takes the form of a backwards 'L', or a boot with the toe pointed west (heel toward the east) and the upper portion pointed north (Butler and Wagner 2012: 2). By Klein's (1981: 83) estimates, the bluff on which the site is situated stands 70 m above the surrounding valleys with a vertical face which stands 30 m in some locations (Figure 1-2). The bluff is mostly level at the top with cultural material still evident across the entire surface. Excavations show that the ridge top has never been plowed, likely because of the shallow soil atop the ridge and the existing sandstone beneath the site.

There are basically three portions of the site as defined by Butler and Wagner in their 2012 IDNR site report including a large northern area and a broad east-west area connected by a more narrow ridge feature (near the intersection of the backwards "L"). The northernmost section is the tallest portion of the site at 177 m above sea level and is approximately 200 m long and 130 m wide at its widest expansion. The connecting ridge is estimated to be 75 m long and relatively narrow. Erosion has destroyed much of this area of the site, thus only a constricted ridge crest remains, but research conducted by the SIUC field schools suggests there is a considerable amount of cultural material in this region of the site, though it occurs in lower densities. The east-west limb at the southern end of the site is the short leg of the "L". Butler estimates it is 150 m long and around 65 m wide with a natural sloping surface to the southern edge of the bluff (Butler and Wagner 2012: 2). Site access is limited, except in a few areas where rubble can be climbed to the top of the bluff.

Since there has never been a topographic survey of the site, it is difficult to determine the exact surface area of the ridge top. Data presented by Klein and Stadler suggest nearly 12 acres,

but more recent estimates by Butler and Wagner are more realistically set at 8 acres. The inconsistencies in the bluff edge are certainly unsuitable for occupation in some areas and thus the recent survey suggests a reduced area of habitation. It should again be noted that the Klein site map is badly distorted and only provides a generalized description of the current topography (Figure 1-2).

Chapter Description

The following chapters will provide a detailed account of the previous research conducted at Cypress Citadel. To conceptualize the project at hand, it is of great importance to know the context from which it has been conducted. There has been little work at the site that has provided relevant or recent data. As of 2012, new research has emerged in an attempt to connect Cypress Citadel to neighboring Late Woodland sites with decorated wares.

While Chapter One offers an introduction to Cypress Citadel and its location, Chapter Two assesses the origins of the Lewis Phase through a review of the literature. Lewis cultures are first defined at Kincaid Mounds as a focus, later evolving into a phase. This extended "phase" concept allows for research of site distribution and subsistence in a wide-ranging approach, as is discussed in Chapter Two. A short history of southern Illinois ceramics is presented in a brief survey of the chronology including Middle Woodland, Late Woodland, and Emergent Mississippian Phases. Lewis phase ceramics and those cultures ceramics closely resembling them are found in the surrounding area. For this reason, an in-depth explanation distinguishing these ceramics from others is presented in this chapter.

General laboratory methods are discussed in Chapter Three, including a thorough explanation of the attribute variables used in this analysis. Methodology is imperative to a scientific procedure; therefore I present each variable in descriptive detail. An examination of

temper, primary surface treatment, lip profile, rim stance and decoration are all pertinent to the present study. Measuring these attributes calls for an understanding of similar analyses on Late Woodland wares, on which this project heavily relies.

Ceramic analysis involves collecting a number of quantitative data that are useful, to that end, chapter four is solely a descriptive chapter. This allows the reader to grasp exactly what the collection looks like as a whole, rather than only those variables which are valuable to the results of the decorative study. In this chapter, percentages of the variables are presented in a simplified format, paralleling results published in a complete analysis of Cypress Citadel ceramics by Butler and Wagner (2012).

Chapter Five displays the analytical results through a series of tables. This extends beyond simple descriptive information and delves into the use of statistical reasoning, highlighting attributes that tend to occur together. General patterning is seen by separating the test units by level and this forms the basis for the remainder of the analysis. These results are substantiated through the use of the chi-square statistic.

Chapter Six summarizes my findings in a final discussion. It refers to my initial research goals and methodology in a brief manner. However, it explains my results in detail and offers explanation of how this analysis is beneficial to the archaeological community. Chapter Six gives fresh insight to the decorated ceramics at Cypress Citadel and presents a new way to analyze Late Woodland ceramics in the region.

CHAPTER 2 PREVIOUS RESEARCH

A Review of the Literature

The Lewis phase is a cultural and geographical unit of the Late Woodland time period (AD 600-900) resulting from early work at Kincaid Mounds in southern Illinois (Butler 2001). During the 1933-34 field seasons Thorne Deuel and J.C. Harrington noticed a number of ceramic sherds which did not belong to the Mississippian pattern. Some of these sherds were cordmarked and others were impressed with textile, but neither was identified as belonging to any specific component until several years later (Muller 1986: 131). In 1935 extended excavations revealed even more of this material, which Horace Miner identified as Woodland. It became clear at that time that the cordmarked material clearly occurred earlier than what was then known as the Middle Mississippi period and was renamed. The fabric impressed sherds sprung from Middle Woodland roots and looked very different from the Late Woodland collection. At this point, any concrete distinction between the two ceramic patterns was blurred and all of these sherds were lumped together for the remainder of the excavation (MacNeish 1944: 1-4).

Large amounts of Woodland material were uncovered throughout the field seasons of 1936, 1937, and 1938 at which point Horace Miner began tentatively referring to it as the "Lewis component". He chose the name in honor of the cooperative land owner on whose property a large burial mound was located. The 1938 excavations proved useful in distinguishing the sequence of Woodland material. Later that year, Miner established the chronology at the

Kincaid site which was presented at the third annual Southeastern Archaeological Conference. After the review, it was decided that "Lewis-like cultures should come before Middle Mississippi (Kincaid) cultures and after limestone horizons (like Baumer)" (MacNeish 1944: 2). By 1939 the Lewis terminology was being addressed by archaeologists like William Lessa, who excavated other Woodland sites in Pope County and officially established the Baumer-Lewis-Kincaid sequence that same year (MacNeish 1944: 1-4).

The Lewis terminology was not widely recognized until 1944 when MacNeish published his Master's thesis based on research for the University of Chicago at Kincaid Mounds. He formally proposed that the Lewis materials represented a focus of the Late Woodland pattern on the basis of a survey of Woodland sites in southern Illinois, specifically two large components at the Kincaid site (MacNeish 1944). This work offered a clear definition of the focus and was later adapted into the research at Kincaid. MacNeish's thesis included a detailed description of the Lewis focus as it was identified from the Woodland pattern, adapted from the McKern Taxonomic System of Midwestern archaeology. This system of classification developed out of the need to organize and name the varying complexes being identified at the time. The McKern system was based in the similarity of "traits" of a cultural complex (Muller 1986: 17). It utilized archaeological data by organizing it in a tree like taxonomy, in which the branches represented separate levels based on likeness in traits. According to Muller (1986:23) "the levels were focus (essential identity of the trait list), aspect, phase, pattern, and base". Patterns included Archaic, Woodland, and Mississippian. The McKern system was a method of classification that avoided the use of temporal and spatial information because these elements were not specifically controlled during the time of its use (Muller 1986: 18). Currently, the McKern system has fallen out of widespread use by the archaeological community to be replaced by an emphasis on defining

phases in terms of individual social groups (Farnsworth and Asch 1986: 330). In some cases, cultures are ascribed to varying phases based on minor discrepancies, just as minor changes in vessel decoration define Lewis cultures from others (namely Raymond), although the geographical distance between these groups is relatively close.

The Lewis focus was distinguished within the Woodland pattern by cultural characteristics such as rectangular structures, as opposed to the predominance of round structures found during most Late Woodland archaeology of that time. Also, MacNeish's research indicated that Lewis burials were extended within stone cairns, whereas the general Woodland burial practice involved interring the body in a flexed position (MacNeish 1944: 50-51). While the material culture was similar to the overarching pattern, there were some exceptions to the traits identified by MacNeish. He did not originally take note of any decorated ceramics, which came to light later, as a defining factor of the Lewis focus.

The 1951 Kincaid volume familiarized most archaeologists with the Late Woodland in southern Illinois and the Lewis focus was one of four cultural units described. This research was based on thirty-two sites in both Pope and Massac counties, thirteen of which were considered to be "pure" Lewis components from the Black Bottom (Cole et al. 1951: 166). MacNeish's work specifically addressed the two major components at Kincaid and nearly one third of the Lewis sites surveyed occurred within the Black Bottom. Most of the subsequent information about the Lewis phase does not necessarily come from the Black Bottom. As Brian Butler points out, the focus was defined primarily on information collected from the floodplain, but the majority of new research comes from sites in the interior upland away from the river (Butler 2007). Muller (1986: 16) presents an excerpt from the site's unpublished 1941 progress report by MacNeish.

> "The University of Chicago has worked in this area now for eight years and yet they only know about the materials that come from about 5 square miles. Even if a

> report comes out on only the Kincaid site I feel it would be woefully inadequate without some knowledge of the kind of sites that surround it." (MacNeish 1941)

The Kincaid volume gave only a brief description of the Lewis focus, most of which was directly adapted from MacNeish's thesis. Cole et al. (1951: 166) noted "Lewis camps are small, fairly numerous and usually located on low ridges or bluffs close to old waterways". Evidence supporting this claim can now be found in more recent literature by Klein and also in Muller's account of the more recent archaeology of the Lower Ohio Valley. Klein (1981: 16) states " to date, most of the reported sites attributable to the Lewis cultures have been found within the drainages of the Cache River and Bay Creek and along the Ohio River in Pope and Massac counties" in extreme southern Illinois. The Kincaid volume, in essence, served to promote the previously defined Lewis focus. Once identified and named, other sites in southern Illinois and adjacent regions were recognized to be similar to Lewis material.

The focus of MacNeish's thesis was to understand and define the Lewis focus. He explored the possibility of the focus being expanded to a phase through a survey of materials from Indiana, Illinois, Missouri, and even Tennessee. Woodland cultures were identified in each of these states and compared. Ultimately, it was discovered that sites in southern Indiana, specifically Greene and Franklyn counties were likely related (MacNeish 1944: 52). The southern Illinois Lewis materials were similar to Woodland materials from Indiana in several ways including matching types of projectile points, knives, celts, and hammerstones. The two regions shared similar cordmarked pottery and stone cairns. Extended burials, which differed from the typical flexed burial in the Woodland pattern, occurred in Indiana as well (MacNeish 1944: 53). Though there were similarities, even MacNeish could see that they were only general similarities that could likely occur anywhere. There were no dates or further evidence that related the two

locations. The other areas of interest, including Tennessee and Missouri, proved to have even fewer similarities to the Lewis sites in MacNeish's survey. He stated:

> "all in all, no relationship on the phase level can be determined for Lewis. This is perhaps due to the fact that excavation has not been done extensively in the area surrounding Lewis. Thus, for the time being, the phase of Lewis will have to remain unknown" (MacNeish 1944: 54).

Distinguishing the Lewis Phase

The Lewis focus was not established as a phase until many years later by Jon Muller (1986: 131). However, according to Farnsworth and Asch (1986), the term phase was only a loose description of a pattern in the Midwestern Taxonomic System. Whether or not a phase is a more descriptive term can be an issue of much debate. Farnsworth and Asch recognize that most Illinois archaeologists utilize a "trinomial or binomial space-time subdivision of the prehistoric record" (1986: 329). A phase may be subdivided by cultures, where the phase may extend for some period temporally and, a culture may ascribe to specific region (Winters 1967). Other researchers, namely Griffin (1952), first divide a region geographically and follow up with temporally descriptive "phases" for each unit, giving a stronger temporal implication for the term. Muller's use of the term was as a descriptive element similar to Griffin's. The Lewis phase is a regional distinction in southern Illinois, which belongs to the temporally defined Late Woodland period. The original use of "focus" by MacNeish represented only the cultures at Kincaid. By the 1970's more extensive excavation on Woodland sites had been carried out, proving that similar groups co-existed across much of southern Illinois. For this reason, Lewis came to be known as a phase.

It is clear that "phase" terminology is of much debate, but for the purposes of this analysis it is understood as a general space-time unit. The naming of the Lewis people is of little concern when considering that the knowledge of their existence has been recognized for approximately 70

years. Despite this length of time, little work has been done in the Woodland period in southern Illinois and even now it is poorly understood.

World War II resulted in a temporary halt in research at Kincaid, but a subsequent escalation in archaeological research resulted from the G.I. bill which made education more accessible. More educational funding meant an increase in funds for scholarly archaeological research. The Late Woodland was examined more thoroughly during this time by Winters and Fowler who surveyed a number of sites along the Ohio River in southern Illinois and its tributaries. This research took place mainly in order to determine how the sites in this area related to Cahokia, but the data collected established a firm base for the temporal distinctions of the Late Woodland, and Lewis focus (Muller 1986: 20).

In the early 1970's Muller made a considerable contribution to the archaeology of southern Illinois and likewise revisited the Lewis focus. In his book on the *Archaeology of the Lower Ohio River Valley* he addressed the Woodland concept.

> "As I have suggested elsewhere, the concept of "Woodland," and "Late Woodland" in particular, is still largely based on certain ceramic traits…Late Woodland may be best understood as characterizing those societies which made exterior cordmarked, thin, conoidal vessels with very little decoration" (Muller 1986:128)

Late Woodland ceramics were characterized by their marked lack of aesthetic beauty. This period has been perceived as a time of cultural decline occurring after the artistic Hopewellian and before the more expressive agricultural Mississippians. Some archaeologists went as far as to call the Late Woodland the "good grey cultures" that seem to make little technological advancement (Williams 1963: 297). It should be noted that the Late Woodland cultures, however colorless they may have been, played an essential role in the development of later societal formations. Understanding this period of time could prove critical in understanding the Mississippian period (Muller 1986: 129).

Muller acknowledged that the Lewis cultures were originally addressed as a focus, but also notes some flaws in MacNeish's work. When MacNeish collected his data, in the 1930s, the McKern System was used to classify sites according to independent trait lists; each component of the Kincaid site was seen as separate and unrelated. "Thus Lewis was seen as separate from Baumer and the subsequent Mississippian occupation of the Black Bottom" (Muller 1986: 131). The ceramics show drastic contrasts between the Baumer, Lewis, and Mississippian occupations, so neither MacNeish, nor the rest of the early researchers at Kincaid considered the Lewis people were anything other than immigrants at the site. While Cole et al. were reticent to classify the Lewis as Woodland due to the atypical rectangular house structures, this characteristic only seemed to confirm their assumptions that the Lewis people were completely separate from those cultures that preceded and succeeded them. In actuality, the changes in ceramics and house structures probably stemmed from influences in other areas that developed differently at each site (Muller 1986: 130-131).

Site Distribution

While little is known about the Late Woodland cultures of this area, the Lewis phase is among the best researched and it was hardly a period of cultural decline. Although the earlier Hopewellian influence on mound building was lost during this time, as well as the emphasis on floodplain resources, there is more to consider. Late Woodland site distribution seems to target multiple zones suggesting a greater understanding and use of a wide variety of resources. This knowledge allowed the Woodland cultures to become highly mobile and sustain themselves nearly anywhere including rock shelters, ridge tops, and bottomlands. Muller, et al. (1981) note Lewis sites are typically "less than 5000 meters squared in area, are located on upland ridges on north slopes and are near intermittent water sources." Likewise, Cole et al. (1951: 166) describe Lewis

camps in the Kincaid volume as "small, fairly numerous and usually located on low ridges or bluffs close to old waterways." There are some sites that are larger in size and show more intensive occupations, which Butler and Wagner argue may even be year round settlements (2000: 696).

Structures

As far as internal organization of Late Woodland settlements, very little work has been done. Finding well preserved structures in this area proves to be a task not yet mastered. Few structures have been excavated but those that have offer clues into house construction. The Middle Woodland structure, in this case, appears to have continued into the early and middle Late Woodland. House basins are ovoid to rectangular in shape, with poorly defined basins (Bentz 1988, Butler and Wagner 2000, Muller 1986, Wittry et al. 1994). They are constructed by individual posts being driven into holes dug, sometimes at angles up to 30 degrees toward the center of the structure (Muller 1986: 133). In most cases, only a portion of the post hole structure can be identified, but conclusive evidence points to the consistent usage of small diameter posts (Butler and Wagner 2000: 695). These wooden frames were likened to the ethnographically identified "wigwam" structures of the Great Lakes by Ritzenthaler (1978: 750). According to this interpretation, the structures were dome shaped and probably covered in hides or mats of reed, although no agreement from the archaeological record has been offered as to these external alterations. This Late Woodland structure is consistent throughout Crab Orchard, Baumer, Raymond, and Lewis phases. Changes to the basic structural form are not seen until the terminal Late Woodland when keyhole structures, characteristic of the American Bottom, occur in the archaeological record (Bentz 1988, Butler and Wagner 2000).

The Stone Forts

Muller pointed out that "there is evidence from upland areas in southern Illinois that Late Woodland population totals may actually have been larger than those of the Middle Woodland predecessors, even allowing for more dispersion" (1986: 128). Also, the decline in mound building in the Midwest after the Middle Woodland seems to imply a reduction in cooperative efforts among individuals of the time. However, in the uplands of southern Illinois the construction of important Late Woodland sites such as the so-called "stone forts" required great communal effort.

There are a number of stone forts identified across the lower portions of Illinois which are usually constructed atop a bluff, in elevations greater than 500 feet, with limited accessibility. Remaining entrances to the top are closed off by stone walls ranging in height and width. The sites vary in size and some are affiliated with stone mounds as well as burial cairns. It should be noted that during this period in the Shawnee Hills, the first evidence of mound building is observed, which raises suspicion as to whether or not these cultures were actually in decline (Muller 1986: 128). More than likely they had adapted to a new way of life, which came with a number of changes in material culture including the ceramics. Cypress Citadel is somewhat similar to the stone forts because it is situated atop a bluff, but it lacks the stone wall.

A number of these stone forts have been excavated, including Hog Bluff (Brieschke and Rackerby 1973), Pounds Hollow and Stonefort (McCorvie 1991), and Millstone Bluff (Cobb and Butler 1998). Cypress Citadel was excavated in 1981 by Klein. The majority of these excavations have revealed very little in the way of material culture, with most sites yielding few sherds. However, Hog Bluff and Cypress Citadel appear to have been densely occupied, with features containing a variety of Lewis decorated wares not yet defined. Speculation by Brieschke and Rackerby (1973: 25) suggests that the sites were used as defensive territories, opposing the

incoming Mississippian cultures in the river valleys, an idea popularized in the 1980s. Muller proposes the use of such sites as seasonal neutral trading grounds in the periphery of major Late Woodland settlements, although this theory is not recognized widely (1986: 153).

Society and Subsistence

It should also be taken into account that the Late Woodland cultures are the same people who adapted low level horticulture and eventually constructed the more efficient maize based agriculture that is characteristic of the Mississippian period. "In short, instead of being uninteresting, Late Woodland is especially interesting as an adaptation and as the critical period of growth and development of the Mississippian" (Muller 1986: 129). Without this period of supposed "decline" these adaptations may not have occurred.

Woodland ceramics are traditionally described as boring and redundant in terms of aesthetics, but Braun (1982) offered a different explanation for the appearance of these predominantly monotonous sherds. He proposed that the change may be reflective of an increase in social cooperative networks. A modification in ceramic technology might have taken place when the resource base expanded to include upland nuts and starchy seeds (Braun 1982). This technology, then quickly spread to facilitate the more mobile lifestyle of the Woodland people and the new, thin, utilitarian pots may have been more equipped for optimizing the change in diet. Pollack and Henderson (2000: 613) note that the sweeping similarities in material cultures throughout the Ohio River Woodland cultures may have represented an "interregional interaction," consistent with Braun's claims. While the exchange of exotic goods over a long distance ceased after the Middle Woodland, Late Woodland cultures were likely sustained across a large area through small scale relationships. Muller (1986: 128-129) also agrees with this hypothesis, but stresses that the extent of such social networks was probably only neighbor to

neighbor. These strictly local relationships expanded on a one to one basis causing widespread cultural stability across a large region.

If such a system did develop in order to supplement subsistence with the exchange of goods and resources, it should be acknowledged that this took place without large central place sites. Also, archaeologically speaking, there is little to no evidence for an elite group that may have mediated such interactions. Because the amount of archaeological material left by these people is so sparse, many do regard this time as considerably less impressive than those cultures that succeeded it. In contrast to those views, the Late Woodland can be seen as a time of cultural stability and maintenance of neighborly relationships. Instead of classifying it in terms of its lackluster material goods, it can be identified as a unique culture in its own.

Southern Illinois Ceramics

The cultural sequences, Early, Middle, and Late, are defined in post Archaic terms as Baumer, Lewis, and Douglas in the Lower Ohio River Valley, whereas the Big Muddy area sequence is Crab Orchard, Raymond, Dillinger, which eventually lead into Mississippian (Klein 1981: 63). In a recent discussion of Crab Orchard and other Woodland cultures, Butler and Jefferies note that any separating factors between Early and Middle Woodland cultures in extreme southern Illinois appear to be arbitrary (1986: 523). The dates are somewhat inconclusive as well. For the purpose of discussion, the following Middle Woodland review will focus on the Baumer and Crab Orchard traditions. Discussion of each of these cultural units is pertinent for a full understanding of the Late Woodland.

Middle Woodland pottery has been subjected to a variety of typologies, given the substantial variability that occurs within it. In 1951, the same year as the first publications from Kincaid offered clarification regarding the chronological sequences of the whole of southern

Illinois, Maxwell (1951) defined his archaeological assemblages in the Big Muddy and Crab Orchard Creek drainages. He introduced, for the first time, the terminology of Crab Orchard to describe the particular ceramics he recovered. Traditional Crab Orchard pottery is generally grit tempered and very thick, compared to later ceramic varieties and characterizes the earliest known ceramic producing cultures in southern Illinois. There is also a shift to the use of grog temper. That shift may be attributed to location, inability to reach large amounts of crushed stone, mastery of grog temper later in the cultural sequence, or stylistic variants. Simultaneously, the Kincaid findings were published by Cole. These ceramics bore striking similarities to that of the Crab Orchard tradition. The Kincaid collections, termed Baumer for the location of the type site near the farm of Henry Baumer about five miles from Kincaid, differed only slightly from Crab Orchard ceramics. The two publications therefore resulted in the introduction of two terminologies for the same pottery.

Crab Orchard/Baumer generally describes ceramic materials dating to the Early Woodland and non-Hopewellian Middle Woodland. Differentiation does occur in the technological elements of the ceramics. Although the two terminologies arose at the same time, the usage of Crab Orchard and Baumer is not always interchangeable. Cole, et al. (1951: 189) described the Baumer ceramic focus as dense, with varying amounts of temper, specifically limestone and grog. Crab Orchard pottery, on the other hand, is generally grit tempered. Vessel forms have little variance between the two traditions and are either jars or less common bowls. The ceramics are usually characterized by extremely thick, crude, vessel walls. Butler and Jefferies (1986: 524) describe the general vessel form as deep, thick walled, and conical with a basal diameter of 10 to 15 cm. The jars tend to take on a "flower pot" appearance, though they are somewhat taller vessels showing only slight shouldering. While decoration occasionally occurs, the vessels are

typically fabric or cord wrapped dowel impressed, or plain.

The terminology becomes a cultural locator for southern Illinois archaeology, with the Crab Orchard tradition generally occurring north of the Shawnee Hills near the Big Muddy or interior creek drainages and the Baumer variety generally occurring south of the Shawnee Hills in the most southern portions of the state, near the Ohio River Valley and its tributaries (Butler and Jefferies 1986: 525-526). Though other terminology has since been introduced, the use of Crab Orchard/ Baumer remains most frequent when describing the first ceramic producing cultures of southern Illinois.

Following the Middle Woodland ceramic traditions in extreme southern Illinois are those belonging to the early Late Woodland period, which are not as well known, or defined in southern Illinois. In the American Bottom, a research locality on east bank of the Mississippi River, opposite St. Louis, clearly defined early Late Woodland sequences are exemplified by Rosewood, Mund and Patrick phases (McElrath and Fortier 2000: 100). The Late Woodland of this region has been extensively studied and has proved to be a distinct cultural area. However, in extreme southern Illinois, early Late Woodland periods are represented by only a few individual components, according to Butler and Wagner (2000: 687). These collections are either too small, or too mixed with ceramics from later time periods to accurately gauge the chronological sequence of the region. The later Late Woodland has been defined in terms of Raymond and Lewis phases.

Defining Regional Late Woodland

The southern Illinois Late Woodland area, as defined by Butler and Wagner (2000: 685), lies directly south and east of the American Bottom. Its northernmost reaches are divided from the former by the Kaskaskia and Little Wabash River valleys and expand all the way to the tip of southern Illinois. This includes the Cache River-Bay Creek drainage (where Cypress Citadel is

located), which extends almost entirely across southern Illinois. The area geologically identified as an abandoned paleochannel of the Ohio River, characterized by portions of standing swampy waters similar to the floodplain (Butler and Wagner 2000: 686). The Big Muddy Valley, to the west of southern Illinois and portions of the Shawnee Hills and Mississippi River drainages are characterized by the Raymond phase. South of the Shawnee Hills and in the Ohio River drainages the area is known to belong to the Lewis phase (see Figure 1-1). In either region, an early Late Woodland component has not been described.

In contrast, numerous well defined later Late Woodland components are found in southernmost Illinois including Raymond and Lewis phase with respective terminal Late Woodland, Emergent Mississippian phases of Dillinger and Douglas. Raymond phase sites are representative of the later portion of the Late Woodland period in the northern portions of the research area. Butler and Wagner find that, in terms of ceramic technology Raymond sites are contemporaneous and coterminous with the Patrick phase of the American Bottom (2000: 688). Generally speaking, Raymond and Lewis phase ceramics are distinguished on the basis of temper preference, as they look very similar in surface treatment and vessel form. Hargrave (1982) notes that some Raymond and Lewis ceramics are difficult to separate in areas such as the Saline Valley. The only observable differences are the nearly exclusive use of grog, or crushed sherds or fired clay, in Lewis ceramics. Other, more minute differences can be seen in to the notching of the rim.

Raymond Ceramics

The Raymond phase, the northern variety of the Late Woodland, was described by Moreau S. Maxwell (1952: 186) in quite literal terms, noting they show "an amazing and boring homogeneity." He defined the phase after analysis of the materials from a site along the Big Muddy River in Jackson County Illinois. "The Raymond culture is of special concern to the

present study because, of all the Woodland cultures of southern Illinois, none shows greater similarity to Lewis than Raymond" (Klein 1981: 70). For the most part, both Raymond and Lewis ceramics are indicated by their thin (5-7 mm), cord marked vessel walls with either interior or exterior rim notching (Herndon and Butler 2000). Vessel forms are limited to jars and bowls, much like that of the Middle Woodland, with a strong preference for jars represented in the archaeological record. The most common jars are incurved, referred to as "coconut jars", but they may also occur in a recurved form with a slight neck (Butler and Wagner 2000).

Decoration in the Raymond phase, aside from the ubiquitous cordmarking, is restricted to the rim of the vessel. Interior notching is common, sometimes executed with a cord wrapped dowel, but also by thin slashes possibly through the use of a fingernail or other sharp object. As noted by Maxwell (1951) in illustrations, this notching occasionally creates a crenellated lip from an exterior view. Any further decoration, such as incising or trailing, appliqués, or nodes occur very rarely in Raymond assemblages. The one defining difference between Raymond and Lewis ceramics is the preference for grit temper among the Raymond cultures.

Lewis Ceramics

MacNeish's original definition of the Lewis focus was based in the analysis of 32 sites in Pope and Massac Counties with the majority of these falling within the "Black Bottom" region. The majority of MacNeish's (1944) definitions were based on vessels, of which he identified eight different types. As with Raymond ceramics, the incurved jar with a rounded or subconoidal base, slight shoulder and either vertical or outcurved rim is the common form with Lewis. Bowls are also present in the record, but are far outnumbered by jars. The general conclusion at Kincaid was that the Lewis focus was poorly represented.

The focus was not re-examined until 1986 by Jon Muller (1986: 127: 153) who

characterized it as a phase falling into the later portion of the Late Woodland. However, since the ending of the Kincaid project very few excavations have uncovered significant Late Woodland components, with the exception of Klein's work at the Cypress Citadel in Johnson County. The majority of what has been examined did not come from the Black Bottom but the uplands. Usually, Lewis wares are thin walled cord marked and most often grog tempered (Maxwell 1951). Although regular inclusions of micaceous sand are prevalent in the wares from Kincaid, this is probably due to natural inclusions in the clay and is not considered to be a trait that was selected for. The Lewis phase occurs at the southernmost portions of Illinois and is bounded on the north and west by the Raymond phase.

Because most Lewis phase sites are defined on the basis of their ceramics, it is important to discuss what characterizes "Lewis" ceramics as different from Raymond. Some important criteria are necessary in distinguishing the two. Although these are subtle distinctions, they are consistent between the two regions. The first of these distinctions is temper preference. Raymond vessels are almost always composed of entirely grit, or crushed rock temper. While grit-grog variations do occur at sites such as Carrier Mills near the Saline River, they are few given the Raymond assemblages to date (Hargrave 1982). Butler and Wagner (2000: 688) note that this is representative of northern, more Midwestern wares identified in the American Bottom. Lewis phase ceramics are heavily represented by grog or fired clay temper, which are said to represent the northernmost extensions of Baytown-like ceramics.

The second distinction between the two phases is the execution of rim notching. This is possibly the easiest way to distinguish the ceramics without taking a closer look at the temper. While Lewis vessels are usually notched at the rim from the exterior and occasionally from the top, Raymond wares show interior notching (Butler and Wagner 2000). MacNeish termed Lewis

ceramics to be "side notched," a classifier that holds true even today (Cole et al. 1951: 165-183). This may seem like a small difference to note, but it is absolutely relevant when discussing Late Woodland ceramics that often display few stylistic variances. Butler notes that there are rare examples of folded rims and lip lugs, but stresses that these probably arose very late in the sequence (Butler 2007). It should also be noted that rim notching is more prevalent in the latter half of the Late Woodland, occurring on up to forty percent in any given collection according to Butler and Wagner (2000: 690).

Finally, there is an identifying style of decoration that is rare, but restricted to Lewis phase ceramics. Decorative attributes limited to the rim of the vessel includes not only exterior stick impressions, but crenellation (due to horizontal application of dowel impressions), vertical punctation, and exterior slash notching (MacNeish 1944: 32). What is more, rare examples of Lewis decorated ceramics show incising or trailing over the neck as well. MacNeish defined Lewis Trailed-Over Cordmarked as a type variation at Kincaid bearing parallel and sometimes curvilinear whorls near the rim. This was executed with a stick or sharp tool.

In recent years, Lewis Trailed-Over Cordmarked has been used synonymously with Lewis incised, but MacNeish distinguished the two as unique. The latter is distinguished on the basis of deep and broadly incised lines that set these types apart. Typically, Lewis Incised bear patterns similar to the Lewis Trailed-Over Cordmarked. MacNeish acknowledged the similarities in rectilinear and curvilinear line occurrences. Additionally, the Lewis Incised ceramics from Kincaid are executed over a plain or smoothed vessel surface treatment, while in every other occurrence of such decoration, the pattern was applied over cordmarking. This can be explained through Cole et al.'s (1951: 179) misidentification of early Mississippian ceramics which may have been included in this category. These patterns are similar to what most identify as Lewis

Incised, but include line filled triangles or garlands otherwise sloppily executed (Butler and Wagner 2000: 690).

Both rectilinear and whorl designs are, for the time being, classified simply as Lewis Incised, but could clearly be further differentiated. In addition to the obvious design differences, there may be preference in incising width, significance in the number of lines used and even spatial distinctions that should be investigated for delineation of such patterns. There is a much needed analysis of the typologies of the decorated Lewis wares, as they have not been well defined in the past (i.e. Early Mississippian identified by Cole et al.). In either case, the decorated nature of Lewis phase ceramics creates a clear separation in the Late Woodland ceramic assemblages. Similar trailed or incised ceramics are recorded in the Raymond phase in only a few instances, in which the decoration is poorly executed. Butler (2007) notes the occasional Raymond imitation of this incising, but it is largely a characteristic used to diagnose Lewis ceramics.

Dillinger and Douglas Phases

The later portion of the Late Woodland is dominated by the Dillinger and Douglas phases, two foci originally defined by Maxwell. Terminal Late Woodland wares in the Mississippi drainage region are typically of Raymond descent, termed Dillinger. The Douglas phase replaces the existing Lewis phase. There is some controversy as to the terminology of terminal Late Woodland or Emergent Mississippian in this study area, but Butler and Wagner (2000: 688) maintain that the Dillinger phase in the "interior valleys do not appear so progressive." They are referring to the adoption of maize agriculture by early Mississippian societies, marked by a movement groups from the interior hinterlands into the floodplains. The ceramics, likewise, become more elaborately decorated, even bearing appliqué nodes applied to the exterior vessel lip (Butler and Wagner 2000: 690). Some speculate this is due to the changing social arrangement

where elite goods are more appreciated than utilitarian style Raymond and Lewis.

Where these later phases replace Raymond and Lewis, there are changes in the vessel forms. The most common "coconut jar" form utilized by Raymond and Lewis people, was typically thin walled, shouldered, and elongated with a rounded base. This form dominated until the terminal periods when open bowl forms began to emerge in greater quantities. Current studies show that over the entirety of the Late Woodland period, there is some evidence for the increase of bowls over time (Kelly, et al. 1984: 106). Hargrave (1992) even argues for the trends in bowl production geographically, increasing from north to south in the Midwest. Additionally, he notes that decorative elements in the ceramics exponentially increase with high frequencies in lugs and peaked and folded rims.

Recent Research

Before the completion of my project, a formal site report was published for the State of Illinois, Department of Natural Resources by Brian Butler and Mark Wagner (2012). A portion of this report includes the ceramic analysis of the entire assemblage at Cypress Citadel. While thorough, this report looks primarily at the descriptive qualities of the collection. In total, they examined 37,184 sherds from two field seasons at the site. Ultimately, their approach was to examine the site in its entirety in order to provide the state with valuable information on their previous excavations. It is obvious to anyone looking at the Cypress Citadel collection that the decorated ceramics are unusual, so their report included descriptions of the patterns, much like this project. However, my goal is to go beyond a typical ceramic analysis in an attempt to find patterns in the incised wares. This analysis is an attribute-based analysis which can be tied to a change in stylistic preference over time. Butler and Wagner deliver general report of the ceramics and the Cypress Citadel as a whole, which has long since needed attention.

CHAPTER 3 METHODS

The present analysis involves 952 decorated sherds including 408 rims, studied in the summer of 2009. In order to achieve appropriate vessel counts, all rims were examined separately. All sherds were recovered from a controlled excavation during the 2002 field season conducted by the Center for Archaeological Investigations, affiliated with Southern Illinois University Carbondale's field school. The decision to use ceramics from only one of the two field seasons did not come without reasoning. Although there was a field school in 2001, due to time constraints, sherds used in this analysis were collected only from the 2002 season. The first excavation of the site in 1974 was, in fact controlled, but the map created was less than adequate. Researchers from Carbondale examined the site, during their first field season in 2001 with hopes of discovering the location of the original test units but had little success (Butler 2007). As a result, the location and context of the artifacts collected is not clear. The research objective for that year was, primarily, to collect geophysical data. Due to the unusual nature of the site, information regarding feature location would prove helpful in guiding future excavation.

My initial impression of the excavations that took place in 2001 is that there are smaller numbers of decorated ceramics. However, more recent research has shown there are nearly equal amounts. I examined a number of the ceramics that were collected that year and they were stylistically similar with the collection from 2002, both in form and decoration. The ceramic artifacts recovered from both of the field seasons were similar in character and the site has not been revisited since 2002.

The majority of rims analyzed were recovered from a large midden deposit at the base of a ridge which defines the backwards L shape sandstone occupation area at the site. All rims were counted as separate vessels, with the single exception of two segments refitted from the same vessel. In this way the maximum number of vessels has been identified. Of the 408 rims examined, these represented 407 vessels. One pinch pot refit was not identified until the analysis was near complete, otherwise refitted rims were treated as one sherd.

General Laboratory Methods

Artifacts reviewed in this analysis were washed by hand with water and toothbrush and left to dry in racks. Once dry, the ceramics were separated from other general categories of artifacts, namely historical, botanical, faunal and lithics. Ceramic artifacts were then bagged separately and labeled with appropriate unit and level information. Burnt clay and daub were separated, counted, and weighed, but were not a part of this analysis.

The Cypress Citadel ceramics were originally sorted by size. Any sherds which did not pass through a 0.5 inch screen were collected and rebagged for further analysis. Those ceramics that measures smaller than 0.5 inch were counted, weighed, and bagged, but not subject to further analysis. I did much of this work during my preliminary analysis of the decorated wares in 2006. According to the 2012 site report, 37,184 sherds measured larger than 0.5 inch from both field seasons (Butler and Wagner 2012: 134). All rims from 2002 were extracted, including those without decoration. Body sherds with decoration other than cordmarking were also separated for the purposes of a more formal analysis.

Quantitative Variables for Ceramic Analysis

The collection of material analyzed for this study was predominantly decorated, though even undecorated rims were included because of their diagnostic potential. The analytical

procedures for this sample involved a total of 952 sherds greater than one half inch in size. Ceramic typologies of the Woodland time period are separated into three distinctive categories in the Lower Ohio River Valley in southern Illinois, as previously discussed. These are simplified into Baumer (Middle Woodland), Lewis (Late Woodland), and Dillinger (Emergent Mississippian) phases which differ according to temper, surface treatment, vessel form, and decorative techniques (Rudolph 1981: 224).

Temper

All temper observations were made macroscopically with a 10X loupe. Temper classification was determined by examining edges of sherds and occasionally the surface. If temper could not be observed in this way, due to dirt or marring from an overzealous scrubber, a small fresh break was made. The majority of ceramics displayed a very uniform temper.

Lewis ceramics are specified by the inclusion of relatively small grog or grit temper and may include combinations of the two (Cole et al. 1951: 178). Grog is the term referring to previously fired and crushed inclusions of clay in the paste. MacNeish (1944:31) referred to Lewis phase ceramic as "fine and dense, with a tendency toward a chalky feeling." While this assertion may be true at most Lewis sites, the ceramics from Cypress Citadel have a paste which is slightly different in nature. It is important to understand the significance of temper inclusions as intentional, or as part of the naturally occurring clay body. In the case of the Cypress Citadel, micacious sand is found in some of the ceramics, which is probably an unintentional inclusion of "grit" due to its natural inclusion in the clay. According to Butler and Wagner (2012: 135) "the sandy clay appears to be of local origin, but its source location is not known." In most cases grit temper is referred to as crushed rock, but in the instance of 11JS76 I have considered sand as a form of grit temper. It should be restated that this was not a trait that was specifically selected.

No attempts were made to distinguish percentages of temper inclusions, as most of the collection was primarily grog tempered.

Lip Form

All rims were ascribed a lip form, rim stance (when available), and vessel form. Many of the rims were not large enough to determine stance or vessel form, in which case they were deemed indeterminate. Lip form was derived from classes adapted from Steven Ozuk's (1987) comprehensive analysis on Lewis ceramics. I used six distinct rim categories plus one rare additional lip form which I identified in this analysis. The categories include Squared, Slanted to the Interior, Slanted to the Exterior, Rounded, Extruded, and Thickened. In four cases a thinned rim was observed. It is characterized by the gradual thinning of the vessel wall, which terminates with a rounded rim, much thinner than the original wall thickness. To this end, the analysis required an addition of a Thinned/Rounded category. Each category was simplified first with letters A-G and then later numbers 1-7. In the occasion of breakage or erosion, unidentified lip forms were listed as well. The best way to observe this variable was to examine the cross section of each rim, holding them near the line of sight. This technique was double checked by observing both ends of the sherd, as well as the length of the rim so as to ensure consistency in the lip form throughout the remaining portion of the rim.

Vessel Form

The majority of Late Woodland sites in southern Illinois show a propensity toward three vessel categories, jars, bowls, and pinch pots (Ozuk 1983: 231). Jars, also referred to as coconut jars, are most commonly incurved, as visible in Plate XXXVIII found in Maxwell's (1951: 245) dissertation. Other vessel forms identified by Maxwell include the "test tube," "olla," and "Lewis shouldered" jars (see Figure 3-1). These vessels are typically thin walled with a cordmarked

exterior surface.

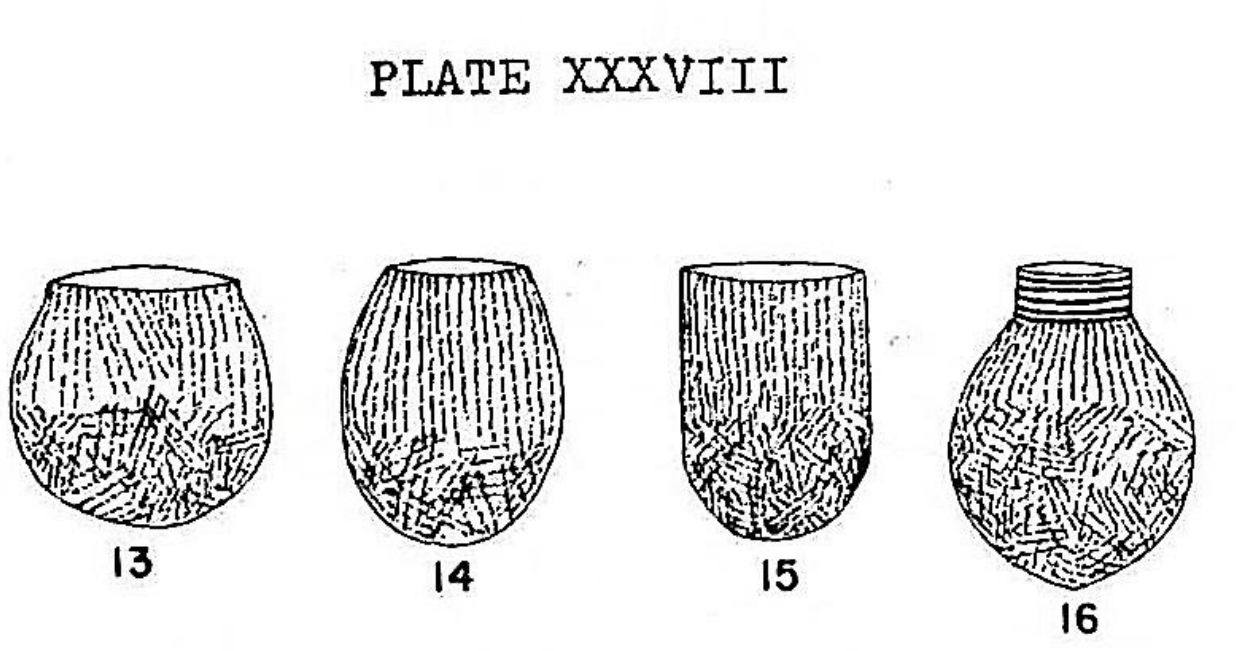

Figure 3-1 Selected illustrations adapted from Maxwell 1951: 245 Plate 38; 13-Coconut jar, 14-Olla, 15-Test Tube, 16-Lewis Shouldered.

Subclasses within these categories are represented in this analysis by seven types as researched by Ozuk (1987) on Late Woodland pottery in the American Bottom. All of the sherds were examined in terms of the lip, neck, shoulder and body. The lip is defined as the upper most portion of the vessel where the orifice would be located. This includes interior and exterior portions of the orifice and any sherd containing a portion of the lip was termed a rim. The neck occurs between the lip and the shoulder, when available. This is an area which may appear as a point of curvature in reference to the shoulder. Because many Late Woodland vessels do not display a neck, the shoulder must be observed. Ozuk (1983: 231) provides a working definition: "the area determined by the point where a line perpendicular to the orifice plane was tangent to the

vessel wall." In most cases, this is only observable on larger rims. The body of the vessel occurs between the shoulder and the base. Due to the small size of the majority of the rims in this analysis, the lip and neck observations proved to be the most useful when available.

Collection of rim stance data was accomplished using eight rim types identified by Ozuk (1987: 252). Each rim was placed on a horizontal platform, with vessel orifice down and rotated until the maximum surface area was covered. This was determined by the amount of light which peeked through the space between the lip and the horizontal plane. In ideal cases, no light was seen. Once this step was achieved, the general shape of the rim was noted and then identified as one of Ozuk's classifications. When collections contain sherds that are primarily fragmentary, vessel morphology can be determined by discovering rim stance. In most cases, the stance can be tied to a vessel type. While orifice diameter would have been an important part of analysis, there were no sherds large enough in this assemblage to collect these data. An unidentified stance, or rim which did not have enough of the lip or upper vessel wall present to determine shape were deemed as such. Unfortunately this happened relatively often because of the fragmentary nature of the sample.

Those rims which were large enough were categorized according to the relationship between the orifice opening and the vessel wall. Numbers one through ten were used to describe Inslanting/Incurved (1), Vertical/Incurved (2), Inslanting (3), Inslanting/Outcurved (4), Vertical/Outcurved (5), Outslanting/Outcurved (6), Vertical/Incurved(7) with the apex of the curve to the inside of the vessel occurring very near the rim rather than further down on the body, Outslanting/Incurved (8), Everted (9), and Vertical (10). Both Vertical/Incurved (7) and Vertical (10) classifications were added to accommodate those stances prevalent in the analysis. Ozuk's (1987: 251) Vertical/Incurved rims occur in two different forms in this assemblage, with one

having an apex further down on the body wall and the other with an apex just below the lip. The vertical category was added because of the nature of Late Woodland vessel morphology. Coconut jars, as mentioned, can sometimes have a nearly vertical vessel orifice. When rims are small, they appear completely vertical, but it is clear that Late Woodland vessels are not cylindrical. If the rims continued further down the body of the vessel, a different stance may be determined. Butler and Wagner (2012) note that while vertical rims in the Cypress Citadel assemblage could represent jar or bowl forms, they are likely bowls.

Surface Treatment

Perhaps the most easily recognized qualitative attributes involved surface treatment. For the purpose of this analysis, the following general surface treatments were observed and coded among all of the ceramics, cordmarked (CM), plain (P), and eroded (Ero). There were a few rims which consisted showed notching and were broken just below the lip, in which case no surface treatment could be correctly identified. These were marked as unidentified (Uni). Cordmarking is the most common surface treatment in Late Woodland ceramics. It involves wrapping a twisted cord around a paddle which is then used to create indentions on a vessel. Surface treatment is almost always cordmarked at various angles on the body of the vessel, whereas close to the rim the cordmarking is normally vertical. In a few instances, sherds were left plain and identifiable by a smooth exterior which was either never treated, or smoothed over cordmarking. Eroded surfaces were those too damaged to determine surface treatment. For the purposes of this analysis, decorative attributes were identified separate from surface treatment, as they were often applied on top of existing surface treatment.

Decorative Attributes

The core of this analysis rests on the identification of decorative attributes. The most

obvious of these attributes can be noted in lip/rim modification, which occurs in the form of notching applied to the exterior or the interior of the orifice. There are frequent instances, however, of notching applied superiorly, or directly horizontal to the rim. Notching as a form of decoration is not uncommon; MacNeish (1944) cited it as one of the attributes which defines Lewis cultures. Orientation of such notching was noted during the process of this analysis, as well as the co-occurrence of any other decoration below the rim. Butler and Wagner (2012) describe three general variations of notching, including: stick notching, slashing-executed by a sharp edged implement and dowel impressions. The present analysis notes dowelling, although it was difficult to define as separate from stick notching unless the dowel was wrapped by cord. An analysis done by Butler and Wagner recorded the directional initiation of the notching, but the current study did not include such data. For the most part, notching was classified as stick notching, applied from the exterior.

Decorative modification below the rim is not usually found in southern Illinois Late Woodland ceramics. Fortier and Jackson (2000:124) note that even in the Late Woodland cultures north of the Lewis only rarely display punctates or cord impressed designs. Strangely enough, incising is very common at Cypress Citadel. It is displayed in a variety of ways, with the most common form occurring just below the lip in multiple horizontal lines. Other forms of incising that were found in this assemblage included curvilinear lines, vertical lines, and oblique lines, some of which occurred simultaneously. The incising is typically well defined, even on badly eroded sherds and is typically restricted to the neck of the vessel. This analysis involves the measurement of the number of incised lines and their orientation. Other data recorded in the analysis is the width of incised lines, obtained by calculating an average on each sherd to two tenths of a millimeter, arrived at by measuring the thickest and the thinnest portion of the incising.

The lines were generally uniform in terms of width on each sherd.

In addition to incising, this sample from Cypress Citadel includes some modes of decoration which are extremely rare. Punctations, applied with the end of a small reed or bone are found on a small number of sherds, some of which are zoned by oblique incised lines. There were also a few appliques in the collection usually occurring as small lugs applied to the rim, as well as one more sizeable lug. These were mostly outliers in a sea of incised sherds, but still suggest a very different nature to this Lewis site.

Table 3-1 Technological Attributes Paradigm

Vessel	Paste	Tempered	Sand/Grog
			Grog
			Micaceous Sand/Grog
		Untempered	
	Surface Treatment	Cord Marking	
		Plain	
		Unidentified	

Table 3-2 Vessel Form Attributes Paradigm

Vessel	Form Components	Lip	Squared
			Interiorly Slanted
			Exteriorly Slanted
			Rounded
			Extruded
			Thickened
			Thinned
			Unidentified
		Rim Stance	Inslanting/Incurved
			Vertical/Iincurved
			Inslanting
			Inslanting/Outcurved
			Vertical/Outcurved
			Outslanting/Outcurved
			Vertical/Incurved (mostly vertical)
			Outslanting/Incurved
			Everted
			Vertical (unidentified)
	Overall Shape	Jar Forms	Types 1-6
		Bowl Forms	Types 1-3
		Pinch Pots	
		Indeterminate	

Table 3-3 Stylistic Attributes Paradigm

Surface	**Notched**	**External**	**Decorated**	**Incising**	Curvalinear
					Horizontal
					Oblique
					Vertical
					Curv Horiz
					Curv Vertical
					Cur Ho Obli
					Cur Ho Vert
					Horiz Oblique
					Horiz Vertical
					Ho Obli Vert
				Punctation	
				Lugs	
			Undecorated		
		Internal	**Decorated**	**Incising**	
				Punctation	
				Lugs	
			Undecorated		
		Superior	**Decorated**	**Incising**	
				Punctation	
				Lugs	
			Undecorated		
	Un-notched		**Decorated**	**Incising**	
				Punctation	
				Lugs	
			Undecorated		

CHAPTER 4 DESCRIPTION OF THE SAMPLE

A total of 952 sherds greater than 0.5 inches in dimension were examined in this study, including 544 body sherds and 408 rims. These sherds came from 17 excavation Units (19-31, 34, and 35-37).

Temper

The majority of Lewis sherds are defined on the general rule of grog tempering. However, fine sand does appear in many of the sherds in this sample. As discussed earlier, the sand is thought to be a local natural inclusion, but its source not yet known (Jackson and Butler 2012). In a small study of ceramics from Klein's 1974 excavations, DiCosola (2002) observed a great deal of sand in the sherds, going even further to point out that some of that sand was derived from mica. The micacious sand stands out in stark contrast with a glittering appearance and is quite evident in the paste. I found that micacious sand was evident in less than one percent of the sample (n=8), but there was a general sandy texture to much of the decorated wares. Up to 92% of this sample was considered grit/grog in temper, the grit referring specifically to sand that is not micacious in origin. While grog is the dominant temper in all sherds from Cypress Citadel, most of them contained at least some sand, visible in a fresh break, or seen or felt on the surface.

While grog temper was the primary inclusion, there were few sherds that were exclusively grog tempered. This is the second most common temper category, but occurs in only 4.7% (n=45) of the sample. Butler and Wagner (2012) considered most of their entire assemblage from Cypress Citadel to be grog tempered however; it is unclear exactly what percentages they required

for sherds to be considered a mixture of natural sand and grog. They define their sand and grog tempered category as those sherds where the "sand grains were notably larger and of different composition than the sand that occurs naturally in some of the clays (Butler and Wagner 2012: 138)." There were some sherds (n=5) sherds in the present sample that I considered to have an abundance of sand, perhaps added intentionally, but I did not note an observable difference in the granules. In those instances the sand did not appear to be of a different character than that which exists naturally in the region.

I found the remainder of the ceramics in this sample to be untempered. While a small amount of sand may have been included naturally, 2.3% of this assemblage showed no intentional addition of crushed rock or fired clay (n=22). Among these sherds were pinch pot fragments (n=14), bead fragments (n=4), coil fragments (n=2) and a figurine fragment. The remaining untempered artifact was a plain rim sherd with no incising.

Table 4-1 Temper classes in the present sample.

Temper		Frequency	Percent	Cumulative Percent
	Grog	45	4.7%	4.7%
	MS/Grog	8	.8%	5.6%
	S/Grog	877	92.1%	97.7%
	Untempered	22	2.3%	100.0%
	Total	952	100.0%	

Surface Treatment

All surface treatment classes are based on the original treatment of the vessel prior to decoration. Decorative attributes are considered secondary surface treatments.

Lewis sherds are extremely durable and even difficult to break, but they are also very thin. While the individual sherds may be very hard, the large complete vessels were likely to have been brittle which may be the reason for the large number of fragmented pottery frequently too eroded to render information. Unfortunately, eroded surfaces constituted 8.6% of this sample (n=82).

Additionally, there were many sherds which had an unidentified surface treatment. In these cases, the sherds were not necessarily eroded, but displayed incised lines so close to each other that none of the vessel surface could be observed. Due to the fragmentary nature of the sherds, many of them were broken on incised lines or directly below a notched rim. In these cases, rather than assume the surface treatment, they were coded them as unidentified. These sherds made up another 5.1% of the decorated collection (n=49).

Cordmarked surface treatment obviously dominated all categories. It is typical for Lewis Phase, Late Woodland sherds to be grog tempered and cordmarked, hence the sample is typical in this sense. By removing the eroded category, I can assume what the assemblage might have looked like before any vessels were altered through wear over time. This may reflect a more accurate description of surface treatment percentages prior to erosion. Cordmarked sherds make up 75.6% of the sample (n=720) but, by removing the eroded category, that percentage jumps up to a more realistic 82.76% of the collection. More unusual to the Late Woodland are plain wares, nevertheless, 10.6% of this analysis was classified as plain (n=101). Again, removal of the eroded category causes an increase of plain sherds to 11.6%.

Table 4-2 Temper classes in the present sample.

Surface Treatment		Frequency	Percent	Cumulative Percent
	Cordmarked	720	75.6%	75.6%
	Eroded	82	8.6%	84.2%
	Plain	101	10.6%	94.9%
	Unidentified	49	5.1%	100.0%
	Total	952	100.0%	

Lip Profile

When possible, lip profile was recorded for each rim in the present study. In those instances where a profile could not be recorded, the rim was broken along the edge and about half of the thickness of the vessel has been eroded away. It was unclear at the beginning of this project

whether or not the shape of the lip profile would prove useful in any way, however, it seemed a suitable observation to record. While it does not appear to have any functional significance at this time, it may eventually be used to reveal temporal trends at Cypress Citadel. As a model for the lip profile, as well as rim stance and vessel form, I used Ozuk's (1987) classifications of Late Woodland ceramics from the American Bottom. Although his research focused on Patrick Phase ceramics, this scheme is popular among researchers of Late Woodland pottery in southern Illinois and Ozuk's classifications provide a comprehensive approach to ceramic attributes found in the region. There were rare instances where rims did not fit into the proposed classes, which required the addition of the 'thinned' category (n=4). The majority of the rims in this sample were either square or round in profile, with square predominating.

Table 4-3 Lip form classes adapted from Ozuk (1987).

Lip Form		Frequency	Percent	Cumulative Percent
	Extruded	9	2.2%	2.2%
	Rounded	138	33.8%	36.0%
	Slanted to Exterior	14	3.4%	39.5%
	Slanted to Interior	9	2.2%	41.7%
	Squared	189	46.3%	88.0%
	Thickened	1	.2%	88.2%
	Thinned	4	1.0%	89.2%
	Unidentified	44	10.8%	100.0%
	Total	408	100.0%	

Rim Stance

Rim stance, when available, was used to infer vessel form. Because most rims were small, vessel orifice diameter could not be measured and often rim stance was difficult to determine. Vessel form is relatively consistent in Late Woodland ceramics in southern Illinois. The two predominating forms are jars and bowls, bowls occurring less commonly. MacNeish (1944:41) defines five vessel types including a Lewis shouldered jar, coconut jar, olla jar (with a slightly more constricted neck), test tube jar (cylindrical vessel with rounded base), and a plate

form (see Fig. 3-2). However, there was no clear definition of a bowl form, which has become more obvious since MacNeish's 1944 thesis. Ozuk (1987: 277) defines two bowl types, which were utilized in the present study. As Butler and Wagner (2012: 142) point out, the test tube shape cannot be verified within the Cypress Citadel assemblage. Its vertical walls do not lend themselves to easy interpretation once the vessel has been smashed into only tiny rim sherds. In those instances where a rim appeared to be vertical, it was coded as unidentified. Often those "vertical" rims were too small to determine the actual stance. They may have appeared vertical, but had the sherd continued further down the vessel the stance may have changed drastically. More recent analyses at Cypress Citadel have used the vertical stance as a classification for larger rims (Jackson and Butler 2012: 148).

Eight separate rim categories were adapted from Ozuk (1987) and applied to the ceramics in this sample. Two of these classes did not appear in the analysis: Outslanting/Incurved and Everted categories. In their 2012 report Jackson and Butler also report the absence of Outslanting/Incurved rims and reported only finding two Everted rims in the entire collection (143). Pinch pots were considered a separate category and are not represented in this table.

Table 4-4 Rim stance classes adapted from Ozuk (1987).

Rim Stance		Frequency	Percent	Cumulative Percent
	1 Inslanting / Incurved	14	3.6%	3.6%
	2 Vertical / Incurved	23	6.0%	9.6%
	3 Inslanting	99	25.7%	35.3%
	4 Inslanting / Outcurved	29	7.5%	42.9%
	5 Vertical / Outcurved	36	9.4%	52.2%
	6 Outslanting / Outcurved	67	17.4%	69.6%
	Unidentified	117	30.4%	100.0%
	Total	385	100.0%	

Ozuk's (1987: 252) rim types are directly relatable to vessel types. Rims which are Vertical/Outcurved (n=36) and Outslanting/Outcurved (n=67) are considered bowl forms, bowl

type two and three, respectively. The remainder of the rims are jar forms, hence the summation of the two forms show a greater number of jars (n=165) than bowls (n=103). The most common vessel types are those with Inslanting rims, the so-called coconut jar, is the most popular Late Woodland form throughout the entire region (Jackson and Butler 2012:143). Illustrations of Late Woodland bowls show them to be open and simple in form (Ozuk 1987: 260).

Using crosstabulation of jars and bowls with surface treatments, there is some correspondence. Bowls tend to be cordmarked and jars are more apt to be plain. In table 4-5, the 'unidentified'surface treatment category has been removed, since it applies to those sherds where only tightly incised lines were observed. Additionally, if a rim could not be determined a jar or bowl, it was removed from this crosstabulation.

Table 4-5 Surface treatment and vessel form crosstabulation.

Surface Treatment & Vessel Form Crosstabulation					
Surface Treatment			Jars & Bowls		Total
			Bowl	Jar	
	Cordmarked	Count	93	136	229
		Expected	80.5	148.5	
	Plain	Count	3	41	44
		Expected	15.5	28.5	
Total		Count	96	177	273

Chi-Square = 18.487, two tailed significance = .000

Decoration

As noted, rim notching is relatively common. Most Lewis phase ceramics are externally notched, whereas Raymond cultures more typically apply notching from the interior (Butler and Wagner 2000: 690). Superiorly applied notching can occur in either group, but is typically more popular among Raymond assemblages.

Table 4-6 Notching frequencies within the present sample.

Location of Notching		Frequency	Percent	Cumulative Percent
	External	275	67.4%	67.4%
	Internal	14	3.4%	70.8%
	Superior	29	7.1%	77.9%
	None	90	22.1%	100.0%
	Total	408	100.0%	

The table indicates almost 80% of the rims in the sample were modified (n=318) and nearly 70% of all rims were modified externally (n=275). In most cases the notching was executed with a small stick, but as Jackson and Butler (2012: 144-145) point out rims are occasionally dowel impressed, slashed, or rarely bone impressed.

Surface Decoration: Incising

Perhaps the most interesting characteristic of this sample is of incising on a large number of the sherds. The majority of Late Woodland sites do not display any decoration other than rim modification in the way of notching, but Cypress Citadel is set apart in this respect. MacNeish (1944) did note some incising at Kincaid, but failed to recognize the variety in the incised patterns, instead, labelling all Late Woodland sherds with decoration as *Lewis Incised*. This catchall category has proved somewhat inadequate given the variety in incising patterns, some displaying triangular or curvilinear patterning. The decoration is almost always confined to the neck of the vessel. Potentially larger more distinct patterns or banding could not be discerned in the current sample. On many rims and some body sherds (with shoulder intact), however, the direction of the incised lines could be observed and recorded. The most prevalent pattern was horizontal incising just below the lip, but there was sometimes diagonal or oblique incising, as well as vertical lines which were applied perpendicular to the rim edge. Curvilinear lines were noted as well, sometimes nested in tight semi-circles. Twelve separate combinations of these directional lines were classifiable, with the most common being horizontal followed by oblique and then horizontal

and oblique lines together. The frequencies shown in table 4-7 represent only those incised rims. Line thickness ranged between 0.5mm and 6.0mm with the average found to be 2.7mm, showing a standard deviation of .75mm.

Table 4-7 Frequency of direction of incising.

Line Direction		Frequency	Percent	Cumulative Percent
	Curv	3	2.2%	2.2%
	Horiz	90	65.2%	67.4%
	Obliq	14	10.1%	77.5%
	Vertic	1	.7%	78.3%
	C,H	3	2.2%	80.4%
	C,H,O	2	1.4%	81.9%
	C,H,V	1	.7%	82.6%
	H,O	18	13.0%	95.7%
	H,V	5	3.6%	99.3%
	H,O,V	1	.7%	100.0%
	Total	138	100.0%	

Surface treatment does seem to play some role in the incised portion of the sample. Incising over cordmarking appears to be most common, comprising 67% of all those rims which are incised (n=87). Late Woodland pottery is less frequently plain, hence incising over plain wares occurs less often. Only 18% of incised rims have a plain surface (n=25). Eroded sherds which still retained clear incising made up 10% of the rims (=14) and the remaining 9% of the sample displayed incising too closely spaced to determine a surface treatment (n=12). For the purposes of examining those rims with known surface treatment, the undetermined incised rims and eroded surfaces have been excluded from the table. When testing only those sherds which are cordmarked and plain against the presence of incising, it becomes clearer that incising over cordmarking is actually statistically less likely to occur.

Table 4-8 Surface treatment and incising crosstabulation.

Surface Treatment and Incising Crosstabulation					
Surface Treatment			Incising		Total
			Absent	Present	
	CM	Count	227	87	314
		Expected	220.5	93.5	
	P	Count	37	25	62
		Expected	43.5	18.5	
Total		Count	264	112	376

Chi-Square = 3.940, two tailed significance = .035

Punctation and Lugs

Jackson and Butler (2012: 150) point out that "the use of punctations is almost unheard of in Late Woodland assemblages in southern Illinois." However, in the current sample punctations could be identified on five rim sherds and eight body sherds. This decoration occurred alone, with incising, and with two separate patterns. All but one sherd displayed punctates in rows, sometimes zoned by incising. Those body sherds with punctation likely come from very near the rim of the vessel, as it has not been my observation that decoration appears low on the body of a vessel. The punctates were applied using a hollow reed, or possibly a small bird bone.

The second form of punctuation was observed on one rim with a small triangular lug extending from the lip. Atop this lug was a single, perfectly centered punctation. Jackson and Butler (2012: 150) report five separate instances of punctation on lugs in their analysis. The rowed pattern of lined punctates is clearly the more predominant form in this sample.

Lugs occur in this collection in small numbers as well. These are typically small extensions of the rim. Nine examples were observed, including the one with a punctation. Five of these were on bowl forms and two on jars. The remaining two were on rims with an unidentified stance. In one case, external notching was applied around the lug. Nodes, or small bumps on the exterior of a vessel created by using pressure on the interior with a blunt stick or

other object, are more typically seen in Late Woodland ceramics, but there were none in this particular sample. All of the lugs were too small to slip a finger around. Jackson and Butler (2010: 150) suggest that the small nature of these lugs implies that they are decorative instead of functional.

Pinch Pots

Of the 408 rims examined in this study, 23 are from pinch pots. The majority were small unattractive vessels with occasional rim notching to the exterior or applied from the top. All of these vessels were relatively unsophisticated balls of clay which have been shaped after having a thumb inserted into the middle. Of the 23 cases, 14 were untempered and three show incising. Information regarding the incising has been used in the results of this analysis, but information regarding vessel form (indicated by rim stance) has been omitted.

CHAPTER 5 ANALYTICAL RESULTS

I had hoped to find significance in particular incising patterns, perhaps in conjunction with vessel morphology or notching attributes, in order to pinpoint specific incising designs which might be specific to Cypress Citadel. While the sample was too small to discern incising patterns in number and size of the sherds, the analysis was not in vain. Ultimately, it was possible to distinguish between what I believe to be early and late attributes at the site. These differences do not separate the wares into "types" per se, but can be seen as attribute clusters occurring in specific places in the site. Evidence for this conclusion is presented below.

The analysis is organized into three parts, providing information regarding lip form, surface treatment and vessel form. However, understanding the way in which the information was organized is essential to comprehending these results. When searching for patterns in the distribution of attributes, stratigraphy is often an important aspect of understanding a site. At Cypress Citadel (at least during the second field season), there were discrepancies in the methods of excavation. While some units were excavated in 10cm levels parallel to the ground surface, others were excavated in 10cm horizontal units using a string level. The second method often crosscuts natural stratigraphy in the instances where units occurred on a slope. As a result, without being able to determine proper stratigraphy based on excavation notes, I simply looked to the data. In an effort to find some patterning, it was crucial to find some division in each unit which indicated stratigraphy. This began with dividing each unit into upper and lower parts based, initially, on the number of levels which were excavated. Those units which had four

excavated levels were coded for upper levels one and two and lower levels three and four. This dichotomy was applied to each unit, regardless of the location of the excavation and the number of levels removed.

Once this process was complete, the result was a (very) loose stratigraphy within which to examine attributes. Incising was most important in the initial phases of the analysis because I felt it the most important aspect of Cypress Citadel ceramics, the thing that set the site apart from other Late Woodland sites. Thus, I sought out those attributes which might be more likely to co-occur with specific incising. It quickly became evident the sample size was simply not large enough to provide the information I was seeking. This was in part due to sample size, with only 408 rims to draw from, but was further complicated by the small size of all of the sherds. There were so many variations of incising that, as a whole, there were just a few sherds which fell into each category. Starting with attributes which occurred in larger frequencies, I began to examine the data in a different way, which led to the discovery of some interesting trends.

Of the eight lip forms used to classify the rims, 80% (n=327) were either squared or rounded, so that is where I began. Looking at frequency distribution between the rudimentary "upper" and "lower" categories, it was evident that although squared rims occurred throughout all of the levels, they were considerably more prevalent in the "upper" levels. Using this general trend as a basis, I examined each level of each unit more closely. If squared rims are more commonly found in the upper levels, then it seems an indication of stylistic preference later in the occupation of the site. Using a crosstabulation between upper/lower levels and squared/rounded rims, I found no statistical significance, but the chi-square value was close to being significant (see Table 5-1). This lack of significance could be caused by two factors. There could be inconsistency in the depth difference and the way the units were divided into upper and lower.

While some units only contained four levels, others contained eight; this caused level three to be labeled "lower" in units with only four levels and "upper" in units with eight levels. Even if there were consistency in excavation methods, stratigraphic zone boundaries were unlikely to have occurred at the same depth throughout the site. This brings us to the second possible reason the crosstabulation did not work out: location. It is likely that different parts of every site are used in different ways over time. Some units may have been excavated in an older part of the site, in which case all of the levels would fall into the lower zone. Others were excavated off the bluff edge in a large midden deposit and the frequencies are perfectly divided with the upper levels containing more squared rims and lower more rounded rims.

Table 5-1 First separation of levels and lip form crosstabulation.

Lip Form & First Level Distinction Crosstabulation					
Level			Lip Form		Total
			Rounded	Squared	
	Upper	Count	94	144	238
		Expected	100.4	137.6	
	Lower	Count	44	45	89
		Expected	37.6	51.4	
Total		Count	238	89	327

Chi-Square = 2.625. In order for this crosstabulation to be directionally significant, Chi-Square value needs to be at least 3.841.

In an effort to determine whether or not squared and rounded rims actually patterned in terms of depth, each unit was laid out in levels listing the number of squared and the number of rounded rims in each level. Totals were calculated for each level and each unit. Starting at level one, I systematically observed the ratio of square to round rims. If, for instance, the numbers of squared rims were greater than rounded in level one, the level was labeled "square." This was done to create a trial boundary between what may be considered upper and lower distinctions without taking into account specified depth. I was looking for a pattern of squared rims that

consistently occurred in the upper levels of a unit and likewise more rounded rims in the lower levels. In many units, the break was quite clear cut (Table 5-2). Squared rims largely outweighed rounded rims in the upper levels and rounded rims occurred in greater numbers in the lower levels. Depending on where that shift in the ratio occurred, the squared levels were labeled upper and the round lower.

In unit 26 that break occurs after level 2, when there are more rounded than squared rims. Other units with fewer levels were entirely square or entirely round. In these cases, there was no break and the entire unit was labeled upper or lower based on the ratio being equal to or greater than one. This distinction assisted with the issue of (perhaps) later or earlier parts of the site. If a unit had three levels, all of which primarily consist of rounded rims, it may have been excavated in an older part of the site.

Table 5-2 Unit 26 levels show a clear break in lip form.

Unit 26 Level & Lip Form				
Count				
Level Excavated		Lip Form		Total
		Rounded	Squared	
	1	0	5	5
	2	0	3	3
	3	2	1	3
	4	1	0	1
Total		3	9	12

Table 5-3 Unit 30 shows a greater ratio of squared rims in the upper four levels although one level shows a ratio that is equal.

Unit 30 Level & Lip Form				
Count				
Level Excavated		Liplabel		Total
		Rounded	Squared	
	1	0	1	1
	2	1	1	2
	3	2	5	7
	4	6	9	15
	5	1	1	2
	6	1	1	2
	7	3	1	4
	8	1	1	2
Total		15	20	35

Each level was evaluated in this way until there was a shift in the ratio of square or round rims. In the cases when a break had been created and a level below it went against the normal pattern, the remainder of the levels was examined. For example, in a unit with six levels, the first and second may be predominantly square rims, whereas the third may be mainly round, I would place a distinction between the two levels into upper and lower. If the fourth level had more square than round rims, the pattern is broken and the division must be re-evaluated. As long as levels five and six contained more rounded rims than square rims, the break remains. In the situation that the total assemblage for the remainder of the levels contains mostly square rims, the entire unit is labeled upper. In Unit 30 the ratio of squared to rounded rims is equal in level two, however the sum of squared rims is greater than round until level five (Table 5-3).

Once the levels were relabeled, the crosstabulation between upper/lower and squared/rounded rims was recomputed. The chi-square value was 27.579, easily significant at an alpha level of 0.05.

Table 5-4 Level and lip form crosstabulation.

Upper/Lower Level & Lip Form Crosstabulation					
Level			Lip Form		Total
			Rounded	Squared	
	Upper	Count	62	139	201
		Expected	84.8	116.2	
	Lower	Count	76	50	126
		Expected	53.2	72.8	
Total		Count	138	189	327

Chi-Square = 27.579, two tailed significance = .000

With the distinction between upper and lower validated in terms of rim form, I could search for patterning in other ceramic attributes at the site. I approached the analysis using two dichotomies, upper and lower levels and square and round lip form. I created flow chart to guide my tests for significance among other attributes and search for those that co-occur.

Because I was initially concerned with incising patterns, I tested for significance with the presence or absence of incising first. I did this for both upper and lower levels, as well as the squared and rounded lip forms. In fact, both showed patterning but at slightly higher alpha levels (Table 5-5, Table 5-6). On this basis, I proceeded to find a more specified match of co-occurring attributes. After examining the 12 categories of incising created on the basis of line orientation and combination, only three occurred in numbers large enough to be evaluated statistically. These are horizontally incised lines only, oblique incising only, and a combination of horizontal and oblique incising. I used only these three to create a two by three contingency table and determine the statistical significance of these categories of incising in upper and lower levels and rounded and squared rims. Again, the chi-square was significant in both cases, this time at a level of 0.05 (Table 5-5, Table5-6).

Table 5-5 Level and the presence or absence of incising crosstabulation.

Upper/Lower Level & Incising Crosstabulation					
Level			Incising		Total
			Absent	Present	
	Upper	Count	139	62	201
		Expected	131.5	69.5	
	Lower	Count	75	51	126
		Expected	82.5	43.5	
Total		Count	214	113	327

Chi-Square = 3.176, directional significance = .075

It is clear that incising is relatively more common in the lower levels. That is 40.4% of the lower level sherds are incised while only 30.8% of the upper level sherds are incised. Looking at it another way, there are more incised sherds than would be expected by chance alone in the lower levels (observed = 51, expected = 43.5) and fewer in the upper levels (62 vs 69.5). This is, of course, the basis for the chi-square statistic. Given the pattern, incising should be relatively more common on round rims than it is on square rims.

Table 5-6 Lip form and the presence of incising crosstabulated.

Lip Form & Incising Crosstabulation					
Lip Form			Incising		Total
			Absent	Present	
	Squared	Count	131	58	189
		Expected	123.7	65.3	
	Rounded	Count	83	55	138
		Expected	90.3	47.7	
Total		Count	214	113	327

Chi-Square = 2.964, directional significance = .085

After testing this assumption, table 5-6 affirms the hypothesis. There is firm indication that rounded rims are more likely to display incising of some kind, whereas squared rims are not.

Table 5-7 Incising direction and level crosstabulation.

Incising & Upper/Lower Level Crosstabulation					
Incising Direction			Level		Total
			Lower	Upper	
Incising Category	Horiz	Count	37	35	72
		Expected	31.3	40.7	
	Obliq	Count	4	7	11
		Expected	4.8	6.2	
	Both	Count	2	14	16
		Expected	6.9	9.1	
Total		Count	43	56	99

Chi-square = 8.310, directional significance = .016

It is now possible to examine the distribution of incising patterns relative to level. From this contingency table, it appears as though upper levels are more likely to contain rim sherds with a combination of horizontal and oblique incising (Table 5-7). Lower levels tend to have more sherds with one or the other type of incising, horizontal or oblique. It is not typical to have a combination of the two on sherds in the lower levels. However, this computation contains one cell that has an expected value of less than 5.0 so that the chi-square computation is suspect. A Yates' correction for continuity has already been applied in this case. Still there is patterning in the distribution of incising by level.

Table 5-8 Incising direction and lip form crosstabulation.

Incising & Lip Form Crosstabulation					
Incising Direction			Lip Form		Total
			Rounded	Squared	
	Horiz	Count	37	35	72
		Expected	35.6	36.4	
	Obliq	Count	8	3	11
		Expected	5.4	5.6	
	Both	Count	4	12	16
		Expected	7.9	8.1	
Total		Count	49	50	99

Chi-Square = 6.319, directional significance = .042

This pattern suggests that the relationship between incising and rim form should be examined. In fact, squared rims do show more instances of combined incising, which is exactly what the chi-square should show given the previous results. Rounded rims, which are typically found in lower levels and show more incising overall, are more apt to be incised without a combination of orientation in the lines.

I wanted to test notching in the same way, to determine if specific types of notching had any relevance to level or lip form. Unfortunately, there were not enough "typical" Raymond sherds to test (with interior notching). I was able to create contingency tables based on the presence or absence of notching because I looked at all of the rims from season two, not just the decorated ones. I also created tables with legitimate cell loadings for those rims with superiorly applied notching as well as external notching. I began with upper and lower level crosstabulation. As can be seen (Table 5-9) there is little patterning in the presence or absence of rim notching by level.

Table 5-9 Level and the presence or absence of notching crosstabulation.

Upper/Lower Level & Presence or Absence of Notching Crosstabulation					
Level			Notching		Total
			Absent	Present	
	Upper	Count	41	160	201
		Expected	40.0	161.0	
	Lower	Count	24	102	126
		Expected	25.0	101.0	
Total		Count	65	262	327

Chi-Square = .089, no significance

Table 5-10 Lip form and notching crosstabulation.

Lip Form & Presence or Absence of Notching Crosstabulation					
Lip Form			Notching		Total
			Absent	Present	
	Squared	Count	31	158	189
		Expected	37.6	151.4	
	Rounded	Count	34	104	138
		Expected	27.4	110.6	
Total		Count	65	262	327

Chi-Square = 3.397, directional significance = .065

Although the test was not significant in terms of upper or lower levels, there is clearly some correspondence between lip form and the presence or absence of notching (Table 5-10). As stated earlier, there were not enough internally notched rims to include in a contingency table and have consistent cell loadings. In this case, I had to use to only those rims with external or superior notching. Even if upper and lower levels had no correspondence to the presence or absence of notching, specifying the type of notching might change things. I was looking for significance in upper and lower levels, as well as lip form.

Table 5-11 Level and notching placement crosstabulation.

Upper/Lower Level & Notching Crosstabulation					
			Notching		Total
			External	Superior	
Level	Upper	Count	142	11	153
		Expected	137.8	15.2	
	Lower	Count	84	14	98
		Expected	88.2	9.8	
Total		Count	226	25	251

Chi-Square = 3.354, directional significance = .067

The type of notching was of some importance in upper and lower levels as seen in Table 5-11. While external notching is seen in both areas, it is much more likely for an upper level rim to be externally notched. The chances of a lower level rim being externally notched are good, but

not quite as definite as those rims in the upper levels. By these standards the square rims should show more notching. Additionally square rims show more external notching. The hypothesis tested is illustrated in the following table (5-12).

Table 5-12 Lip form and notching placement crosstabulation.

Lip Form & Notching Crosstabulation					
Lip Form			Notching		Total
			External	Superior	
	Rounded	Count	85	15	100
		Expected Count	90.0	10.0	
	Squared	Count	141	10	151
		Expected Count	136.0	15.0	
Total		Count	226	25	251

Chi-Square = 4.708, directional significance = .030

Ultimately, the hypothesis is confirmed (Table 5-12). Square rims not only have more notching in general, they have more external notching. This significance is found at a level of 0.05.

I thought it best to search, additionally, for correspondence in surface treatment and vessel form since I found that both are significant in upper and lower levels. The vessel forms were condensed into bowls and jars, which means that only rims with a discernible stance could be used. Jars, although generally more common than bowls, tend to occur more in the lower levels than the upper ones (Table 5-13).

Table 5-13 Level and vessel form crosstabulation.

Upper/Lower Level & Vessel Form Crosstabulation					
Level			Vessel Form		Total
			Bowl	Jar	
	Upper	Count	70	101	171
		Expected	59.5	111.5	
	Lower	Count	25	77	102
		Expected	35.5	66.5	
Total		Count	95	178	273

Chi-Square = 7.598, two tailed significance = .004

The surface treatments were also condensed to paint a clearer picture. Of the four categories for surface treatment, cordmarking and plain comprised 93%. Additionally, eroded surfaces and those which were unidentified do not offer any information. They were excluded from the crosstabulation in Table 5-13.

Table 5-14 Level and surface treatment crosstabulation.

Upper/Lower Level & Surface Treatment Crosstabulation					
Level			Surface Treatment		Total
			CM	Plain	
	Upper	Count	149	22	171
		Expected	143.4	27.6	
	Lower	Count	80	22	102
		Expected	85.6	16.4	
Total		Count	229	44	273

Chi-Square = 3.579, directional significance = .058

In Table 5-14 the obviously more prevalent cordmarking occurs in both upper and lower levels, but there is a greater chance for it occurring in the upper levels. Plain surface treatment is found in exactly the same number of cases in both levels. It makes sense to assume if bowls are more likely to occur in upper levels and cordmarking is more likely to occur in upper levels, that there must be a correspondence between the two. To test this, I crosstabulated vessel form and surface treatment (Table 5-15).

Table 5-15 Surface treatment and vessel form crosstabulation.

Surface Treatment & Vessel Form Crosstabulation					
Surface Treatment			Vessel Form		Total
			Bowl	Jar	
	CM	Count	87	142	229
		Expected	79.7	149.3	
	P	Count	8	36	44
		Expected	15.3	28.7	
Total		Count	95	178	273

Chi-Square = 6.383, two tailed significance = .007

The relevance between vessel form and surface treatment proves that the bowls tend to be cordmarked more often than jars (Table 5-15). However, the real starting point for this analysis came when I discovered the frequency of squared rims was greater in the upper levels. This occurred in an arbitrary separation of levels and in a planned analysis of each unit level. When I looked at the attribute of lip form versus vessel form, the data was not at all close to being significant. There were no trends that stood out in stark contrast when it came to squared or rounded jars or bowls. The next logical step guided the analysis toward lip form and surface treatment.

Table 5-16 Lip form and surface treatment crosstabulation.

Lip Form & Surface Treatment Crosstabulation					
Lip Form			Surface Treatment		Total
			CM	Plain	
	Squared	Count	165	13	178
		Expected	153.4	24.6	
	Rounded	Count	97	29	126
		Expected	108.6	17.4	
Total		Count	262	42	304

Chi-Square = 15.297, directional significance = .521

Cordmarked rims are considerably more likely to have a squared lip (Table 5-16). Likewise, plain rims are more likely to be rounded. Using this evidence and the earlier discovery

of a connection between the presence of incising and lip form, I applied incising to surface treatment. When looking at the presence of incising on cordmarked or plain rims, there is significance, so I moved on to test jars and bowls. When the chi-square value proved a correspondence between jars and bowls and incising, I attempted to specify the type of incising and re-run the crosstabulation. I was able to show that horizontal and oblique incising was directly connected to lip form and upper or lower levels, so the same was attempted when looking at surface treatment and vessel form. While there was significance in the presence or absence of incising, I was unable to show any association between specific incising. The following illustrates the significance between surface treatment and vessel form and the presence or absence of incising.

Table 5-17 Surface treatment and incising crosstabulation.

Surface Treatment & Presence or Absence of Incising Crosstabulation					
Surface Treatment			Incising		Total
			Absent	Present	
	Cordmarked	Count	227	87	314
		Expected	220.2	93.8	
	Plain	Count	36	25	61
		Expected	42.8	18.2	
Total		Count	263	112	375

Chi-Square = 4.298, directional significance = .038

Table 5-18 Vessel form and incising crosstabulation.

Vessel Form & Presence or Absence of Incising Crosstabulation					
Vessel Form			Incising		Total
			Absent	Present	
	Bowl	Count	60	43	103
		Expected	69.5	33.5	
	Jar	Count	135	51	186
		Expected	125.5	60.5	
Total		Count	195	94	289

Chi-Square = 6.201, directional significance = .013

The data shows that incising is less likely to occur overall, which is to be expected from a Late Woodland site (Table 5-17, Table 5-18). It is known that Cypress Citadel is unique in the fact that it has incising, so I chose to look at the data in another way. All of the incised data was extracted and then surface treatment and vessel form were re-examined. The significance is not evident (Table 5-19).

Table 5-19 Surface treatment and vessel form crosstabulation.

Surface Treatment & Vessel Form Crosstabulation					
Surface Treatment			Vessel Form		Total
			Bowl	Jar	
	Cordmarked	Count	30	35	65
		Expected	28.5	36.5	
	Plain	Count	6	11	17
		Expected	7.5	9.5	
Total		Count	36	46	82

Chi-Square = .645

Notching was the last category to be tested among surface treatment and vessel forms (Table 5-20). It appears as though external notching is more likely to occur on cordmarking. The data illustrates is that the presence or absence of notching is significant in both surface treatment and vessel form. If bowls are more likely to be cordmarked, then they are also more likely to have notching.

Table 5-20 Surface treament and notching crosstabulation.

Surface Treatment & Presence or Absence Notching Crosstabulation					
Surface Treatment			Notching		Total
			Absent	Present	
	CM	Count	55	259	314
		Expected	71.2	242.8	
	P	Count	30	31	61
		Expected	13.8	47.2	
Total		Count	85	290	375

Chi-Square = 29.216, two tailed significance = .000

This contingency table shows that notching almost always occurs over cordmarking. The evidence is clear by looking at the cell loadings.

Table 5-21 Vessel form and notching crosstabulation.

Vessel Form & Presence or Absence of Notching Crosstabulation					
Vessel Form			Notching Present or Absent		Total
			Absent	Present	
	Bowl	Count	17	86	103
		Expected	24.9	78.1	
	Jar	Count	53	133	186
		Expected	45.1	140.9	
Total		Count	70	219	289

Chi-Square = 5.192, directional significance = .023

The significance of incising on vessel form is a little less clear (Table 5-18), but notching is more often present on bowls than on jars (Table 5-21). Although there are more jars in general the chi-square function allows for examination of the data in a way that is more than just random.

The results of this analysis allow me to describe the ceramics at Cypress Citadel with some specificity. While there are some drawbacks, like the small data set, I believe that the strategy I developed for deducing information is effective. The ceramics in this sample exemplify distinct trends. Initial observations of lip form showed significance, which was ratified by the

co-occurrence of incising and further substantiated by patterns in notching. Using the data in this way can inform the reader as to what an "early" or "late" vessel may have looked like. At the very least it gives a general development of change in attribute combinations over time, which is essential to the archaeology during a time period that has not been as well researched as the later periods.

CHAPTER 6 SUMMARY AND CONCLUSIONS

The ceramics in this sample exhibit the general characteristics of Lewis ceramics as a whole. Pottery from this region of southern Illinois is typically thin, cordmarked and grog tempered. Rims sometimes display decoration confined to the lip which is largely in the form of external notching and other decoration such as incising is relegated to the upper portion of vessels. The majority of the vessels are jars, which nearly double the number of bowl forms. A similar ratio was noted in the analysis by Jackson and Butler (2012). Koeppel and Butler (2000: 160) point out similar Raymond sites to the north where the ratios are nearly two to one. According to an analysis of the entire Cypress Citadel collection by Jackson and Butler (2012), the majority of the rims were identified as inslanting or inslanting/incurved just as they were in the analysis of this decorated sample. According to Ozuk (1987), this rim stance is indicative of the "coconut" jar form which has been considered the most common form found in Lewis cultures. All of these characteristics are corresponded in the results of this project.

While overall the collection is consistent with other research and representative of the majority of Lewis ceramics, there are some facts about the Cypress Citadel ceramics that set them apart. They are not only decorated, they are incised with great care for design. At the beginning of this project, my motive was to enhance my understanding of these sherds with the intention of identifying and defining specific decorative patterns. While my knowledge of the ceramics has certainly increased during such a thorough analysis, the incising patterns observed were too heterogeneous and I was unable to distinguish any particular style which may define a type other

than Lewis Incised. There were dominating combinations of incising, including horizontal lines applied just under the lip, oblique or diagonal lines occurring in the same location and sherds with groupings of the two, but these did not prove to be statistically significant. This sort of incising was simply dominant in frequencies, but not dominant enough on their own to necessitate a subcategory of the Lewis Incised type.

As mentioned above, there are other characteristics of Cypress Citadel which point to its distinct nature apart from the numerous hill top sites. The stone burial mounds and large size are not common at most sites from this time. Further dating may be necessary to decide whether or not the mounds and parts of the site were built later in the occupation, perhaps even overlapping with the Emergent Mississippian at Kincaid. All assumptions aside, Jackson and Butler (2012: 155) concur that Cypress Citadel seems to be at the center of decorated ceramic production. Nearby sites show similarities in geographic location, stone mounds, and even decorated ceramics. In particular, McGilligan Creek across the Ohio River in Kentucky seems to be directly connected in many ways to the Cypress Citadel complex. However, Butler (2001) concedes that the ceramic decoration occurs in smaller numbers and appears to be somewhat dissimilar at that site. A comparative analysis of the Cypress Citadel and McGilligan Creek might yield different results.

Kincaid Mounds is where the type "Lewis Incised" designation originated, but more recent studies carried out at Cypress Citadel show that this loosely defined type was based on a very small number (as few as 91) of decorated sherds (Jackson and Butler 2012: 155). So, what later became a large mound center and prominent Mississippian site still does not seem as developed as Cypress Citadel during its Late Woodland occupation, if decorated ceramics are any indicator. Additionally, ceramics from Hog Bluff, one of the stone forts mentioned, to the northeast of Cypress Citadel also contain similar incised ceramics. The decorated wares there also occur in

tiny numbers, even less than at Kincaid. This is weighty information when considering Cypress Citadel as the center for the production of incised pottery, an assemblage which was found to include 331 decorated rims (Jackson and Butler 2012).

Jackson and Butler (2012) studied 317 incised rims (8 of which combined punctation) in their analysis of the entire assemblage and the collection analyzed in the present study contained 138 of those, approximately 44.7%. In their discussion of their analysis they provide an excellent summation for the description of these varied designs saying "it seems like there was no consensus among potters as to what constituted a proper of acceptable way to adorn a pot." They, too, had difficulty finding a coherent decorative style in their general analysis. Although I took a closer look at incising patterns, that is not what led to the essential part of this research project. A simple distinction in the frequency of lip form, which has not been seen as a temporal indicator in the past, propelled the analysis in a separate but useful direction.

Because the majority of rims were either rounded or squared in terms of lip form, it seemed advisable to examine whether or not this characteristic had any relevance to unit level data. In fact, the gradual disappearance of rounded rims in favor of squared rims became quite evident. It appears that lower levels, or those which may be considered early in the occupation, have tendency to contain rounded rims which do not appear at all in many of the upper levels. Using this characteristic as a base from which to examine the ceramics, it became clear that the upper and lower levels could be described as having general tendencies which are verified by statistical significance. All of the conclusions I have come to are proven statistically significant by using the chi-square test. I chose to use this test because it has been proven successful when dealing with smaller numbers and it compares firsthand observed data with theoretically expected values (Thomas 1986: 273). Therefore conclusive results can be explained through statistics as to what a

typical sherd from early in the occupation may look like and what a later sherd may look like.

Significantly, rounded rims were found to have more incising than the later levels. Heretofore, incising had been considered a later trait rather than an early one. For example, Lewis Incised materials from Kincaid clearly combined Late Woodland and Emergent Mississippian ceramics (Cole et al. 1951: 179), but this new evidence suggests that the incising at Cypress Citadel may have been more common earlier in the sequence. Incising occurred in a wide variety of directions and combinations but for the most part was consistent in the early levels. It appears in the form of horizontally applied lines or diagonal/oblique lines, but not usually a combination of the two. In early levels a cordmarked surface treatment is most common, but plain surface treatment accounts for 21.6% of the sherds and tends to occur more often than would be expected by chance. Of all of the rounded rims in this sample, 23% were plain.

Rounded rims are less often notched than those which occur in later levels. When they are notched, it is likely that superiorly applied notching will occur almost as often as the typical Lewis external notching. This is somewhat perplexing in that superior notching, executed from the top with a stick perpendicular to the lip, can be considered either Lewis or Raymond characteristic. Perhaps the first potters at Cypress Citadel favored their neighbors to the north, who shared similar methods of notching more than those who came later.

If this assumption is true, then the later potters had a preference toward a squared lip form. Later sherds from the site tend have a squared lip form and are less likely to be incised than those earlier rounded lip sherds. Statistical evidence shows that incising on squared rims has more instances of combining horizontal and diagonal/oblique incising. Potters who came to the site during the later part of the Late Woodland may have chosen to incise vessels less often, but with more stylistic variance. Instead of using only horizontal incising or oblique incising, they

combined the two, perhaps with intent to create a more aesthetically pleasing pot. It is also possible that this change occurs because styles simply change over time. Ceramics producers were executing the same general types of incising (horizontal or oblique), it may have been no more difficult to combine the two to create a more unique pattern. Much like the earlier levels, the later levels are also mostly cordmarked. Plain surface treatment, in fact, is even rarer in these levels and comprises only 14.8% of the later rims. All in all, the percentage of plain square rims is drastically less than plain round rims, with plain surface treatment accounting for only 7.3% of those observed.

Later ceramics also exhibit a difference in notching. Not only are squared rims more often notched, they are more likely to be externally notched. So, what we now define as the typical Lewis sherd may have become more prevalent in the later stages of the site. The early, primarily rounded, rims were less often notched and contained a higher number of superiorly notched sherds which is a trait that can be used to describe Raymond or Lewis sherds.

In summary, this research suggests general tendencies for what early and late vessels may have looked like at Cypress Citadel. Early vessels are more likely to be a round lip jar with horizontal or oblique incising. Additionally, they tend to have more superior notching. Although cordmarking predominates on early and late rims, plain vessels are more likely to occur in lower levels. Likewise, later vessels tend to be squared lip bowls with a combination of horizontal and diagonal incising occurring near the rim. Late vessels are chiefly cordmarked but show less occurrence of plain rims and are primarily notched externally.

This research contributes to the overall understanding of the Lewis cultures in southern Illinois, which have previously been overlooked, under researched and even termed as “good grey cultures” that seem to be ignored for the aesthetics of the Mississippian artifacts (Williams 1963:

297). Although in recent years researchers have given more attention to the Late Woodland, there are still numerous sites which have yet to be examined more closely. In the case of Cypress Citadel, I was unable to define specific patterns in the decoration, but the data I collected was not completely useless despite the highly fragmented remnants. Analysis of the attributes of each artifact, the ability to describe what a 'typical' early and late vessel may have looked like may prove useful in future research. It is curious that prior analyses of Late Woodland ceramics have not utilized simple attributes like lip profile to denote early and late sherds. Jackson and Butler (2012: 154) say "at this point in time this variable does not appear to be significant in either temporal or functional terms." However, this new research suggests that this attribute may be the key to deciphering what early versus late stylistic preference may have been.

Looking at this project from a broader perspective, it is not the analysis alone that makes it valuable in the face of archaeological research. While at its crux, the project presented here has provides valuable information to regional archaeology, specifically the Lewis phase. This particular type of analysis has allowed for an examination of a rare decoration on an attribute level. The results show small, but marked changes over time. In reality, lip attributes are typically lumped into an overwhelming collection of other attributes that constitute Lewis pottery. This has been the longstanding method of archaeologists who regularly utilize the type-variety system. Although this system of "taxonomy" has also been used as classification, there has been a great deal of debate over how to properly apply such divisions of material culture (Rouse 1960: 321). Types consist of a list of attributes which define each group (Rouse 1939: 12). Varieties are then suggested by groupings of modes or individual attributes. This form of classification is sometimes problematic, as Phillips (1970: 24) points out "there is no question that two or more types can and usually are, made by the same community, even by the same individuals." While I

am not assuming that this collection consists of more than one type, I am pointing out that the Lewis type encompasses a great many attributes. This lumping of attributes falls short when examining change over time at a specific location like Cypress Citadel (Phillips 1970: 26). This refined attribute level analysis looks into the small changes taking place in pottery decoration over the span of the entire occupation of the site. It specifies the appearance of attributes and over a more specified range of time and space, rather than simply classifying sherds as Lewis or Lewis Incised.

It would be interesting to expand this examination to the entire Cypress Citadel assemblage. If the data did in fact match, it is easy conceive what could be gleaned from the application of this type of analysis at sites like McGilligan Creek which already resemble Cypress Citadel in many ways. Those results could determine whether or not there is any tangible connection between the two sites and their preference for incising styles over time. They may have been swapping ideas or trading decorated vessels to encourage the neighborly exchange of goods and resources.

This is all speculation, of course, but it suggests that the research presented here may be a jumping off point which could connect sites with even tiny collections of decorated Lewis wares. If radiocarbon dates were conducted with more frequency, they might support such data to prove that there is a difference between early Lewis Incised and late Lewis Incised. That information, in itself, may lead to the definition of new subcategories of types, which was my primary research goal. It seems that perhaps the incising patterns are not the only key to deciphering a type, but maybe an entire collection of characteristics (lip form) formerly thought to be useless in temporal analysis. In many ways, I'm on the way to completing what I set out to do.

The results of this analysis may prove beneficial to the entire southern Illinois and western

Kentucky region where Lewis cultures are found. It is certainly worth discussion when considering such a unique site in a sea of Late Woodland ridge top homogeneity. Cypress Citadel is set apart for many reasons, but the ceramics are a large part of what makes this site different. Analysis of attributes which co-occur may be the key to deciphering sites which are similar in nature. Perhaps ongoing research at Cypress Citadel will take into account the information I provided here, as a useful contribution to the greater archaeological context of the region.

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