Order Number 9023508

Political change in chiefdom societies: Cycling in the late prehistoric Southeastern United States

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The University of Michigan, 1990

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POLITICAL CHANGE IN CHIEFDOM SOCIETIES:

CYCLING IN THE LATE PREHISTORIC

SOUTHEASTERN UNITED STATES

Volume I

by

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A dissertation submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy
(Anthropology)
in The University of Michigan
1990

Doctoral Committee:

Professor Richard I. Ford, Chairman
Professor William R. Farrand
Professor John D. Speth
Professor Henry T. Wright

For Jenalee, and our parents

ACKNOWLEDGEMENTS

The preparation of this dissertation reflects the effort, support, and encouragement of many people. First and foremost, I would like to thank the members of my doctoral committee at the University of Michigan, who have supported my continuing education in archaeology. Richard I. Ford provided technical advice throughout the project, and perhaps more important, continued encouragement. Thanks to his efforts this study appears in 1990 instead of some time in the early twenty-first century. Sharing in these efforts were two other archaeologists from the Museum of Anthropology staff, John D. Speth and Henry T. Wright. To these three individuals, as well as to the other archaeologists and anthropologists I had the privilege to interact with at Michigan from 1983 to 1986, I owe a great debt for teaching me how to approach archaeological inquiry from a questioning, goal directed perspective. I owe the same to the fourth member of my committee, William R. Farrand, who additionally helped provide a solid foundation for the examination of paleoenvironmental data, and how to relate these to problems of anthropological interest.

Malcolm R. Cleaveland and David Stahle of the Tree Ring Laboratory, Department of Geography, University of Arkansas are to be thanked for providing primary unpublished data on their bald cypress dendrochronological investigations in the Georgia and South Carolina area, and for detailed advice in its interpretation.

Sergei Kan of Dartmouth College helped shaped the ethnohistorical investigations contained in this study, through his detailed instruction in the use and interpretation of documentary evidence. Specific interpretations of the southeastern ethnohistoric literature were facilitated through the good graces of Charles M. Hudson of the University of

Georgia, who provided me with copies of his published and ongoing works in progress. I am particularly grateful that he made available various successive drafts of his important work The Juan Pardo Expeditions: Exploration of the Carolinas and Tennessee, 1566-1568. My interpretation of the Southeastern ethnohistoric literature, specifically its linkage with the archaeological record, was also greatly assisted by interaction with Chester B. DePratter and Marvin T. Smith, whose recent dissertations, respectively, on Late Prehistoric and Early Historic Chiefdoms in the Southeastern United States and Archaeology of Aboriginal Culture Change in the Interior Southeast: Depopulation During the Early Historic Period should be read by every serious Mississippian scholar. David J. Hally and Mark Williams of the University of Georgia are also to be thanked for their assistance and commentary along these lines as well. In addition to providing a wealth of scholarly advice, and advance draft copies of most of their papers for the past several years, they introduced me to the site files and artifact and documentary collections in the Archaeology Laboratory, and greatly furthered my education in the history of Georgia archaeology. Their continued friendship, of which lengthy conversations were a main ingredient, made visiting Athens a real pleasure. Marvin Smith, who had an office next to mine for two years when we were both working in Atlanta from 1986 to 1988, and who heard most of my ideas in their first flight, deserves particular thanks for his advice and, where necessary, good natured criticism. He and his wife Julie provided me with a place to stay during my several visits to Athens after they moved there in 1988, which made for great conversation until the early hours of the night. Most of the figures that appear in these volumes were produced by Julie, and I owe her thanks for her technical advice and illustrative skills.

At the University of South Carolina Tommy Charles, Chester DePratter, Albert C. Goodyear, Sharon Pekrul, Nena Powell, Bruce Rippeteau and Steven D. Smith of the Institute of Archaeology and Anthropology (SCIAA) provided access to site forms, collections, and specific project records and photographs from previous archaeological investigations in the Savannah River Valley and nearby areas of South Carolina. My research at SCIAA during the years 1985 and 1988-1990 was supported by Dr. Bruce Rippeteau, South Carolina State Archaeologist, and by Glen T. Hanson and Mark J. Brooks, the successive program managers of SCIAA's Savannah River Archaeological Project Laboratory on the Department of Energy's Savannah River Site (SRS) near Aiken, South Carolina. Much of the final research presented here was conducted while I was a Department of Energy Oak Ridge Associated Universities (ORAU) graduate fellow on the SRS. This publication is based on work performed in the Laboratory Graduate Participation Program under Contract Number DE-AC05-76OR00033 between the U.S. Department of Energy and Oak Ridge Associated Universities. Mark J. Brooks and Richard Brooks, co-directors of SCIAA's Savannah River Archaeological Research Project facility provided material support in the production of the manuscript. Kenneth E. Sassaman, who was also writing his doctoral dissertation on the SRS at the same time I was preparing this manuscript, was a particularly important and valued source of advice and criticism. Other material assistance in the preparation of this manuscript was provided by Garrow & Associates, Inc. of Atlanta Georgia, where I worked from mid-1986 to early 1988, and the National Park Service's Atlanta Interagency Archaeological Services Division, where I worked in 1988 prior to accepting the ORAU fellowship and where I returned in the spring of 1990.

The staff of Mound State Monument, Moundville, Alabama, where the records and collections from the Richard B. Russell Reservoir investigations were curated, also greatly facilitated the detailed collections analysis undertaken during this project. Mr. Carey Oakley, Director, and Mr. Eugene Futato, Associate Director, were particularly helpful in locating artifacts and camera-ready original graphics, providing housing, and giving technical advice about the directions of the research. Thanks to the hospitality of

Eugene Futato, who I stayed with on several visits, my research in Alabama was both rewarding and enjoyable. In addition to a fine archaeological library, Eugene's science fiction collection is the only one I have encountered owned by an archaeologist that exceeds my own, giving us even more things to talk about.

Richard D. Brooks of the SCIAA/SRS conducted an archival search for plats of Mason's Plantation, while Thomas Robertson of Augusta, Georgia, provided me with copies of early channel maps from along the Savannah showing the location of this site. Jim Bates, Forest Archaeologist, provided me with valuable data on the location of Missisippian components on the Sumter National Forest. Finally, the landowners of the Lawton and Mason's Plantation areas, Mrs. Harriett (Lawton) Watson and Mr. Leroy Simpkins, are to be thanked for allowing me access to their property.

Readers providing technical commentary on portions of this manuscript included Elizabeth M. Brumfiel, John E. Clark, Malcolm R. Cleaveland, Chester B. DePratter, Timothy K. Earle, William R. Farrand, Richard I. Ford, Joan M. Gero, Sergei Kan, David J. Hally, Glen T. Hanson, Charles M. Hudson, Stephen A. Kowalewski, George R. Milner, Kenneth E. Sassaman, John F. Scarry, Marvin T. Smith, John D. Speth, David W. Stahle, Paul D. Welch, J. Mark Williams, and Henry T. Wright. All of those individuals, beyond providing advice and technical commentary on the overall manuscript or chapters in it, have made available primary data, advance copies of manuscripts, and, most importantly, have offered continual encouragement. Any success this study may have is due in large measure to the strong positive research atmosphere demonstrated by these colleagues and scholars.

Finally, it must be said that this manuscript would probably have never been produced were it not for the continued love and assistance provided by my wife Jenalee, who still swears she never believed I was serious when I said (prior to our marriage) that I planned to go back to school some day.

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CHAPTER I.

CHIEFDOM POLITICAL EVOLUTION AND CYCLING BEHAVIOR

Cycling in Chiefdom Societies

The question of how organizational and administrative structures emerged and evolved over time has been a subject of considerable interest to anthropologists since the beginnings of the discipline. Subsumed under this topic is the question of cycling behavior. Why is it that organizational structures appear to fluctuate back and forth between specified levels of sociopolitical complexity in some societies, while in others they progress seemingly uninterruptedly to ever-higher levels? Why, for example, have societies in some parts of the world apparently cycled about approximately the same level of complexity for hundreds or perhaps thousands of years, such as among the tribes and chiefdoms observed in New Guinea, portions of lowland South and Central America, (Bronze Age) Europe, and in central Africa, while in other regions more complex societies emerged fairly quickly? Why, furthermore, should large, complex, and seemingly successful chiefdom-level societies fall apart or disappear entirely? Cycling behavior, it will be demonstrated, is particularly characteristic of chiefdom societies. Exploring this process should, thus, not only advance our understanding of how chiefdoms operate, but also shed light on their emergence and, in some cases, evolutionary transformation into state-level societies or collapse into simpler organizational forms.

The question of an apparent cyclicity to aspects of human history has received considerable attention from anthropologists and historians alike. To anticipate the extended discussion of chiefly cycling in Chapter II, cycling is here defined as fluctuation in administrative or decision-making levels within specified upper and lower limits. More specifically, and of relevance to the scope of the present research, it encompasses the social transformations that occur when administrative or decision-making levels within chiefdom-level societies in a given region fluctuate between one and two levels above the local community. As such, the process subsumes transitions between simple and complex chiefdoms. Such transitions are generally assumed to fall under the scope of cultural evolution. It is argued here, to the contrary, however, that cycling is an inherent aspect of chiefdoms, a process that occurs within this form or stage of sociopolitical development. Evolutionary developments, in this view, occur only at the onset of the cycling process, when chiefdoms emerge in a region, or when the cycling process is interrupted, as happens when either states appear or, more rarely, when chiefdoms disappear completely from a region. Thus, the study of cycling behavior, while in and of itself important, also leads, indirectly, to a better understanding of how evolutionary transformations occurred in the organization of human society.

The pervasiveness of cycling in chiefdom societies is a matter of particular interest, since evidence for the process does not appear restricted to one or a few dramatic or enigmatic cases. Evidence for cycling is present wherever chiefdoms have been examined archaeologically or ethnographically in any detail. Exactly what happens during the cycling process, which encompasses phenomena as disparate as regional population shifts and localized renewal ceremonies, however, is not well understood at the present. Even less certain are the reasons *why* such changes occurred. The purpose of this study is to remedy this situation to a small extent. Understanding what cycling is and how it operates, it is argued, is critical to understanding the archaeological and ethnographic record of the world's chiefdoms.

Cycling in the Chiefdoms of the Southeastern United States

The late prehistoric and early contact era chiefdoms of the Southeastern United States offer an outstanding laboratory for the study of social change and, specifically, the problem of cycling behavior. The late prehistoric archaeological record from across the region is, upon close examination, replete with evidence for cycling. In every area that that has been carefully examined evidence for the emergence, expansion, collapse, and re-emergence or replacement of simple and complex chiefdoms has been found. In some of these societies or polities, the centers were occupied for extended periods, up to several centuries, while in other polities they appear to have been occupied for only a generation or two. Traumatic rebuilding episodes are documented at ceremonial centers throughout the region, specifically the wholesale replacement of buildings and fortifications, or the addition of new mounds or mound stages. This activity appears linked to changes in leadership positions, organizational structures, and physical centers of power within these societies. On a larger geographic scale, the emergence, growth, and collapse of major regional polities such as those centered on sites such as Cahokia, Moundville, or Etowah have long intrigued Southeastern scholars. The Vacant Quarter hypothesis (Williams 1982), that much of the central Mississippi Alluvial Valley was abandoned after ca. A.D. 1400, following the collapse of the great Mississippian center at Cahokia, is perhaps the most dramatic example from the Eastern Woodlands. Chiefly cycling is thus a topic of considerable interest to Mississippian researchers.

As will be demonstrated, the political structure of chiefdoms in general, and particularly within the late prehistoric Mississippian societies of the Southeastern United States, typically exhibits a cyclical pattern of change in organizational complexity. In the pages that follow factors promoting both stability and change in chiefdom political organization are examined, in an attempt to understand the processes underlying cycling behavior. While addressing a general question of political change, and employing a broad global data base in the development of an interpretive perspective, the research is directed to chiefdoms within a specific region, the Southeastern United States, with particular attention to the Mississippian societies that existed in the South Appalachian area from ca. A.D. 1000 to 1600. There are a number of reasons for this progressive narrowing of focus.

First, while the development of a general descriptive and explanatory model of cycling in chiefdoms is the desired goal of this research, such a formulation must be tested with real world data. The archaeological record from the Southeastern United States is particularly well-suited to the investigation of political change. During the final millennium before European contact, simple and complex chiefdoms arose throughout the region. Their emergence and development has fascinated archaeologists for over a century, and the long history of research has generated a tremendous data base. Even though research emphases have changed, from concerns about the origin of these "mound builders" to interest in material cultural and chronology, and most recently to questions about the evolution and operation of these societies, data have continued to accumulate. As of the late 20th century, literally tens of thousands of Mississippian sites have been recorded over the region, and hundreds have been excavated. Fieldwork has been increasingly directed to documenting the universe of possible site types, including mound centers, villages, hamlets, and limited activity loci. In many areas of the Southeast chronological resolution on the order of 100-year intervals or less is now possible, permitting areally extensive, fine-grained analyses of settlement patterning, land use, and social change.

Second, an extensive historic record exists describing Southeastern chiefdoms from the period of early European contact. The recent linkage of archaeological and ethnohistorical research by a number of scholars has made the subject of regional political geography, particularly social relations within and between Mississippian societies, a productive area for research. Early contact accounts have become the focus of considerable research, and have been used, in conjunction with archaeological data, to examine the location, extent, internal organization, operation, and evolution of these societies across the Southeast.

Third, the Southeastern United States has seen a great deal of paleoecological research in recent years, directed to the documentation and reconstruction of vegetational communities, fluvial dynamics, and climatic conditions. Much of this research, encompassing the disciplines of geoarchaeology, geomorphology, palynology, and dendrochronology, can be profitably employed in the examination of late prehistoric social evolution.

Fourth, the South Appalachian Mississippian area — defined as the region comprising Georgia, South Carolina, and contiguous portions of adjoining states (Ferguson 1971; Griffin 1967; Holmes 1903:130) — has a long history of archaeological research. In recent years, furthermore, the Mississippian chiefdoms that occupied this area have been the subject of extended research by a number of archaeologists and ethnohistorians. As a result, it is probable that the archaeological and historic data from this part of the Southeast are among the most extensive available anywhere for the study of chiefdom political change.

While this study focuses primarily on the Mississippian chiefdoms of the South Appalachian area, events elsewhere in the Eastern Woodlands are also considered. A major premise of this study is that the political and social histories of individual chiefdoms can only be understood from broad geographic and temporal perspectives. Organizational change in these societies should be examined from a regional as well as local level, using information drawn from both a synchronic and diachronic framework. Before turning to a discussion of the approach and testing procedures employed in this study, however, further discussion of what is meant by cycling behavior is in order.

Operationalization Procedures

To resolve what is meant by chiefly cycling, and how and why the process operates, we need to learn what it is about chiefdoms in general, and Mississippian societies in particular, that translates into greater or lesser organizational stability. We need to understand the reasons behind organizational fluctuations in chiefdoms, and how these changes take place. Ethnographic, ethnohistoric, and archaeological evidence for cycling are reviewed, and used both to delineate the process as well as to advance procedures by which it may be examined. The purpose of this review is, thus, the formulation of explicit propositions about the causes of cycling in chiefly polities, and the development of methods by which these propositions may be tested. This knowledge is then put to use in the examination of particular case histories, in this study a series of chiefdoms from the Southeastern United States.

The question of cycling is examined first at the general level, employing evidence from ethnographic studies of chiefdoms from around the world. Chapter II begins with a definition of what is meant by chiefly cycling and proceeds to a generalized discussion of archaeological and ethnographic evidence for the process, drawing on research conducted in Africa, Asia, Polynesia, and other areas of the world. A series of generalizations about the causes of cycling behavior in chiefdoms and the methods by which it may be studied are developed and linked together, providing a framework for the analyses that follow. Chapters III and IV focus on the ethnohistoric and archaeological evidence, respectively, for cycling as it was manifested in the late prehistoric and early historic chiefdoms of the Southeastern United States. These chapters provide a broad introduction to Mississippian chiefdoms as well as the kind of evidence available for the study of organizational change in these societies. The remaining sections, Chapters V through VII, examine the question of chiefly cycling using data derived from the late prehistoric archaeological record of the South Appalachian area, with a particular emphasis on the late prehistoric, Mississippian period chiefdoms of the Savannah River Valley. The study concludes with a review of the insights learned from this examination of chiefdom cycling behavior, and directions for future investigations.

Comparative Ethnographic Investigations

Chapter II contains a review of portions of the global ethnographic literature for cases of cycling in chiefdoms, to see if underlying common themes are evident that can be evaluated using archaeological data. This literature search is concerned with identifying the kinds of cycling behavior that can occur in chiefly societies, and reasons for this kind of behavior. Specific areas of interest included descriptions of change in the size and organizational properties of chiefdoms, with particular emphasis on accounts of territorial expansion or contraction, successional events (i.e., leadership changes), and the fission or fusion of communities and polities. The goals of the review are definitional as well as explanatory in intent. That is, its purpose includes resolving what is meant by cycling behavior as well as finding possible explanations for the process. Ethnographic cases are examined with the following questions in mind. What specifically is happening? What are underlying triggering/causal mechanisms? Is there any apparent periodicity to the phenomena under study? A discussion of what is meant by cycling is provided, and a series of explanations for the process are examined, encompassing factors as disparate as societal developmental histories and trajectories; mechanisms maintaining elite authority structures; mechanisms by which chiefly competition and succession are defined; patterns of population growth, territorial boundary maintenance, information management, and warfare; patterns of intra- and inter-societal population movement and competition between elites; and patterns of regional climate, resource distribution, and physiographic structure. These are integrated into a generalized model of the causes and operation of organizational cycling in chiefdoms.

Ethnohistoric Investigations

Chapter III presents a detailed examination of ethnohistoric evidence for cycling behavior in the contact era chiefdoms of the Southeastern United States. Although a primary purpose for this review is the development of archaeologically testable propositions about the nature and causes of chiefly cycling locally, the chapter is also intended to introduce the reader to the kind of documentary evidence available for the study of Southeastern chiefdoms, both its value as well as its limitations. At the time of initial European contact in the Southeast in the early 16th century chiefdom societies were observed over much of the region. The records of early explorers, most notably those from the De Soto (1539-1543), De Luna (1559-1561), and Pardo (1566-1568) expeditions, contain a wealth of information about the internal organization, operation, and external relations of these societies, including accounts of chiefly succession; mechanisms by which chiefly authority was maintained; chiefly warfare, tribute flow, and ideological structure; buffer zones; the abandonment of towns and centers; and the effects of crop failures or other disasters on leadership positions.

To put this information in proper context, a brief history of the expeditions of the period is provided, in conjunction with an evaluation of the sources derived from them. Following this grounding of the ethnohistoric database, a description of aspects of native life relevant to the study of chiefly cycling is then presented. The purpose of this review is to justify how early historic accounts from the Southeast can be relevant to the study of developmental change in the prehistoric Mississippian societies occupying the region. The ethnohistoric investigations are directed primarily to early contact-era accounts, prior to the marked organizational changes known to have occurred within less than a century after initial contact. A critical aspect of this research, initiated in this chapter and continued throughout the remainder of the report, is the linkage of ethnohistoric and archaeological data, that is, the development of warranting arguments, or arguments of relevance, specifically indicating how information contained in ethnohistoric accounts can be used in the analysis of archaeological data.

Archaeological Investigations

Following the ethnohistoric review, evidence for chiefly cycling behavior from the late prehistoric archaeological record of the Southeastern United States is presented in Chapter IV. Much of the chapter reviews procedures by which developmental change in Southeastern chiefdoms has been examined archaeologically, specifically as this relates to the study of cycling behavior in these societies. The causes and operation of cycling behavior are then examined in detail with archaeological materials from across the region, with particular attention to three particularly well-documented cases associated with the Cahokia, Moundville, and Coosa chiefdoms. A series of phase distribution maps are then presented, encompassing the region at differing periods, specifically at A.D. 900 to 1100, A.D. 1250 to 1300, A.D. 1400 to 1450, and A.D 1540, indicating that the emergence, expansion, fragmentation, and collapse of chiefdoms and the occupation and abandonment of large areas was commonplace. The advancement of specific archaeological correlates of propositions about the causes and operation of cycling in chiefly societies form a primary objective of this study, and provide the analytical framework by which the process may be examined with archaeological materials from specific areas.

The Archaeological Test: Mississippian Political Evolution in the Savannah River Basin

The remaining sections of the study comprise an empirically grounded examination of chiefly cycling behavior in the South Appalachian area. The investigation focuses on sites and assemblages from the Savannah River basin of Georgia and South Carolina to delimit causes behind the emergence, expansion, and fragmentation of local Mississippian polities, a process occurring within a larger regional framework of organizational cycling between simple and complex chiefdoms. The selection of the Savannah River basin was dictated, in part, by the existence of fairly dramatic evidence for chiefly cycling in the archaeological record from this area. In brief, evidence accumulated to date and summarized in the present study indicates that a number of chiefly societies rose and fell in this area from ca. A.D. 1100 to 1450. After A.D. 1450 virtually the entire basin, which was densely occupied throughout much of prehistory, and by progressively more complex chiefdoms from ca. A.D. 1200 to 1450, was precipitously abandoned. Only after ca. 1650, some two hundred years later, did native groups return to the area. The investigations are directed toward documenting the earlier patterns of cycling that culminated in the final abandonment, and attempting to resolve reasons for these changes.

The analysis proceeds in three parts. Chapter V presents an overview of Mississippian archaeological research conducted to date in the Savannah River area, to introduce the reader to the sites, assemblages, and general kinds of evidence employed in subsequent analyses. Survey data from the basin, the results of excavations at individual sites, and the Mississippian cultural sequence in each part of the basin are presented. Chapter VI examines the question of chiefly cycling from a basin-wide perspective, focusing on sites and collections from over the entire drainage, with an emphasis on environmental factors, specifically how the formation and maintenance of buffer zones, and rainfall patterns might influence the political stability of Mississippian chiefdoms. In Chapter VII evidence for political change at individual sites within the basin is examined in detail, and then tied to events occurring over the larger, regional landscape.

The basin-wide analyses presented in Chapter VI were facilitated by the presence of extensive survey and excavation samples. Over 4000 prehistoric archaeological sites have been recorded from locations scattered throughout the Savannah River Valley, and several hundred of these have identifiable Mississippian components. Over 20 of these sites have been the subject of either intensive testing or large-scale excavation, including at 12 of the 15 mound sites known to exist in the basin. While many of the collections from the valley come from unsystematic survey coverage, several localities have seen intensive examination, complementing the opportunistic coverage. Taken together, the opportunistic and intensive survey data sets combine to produce a detailed picture of the kinds of occupations present in the basin during the late prehistoric era. The archaeological data are used to construct an overview of changing Mississippian settlement patterning and political structure within the basin at 50- and 100-year intervals over the approximately six-century span of prehistoric Mississippian occupation (ca. A.D. 1000 to 1540).

From this empirical base, the causes of the political changes that are observed are evaluated using the propositions about chiefly cycling behavior advanced in Chapters II through IV. Environmental factors that may have constrained events, specifically regional physiographic structure and climate, are examined in detail. Artifact distributions are used to evaluate Mississippian land-use practices, specifically how buffer zones were formed and maintained. Through analyses of bald cypress dendrochronological data, moisture conditions over the period of Mississippian occupation were used to model crop productivity and storage patterns, which were then compared with events observed in the archaeological record from the basin.

In Chapter VII events at specific sites within the basin are examined in detail, with an emphasis on evidence for political or organizational change. The kinds of data that are brought to bear on questions of chiefly cycling include evidence for changes in domestic and public architecture, elite and commoner mortuary behavior and health, and settlement and subsistence practices. The record from these individual sites fits into a larger pattern of change occurring throughout the drainage and over the surrounding region. How these analyses shed light on chiefly cycling occupies the remainder of the volume, both in chapter VII and in the conclusions.

Cautionary Note

Although employing a broad theoretical and analytical perspective, the research summarized in this volume has been prompted by a particularly intriguing case from an area where, fortuitously, a considerable body of evidence exists. The focus for this research is understanding the nature and causes of cycling behavior in chiefdoms. On a more general level, the research is concerned with how and why complex societies emerge and evolve. These are no small questions with which to approach the study of prehistory, and the present study makes no claim to presenting definitive answers. It should, however, offer some insight into and understanding of what is meant by chiefly cycling behavior, how the process operates, and how it may be explored using archaeological, ethnographic, and ethnohistoric data.

Cycling is a common and widespread phenomenon in chiefdom societies, and appears to be the rule rather than the exception, being a process that tends to preserve rather than eliminate chiefly structures in the long term. The process is intelligible and amenable to study and can be addressed with data from a range of sources. By focusing on patterns and processes of developmental change, chiefdoms may be seen in their own terms and not merely as a developmental stage between societies of lesser and greater complexity, such as bands and states. Adopting such a perspective should thus lead us to a better understanding of this form of political organization and structure. Questions of change within forms can be as important as analyses of change between forms in the study of cultural evolution.

CHAPTER II.

FACTORS PROMOTING STABILITY AND CHANGE IN CHIEFDOM POLITICAL STRUCTURES

Introduction

This chapter evaluates factors producing organizational cycling in chiefdom societies. Specific questions that are examined include what is meant by cycling behavior and its underlying causes. The discussion that follows is thus divided into two parts. The first part focuses on a definition of and evidence for cycling in chiefdom societies, while the second part deals with reasons why the process occurs. The definition for cycling that is advanced centers on changes in the number of administrative or decision-making levels in the organizational hierarchy. These, it is argued, typically fluctuate between one and two levels above the local community as simple and complex chiefdoms come and go over a landscape. While more and less complex social formulations are examined, the focus for the present research is on developmental processes operating within chiefdom societies themselves and only to a lesser extent on processes leading to the emergence of social inequality or state-level societies. Cycling is an integral part of chiefdom political systems and, hence, must be understood in terms of properties inherent in or shaping chiefdom organizational structures. That the study of such processes can inform on more general evolutionary questions such as the origins of social inequality or the emergence or collapse of state-level societies is understood, but not primary to this work. Evolution between societal forms or stages defers, in this study, to an examination of developmental processes within a given organizational form, the chiefdom.

The causes of cycling behavior in chiefdoms are complex and multivariate, requiring the evaluation of a wide range of data. Specific factors that are examined in this study include societal evolutionary and developmental histories; the strength of ideologies sanctifying chiefly authority; the potential for conflict when matters of succession to leadership, population growth, territorial maintenance or expansion, and/or the incorporation of outsiders arise; the ability of chiefdom organizational hierarchies to accommodate stress brought about by social and/or ecological perturbations, such as warfare, crop failure, exchange network collapse, or increasing pressure on subsistence resources; the ability of chiefdom administrative structures to handle changes in information load; the degree to which the elite maintain control over subsistence production as well as access to non-utilitarian luxury or status-marking prestige goods, and the position of individual polities in prestige goods exchange networks; and the impact of developments in other societies, both those in neighboring areas and over much larger regions.

The arguments and analyses of cycling contained in this study thus incorporate a number of lines of evidence and reasoning. Such an approach accommodates concerns about the need for the falsification of one or more competing hypotheses, a procedure that underlies traditional scientific method. It attempts to consider and evaluate alternative explanations for the phenomenon under investigation, a complementary aspect of scientific reasoning. While the consideration and incorporation of a number of causal mechanisms for the explanation of cycling advanced here may be less aesthetically pleasing than arguments based on one or a few monocausal 'prime-movers,' it gives a more accurate representation of the forces in play.

The Relationship of Cycling to the Chiefdom Concept

A number of definitions of what is meant by a chiefdom have appeared in the literature, most of which emphasize the nature of leadership and organizational structures. Thus, to Service, chiefdoms are:

> redistributional societies with a permanent central agency of coordination. ...The most distinctive characteristic of chiefdoms as opposed to tribes and bands is... the pervasive inequality of persons and groups in the society. It begins with the status of the chief as he functions in the system of redistribution. Persons are then ranked above others according to their genealogical nearness to him. Concepts involving prescriptions, proscriptions, sumptuary laws, marriage rules and customs, genealogical conceptions, and etiquette in general combine to create and perpetuate this sociopolitical ordering. ...the rise of broad strata as well as particular social positions, all of unequal rank, are characteristic of chiefdoms [Service 1971:134, 144-145, 159].

Service's views on the importance of redistribution are no longer widely held. The institution as defined does not occupy a central role in most chiefdom societies, primarily because local communities almost invariably are autonomous in subsistence production (Earle 1977:227, 1978:181, 1987:292). Nevertheless, his general characterization of these societies as predicated on genealogically sanctioned leadership structures appears valid and, as we shall see, is critical to understanding cycling behavior.

Instead of generalized redistribution, tribute mobilization and limited redistribution of goods to lesser elites is now recognized as characteristic of elite/commoner interaction within chiefdom societies (Earle 1977:225-227; Peebles and Kus 1977:425-426; Spencer 1987:369; Steponaitis 1978:428; Welch 1986; Wright 1984:45). Chiefs typically exact tribute to fuel their own ambition (usually centered on the maintenance or extension of their prestige and power) rather than for the benefit of society as a whole. Society-wide benefits resulting from this strategy, while very real, tended to be indirect and often unintentional. Redistribution, when it occurred at all, typically involved sumptuary items which devolved on lesser elites in a conscious effort to obtain and maintain their support.

Fried's arguments about social status and its relation to leadership structures in rank (or chiefdom-like) societies are instructive and complement Service's views to some extent. In these societies:

> ...positions of valued status are somehow limited so that not all those of sufficient talent to occupy such statuses actually achieve them. Such a society may or may not be stratified. ...One of the major developments is the emergence of a clearly distinguished descent principle requiring demonstration of relationship. The basic technique of accomplishing this is the specific genealogy which, at least in theory, specifies all consanguinal ties and many affinal ones... Given such forms of grouping and the device of the genealogy, it is possible to develop a hierarchical arrangement of kin such that, for example, proximity or distance to a particular ancestor becomes significant. ...It might be better to say that what must be known is the distance of relationship between any member and the highest ranking person of his generation [Fried 1967:109, 116, 126].

Stratified societies, which include more complex chiefdoms, are those "in which members of the same sex and equivalent age status do not have equal access to the basic resources that sustain life" (Fried 1967:186). Chiefdoms are rank societies with essentially two social strata, consisting of the chiefly elite and commoners. The extent of the differences between these two strata in individual chiefdoms varies considerably and appears to be scale dependent, that is, related to the size and complexity of the society in question (Feinman and Neitzel 1984:57). Within the elite, genealogical distance from an apical ancestor, or as Fried would have it, the current ruler, has a great deal to do with determining an individual's chances of succeeding to the chieftainship. Because many individuals can succeed to power, and because institutions regulating succession are weak, competition for chiefly authority is widespread.

Crucial to the operation of a chiefdom is the coordination of activities in two or more communities, something that is perhaps the single most important responsibility facing a chief. The power and authority of a chief, in fact, can be measured in reference to the number of communities under his direct or indirect control. The importance of this has been acknowledged by a number of authorities. According to Carneiro, for example, the emergence of chiefdom societies represents:

> ...the first transcending of local autonomy in human history. With chiefdoms, multicommunity political units emerged for the first time. ...The emergence of chiefdoms was a qualitative step. Everything that followed, including the rise of states and empires, was, in a sense, merely quantitative [Carneiro 1981:37-38].

A similar view is held by Earle, who has focused on the nature and scale of leadership roles in these societies. Thus chiefdoms are:

> ...regionally organized societies with a centralized decision-making hierarchy coordinating activities among several village communities. Polities vary in size from simple chiefdoms integrating populations of perhaps a thousand to complex chiefdoms with populations in the tens of thousands [Earle 1987:288].

For Carneiro and Earle the emergence of chiefdoms represents the emergence of multicommunity political units under the control of a hereditary decision-making group or elite. One approach to the study of cycling behavior, as we shall see, examines the number and kinds of communities under a central authority and the ways in which they are tied together.

Care must be taken to avoid reifying the chiefdom category, however, or imposing too narrow an interpretation on the concept. Recent analyses have shown the vulnerability of monolithic definitions predicated on factors such as redistribution, population size, or degree of stratification, and have documented the considerable variability that characterizes these systems. Uncritical use of evolutionary stage formulations, furthermore, constrains analyses of variability, directing research effort towards typological classification and away from evolutionary or processual concerns (Earle 1978:227, 1987; Feinman and Neitzel 1984:40-45; Friedman and Rowlands 1977:201-206; Price and Brown 1985:4-5; Renfrew 1974:72-73; Spencer 1987:379-383; Steponaitis 1981:320-321; Upham 1987:346-348; Wenke 1981:84-87; Wright 1984:41-42). The chiefdom concept is thus currently seen as a useful if somewhat overdrawn heuristic device, readily indicating the general kind of society under investigation and providing a framework about which information and research can be organized. When working with particular cases within the category, however, care must be taken to document their characteristics and to avoid the incautious acceptance of the assumptions underpinning the definition. Stage classifications are useful only if classification is viewed as a beginning rather than the end point of research.

Some of the most recent definitions of the chiefdom have combined organizational and scalar measures. To Wright, the chiefdom represents the development of hereditary elites maintaining control apparatuses extending over a series of communities and the widespread emergence of groups of people having unequal access to resources. In his view, a chiefdom is characterized by:

> one generalized kind of political control. ...Simple chiefdoms are those in which such control is exercised by figures drawn from an ascribed elite subgroup; these chiefdoms characteristically have only one level of control above the level of the local community. ...Complex chiefdoms characteristically cycle between one and two levels of control hierarchy above the level of the local community... such sociopolitical entities [are characterized by] a chiefly class or nobility, members of which control generalized, polity wide decision making [Wright 1984:42-43].

This approach incorporates evolutionary cycling as a basic characteristic of chiefdoms, specifically shifts between levels in an idealized information processing and management control hierarchy. The concept of control hierarchies and their relation to changes in organizational complexity has seen considerable prior investigation (Flannery 1972; Johnson 1973:1-12, 1978, 1982; Wright 1969, 1977:381-382, 1984:42-44; Wright and Johnson 1975). Most of this work has been directed to understanding processes behind the emergence and evolution of state societies, with somewhat less emphasis on the actual operation of chiefdoms themselves (but see Earle 1987, 1989; Wright 1984, 1987 for a recent change in this perspective). The definition of cycling used in this study is drawn from this foundation.

A Definition of Cycling in Chiefdom Societies

Cycling in chiefdom societies is defined as the transformations that occur when administrative or decision-making levels within the societies occupying a given region fluctuate between one and two levels above the local community. Cycling, as defined here, is thus the recurrent process of the emergence, expansion, and fragmentation of complex chiefdoms amid a regional backdrop of simple chiefdoms. Less common occurrences considered within this general problem, but not the primary focus of the current research, are the changes that occur when chiefdom-level organization collapses completely in a locality or region (i.e., changes from one or more to no levels of control hierarchy), or the emergence of state societies, which are characterized by the presence of three or more level of control hierarchies (Johnson 1973:10; Wright and Johnson 1975:267).

The adoption of a regional perspective is critical to the investigation of cycling. Changes in the number of decision-making levels in the chiefdoms within a given region are rarely concurrent. Chiefdoms rarely arise and fall in precisely the same location or with the same periodicity. Instead, these societies typically expand or contract at the expense of or because of the actions of other chiefdoms. Centers of power shift or rotate over the landscape, as first one community and than another assumes prominence. It is this regional pattern of emergence and decline of complex chiefdoms that is of interest and comprises what is meant by cycling behavior, necessitating a broad geographical perspective.

Further clarification is necessary as to what is meant by an administrative or decision-making level, the basic element of a control hierarchy. Following Johnson, and using terminology derived from information theory, each level may be defined as a vertical control unit, specifically:

> An organizational unit specialized in providing integration among sources or lower-level vertical control units. ...[Sources are] the minimal organizational unit under consideration. Types of source units may include territorial units, population units, residence units, activity units, etc. [Johnson 1978:89].

Individual communities comprise the basic source units employed in the analyses of chiefdom political evolution conducted in this study. Thus, a chiefdom with a single level control hierarchy, or one decision-making/administrative level, is characterized by one level of control above the village level. This pattern is typical of simple chiefdoms. Complex chiefdoms are societies with two levels of control above the basic community (Steponaitis 1978:420; Wright 1984:42-43). These control apparatuses are assumed to be amenable to detection through traditional settlement hierarchy analyses (Chapter IV). The kind of variability that can be expected in chiefdom social forms is illustrated in Figure 1.

To provide additional emphasis on what is meant by a decision-making or administrative level, Flannery's (1972) description of social control apparatus warrants mention:

> A simple human ecosystem ...consists of a series of subsystems arranged hierarchically, from lowest and most specific to highest and most general. Each subsystem is regulated by a control apparatus whose job is to keep all the variables in the subsystem within appropriate goal ranges — ranges which maintain homeostasis and do not threaten the survival of the system. ...Normally, higher-order controls regulate only the output of lower-order subsystems, and not the variables kept in range by the latter. But should a lower-order control fail to keep its relevant variables within their ranges (as in the case of socio-environmental stress), the control apparatus on the next higher level of the hierarchy may be called into operation as a "back-up." Should all controls on the levels fail, the system is in trouble; it needs a new regulatory institution, and unless one evolves the system may collapse, or "devolve" to a lower level of integration. If a system is buffered in such a way that deviant variables in one subsystem take a long time to affect other subsystems, it is likely to be stable [Flannery 1972:409-411].

An explanation for cycling behavior, namely the failure of society to evolve a higher level regulatory or control unit, is subsumed in this argument. Administrative levels are thus seen as vertical control or integrative units that coordinate activity at the community level

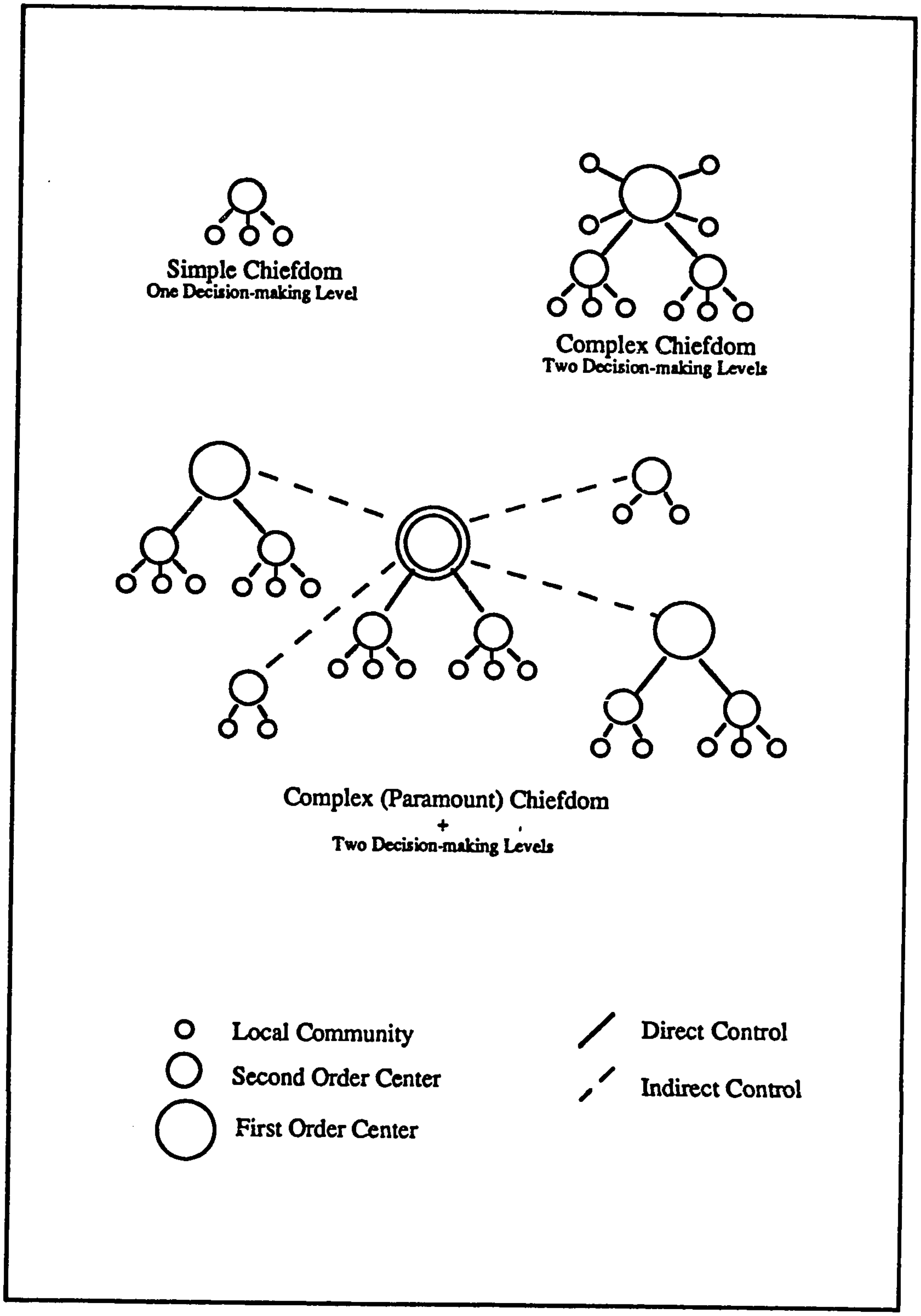


Figure 1. Simple and Complex Chiefdoms: Variability in Settlement and Control Hierarchies.

or in lower administrative levels in complex multicommunity societies, such as chiefdoms or states.

Decision-Making Levels and Patterns of Social Ranking

Managerial stress arguments, linking the emergence of hereditary social inequality and ranking to increased decision-making demands upon society, have become popular in recent years. Johnson (1978:101-102), for example, has examined this question in terms of information processing, arguing that the "development of ranking systems may be associated with increment in the number of information sources integrated on a societal level." A direct relationship between organizational size and complexity and number of decision-making levels has been documented cross-culturally (Johnson 1973:10-11, 1978; see also Carneiro 1967; Feinman and Neitzel 1984). How increased information processing requirements can lead to the creation of new social groups has been summarized by Earle:

> As polity scale increases, the number of decisions required by any node increases until it exceeds an individual's personal capacity to make decisions and requires an expansion in the hierarchy of decision-makers. In chiefdoms the number of levels in the hierarchy corresponds with the scale of the polity, although the exact relationship is affected by intervening variables [Earle 1987:289].

The emergence of ascribed or hereditary social statuses, in this view, is related to increases in information processing demands upon a society, with ranking systems a solution to the problem of defining, recruiting, and training a decision-making group.

While increased decision-making demands upon a society may indeed necessitate the development of patterns of social ranking, how such information-processing demands arose in the first place has remained incompletely explored. Traditional explanations have focused on efforts by early societies to achieve control over the natural environment, with popular trigger mechanisms including the construction and maintenance requirements of irrigation networks or the need to coordinate agricultural production over large areas. These kinds of explanation have been viewed with increasing dissatisfaction in recent years, since they leave out social or political dimensions generating change (Bender 1985; Clark 1987, n.d.; Marquardt 1988, 1989; Shanks and Tilley 1982, 1987; Shryock 1987). Accordingly, managerial stress theories have been modified in recent years to accommodate patterns of elite competition and interaction. In this view, increased information-processing demands arose from the competition between individuals for followers and, once elites were in place, from the need to maintain the loyalty of these followers, or to keep them in their place. Thus, while increased information-processing demands upon a society might force the development of new decision-making levels and social elites, the formation of such groups was part of a larger process through which individuals obtained and maintained power.

How competition between elites leads to membership in a given decision-making level, which in turn translates into patterns of social ranking, requires further discussion. Cordy (1981:220-221) has described how rank echelons come to form around decision-makers within a given level in an administrative hierarchy. Chiefly largesse in rewarding relatives, official overseers, and other assistants and retainers, quite simply, creates a group of people with a vested interest in the successful continuation of the system. These family, friends, and hangers-on are equated with the decision-maker and come to assume the same trappings of status. The formation of a new decision-making level thus leads to the creation of a new social rank echelon. Simple chiefdoms, in this view, may be seen as those with two hierarchical social rank echelons, commoners (dispersed throughout the chiefdom) and elites (located primarily at the chiefly center), while complex chiefdoms are those with three or more social rank echelons, encompassing commoners (again, dispersed throughout the chiefdom), lesser elites (located primarily at local centers), and apical elites (located primarily at the paramount center) (Cordy 1981:3-4).

Changes between decision-making/administrative levels in chiefdoms, or cycling, should thus be accompanied by changes in the patterns and general categories of social ranking, although the rate of formation or dissolution of social groups may vary from case to case.

Changes in administrative level leading to the formation or dissolution of rank echelons are also typically accompanied by changes in behavioral patterns between the members of these echelons. Differentiation occurs when higher-level decision-makers and their associates are increasingly physically and symbolically isolated from lower-level decision-makers, as part of a conscious strategy to emphasize and reinforce their authority. In simple chiefdoms, interaction between social groups is frequent and relatively unconstrained, while in complex chiefdoms there is greater social distancing, and access to resources such as food, clothing, housing, or luxury goods is more unequal. The formation of new administrative levels and their associated rank echelons, or the abandonment of levels and rank echelons already in place, is subsumed in the definition of chiefdom cycling behavior employed in the present study. Thus, cycling encompasses more than the establishment or loss of political hegemony, but includes changes in organizational structure. Given this background, it is appropriate to turn to an examination of evidence for the presence and causes of cycling behavior in chiefdoms.

Evidence for Cycling in Chiefdom Societies

Inspection of the global anthropological literature yields numerous examples of the rise and decline of chiefdoms, including the fluctuations between simple and complex chiefdoms that meet the definition of cycling used in this study. This same literature documents the regional scale at which the process operates, as centers of power shift back and forth over the landscape. The best evidence for the process tends to come from archaeological and ethnohistoric research, however, rather than ethnographies, since the latter rarely encompass sufficient temporal and geographic dimension.

In what is unquestionably the broadest examination of the general topic of sociopolitical evolution and its relationship to cycling behavior, Wright (1986) has examined the fluctuations in control hierarchies that occurred prior to and during the period of primary state formation in four areas of the world, in Greater Mesopotamia, the Indus Valley, Central Mexico, and Peru. Simple and complex chiefdoms persisted for centuries in these areas prior to state emergence, "with intense competition and much replacement of centers and no doubt of paramounts, but with little or no increase in sociopolitical complexity" (Wright 1986:357). State emergence occurred fairly abruptly in these areas, but only after a lengthy period of increasing competition and conflict between closely spaced complex chiefdoms.

Prestate developmental trajectories in these and other areas where state formation occurred have been the subject of intensive examination by a number of scholars, and evidence for cycling behavior has been widely noted. The emergence and development of chiefly centers and administrative hierarchies, and shifts in the locations of these centers of power, has been documented in areas as disparate as the Valley of Mexico (Parsons et al. 1982:316-331; Sanders and Price 1968), Oaxaca (Blanton et al. 1981, 1982; Fisch 1982; Flannery 1976; Flannery and Marcus 1983:53-64; Kowalewski et al. 1989), Peru (Wilson 1987), and Mesopotamia (Adams 1966:9-33, 1981; Johnson 1973:87-101, 1987; Pollack 1983; Wright and Johnson 1975), to cite a few of the many examples that have been brought to bear on this topic (see also reviews by Carneiro 1981; Earle 1987; Kohl 1987; Tainter 1988; Wright 1977, 1986).

Examples of archaeological analyses directed to documenting long-term chiefdom political developments in areas where primary states did not form have included studies in both Central and South America (Drennan and Uribe 1987; Helms 1979), Africa (Taylor 1975), Polynesia (Cordy 1981; Kirch 1984, 1986), and Western Europe (Champion et al. 1984, Champion and Champion 1986; Renfrew 1973, 1974, 1986; Renfrew and Shennan 1982; Shennan 1987). Ethnohistorical summaries documenting episodes of chiefly cycling are available from some of these same regions (Firth 1961; Goldman 1970; Helms 1979:38-69; Sahlins 1958, 1981, 1987; Steward 1946-1950; Steward and Faron 1959; Wilbert 1961). Finally, examples of ethnographic studies documenting events subsumed under the process of chiefly cycling include Leach's (1954) classic analysis of Kachin social structural variability, Turner's (1957) examination of the causes of fissioning in Ndembu society, and Petersen's (1982) analysis of fissioning in a Ponapean chiefdom. Other specific examples of cycling behavior, drawn from the archaeological and ethnohistoric literature of the Eastern Woodlands, are documented in the remaining sections of this study, as part of an examination of how and why the process occurs.

Elements of a General Model of Cycling in Chiefdoms

The following pages document conditions under which cycling behavior in chiefdom societies occurs. Factors producing organizational stability and change, or instability, in chiefdoms are the focus for this examination. Stability is here taken to mean the maintenance of a given level of organizational or administrative complexity, as measured by number of decision-making levels in operation. Change refers to fluctuations in decision-making levels and, hence, to the cycling process itself. Understanding cycling requires the examination of factors promoting both stability and change, however, since these are interrelated phenomena. That is, factors promoting organizational stability in chiefdoms tend to limit the possibility of change or cycling, while factors promoting organizational instability tend to promote its likelihood.

Developmental Trajectories

The developmental histories of chiefdom societies determine, to some extent, the nature of their responses to changes in the natural and cultural landscape, something that in turn affects their stability and propensity for cycling. The process by which chiefdoms emerge in a region particularly shapes their subsequent developmental history. The emergence of pristine chiefdoms has been the subject of considerable analysis and speculation, and a number of causal mechanisms have been advanced, including warfare, competition among elites, and arguments based on resource control and redistribution (Carneiro 1981:54-65; Fried 1967:191-223; Flannery 1972:402-418; Sahlins 1958; Service 1962/1971:134-143; Wright 1984:41-51). While precise explanations remain elusive, one thing is likely: however pristine chiefdoms emerged, they probably did so fairly gradually. Once present anywhere in a region, though, it is equally likely that the organizational form spread quickly.

The development of chiefly elites is unlikely to have occurred instantaneously, but instead probably took a fair amount of time, on the order of generations. Suggested mechanisms for this emergence is competition for control, by specific individuals, over access to strategic resources (Fried 1967:186; Helms 1979) or of prestige items useful for status enhancement and alliance formation (Bender 1985:58-59; Braun and Plog 1982:507; Helms 1987:67-70; Shennan 1982; Wright 1984:69). Helms has described how prestige goods could function to maintain the social order. In her view, such objects:

> are imbued with complex, multifaceted symbolism and thereby become exquisitely succinct encapsulations of social, political and ideological constructs. ...Consideration of the particular qualities and characteristics of symbolically relevant natural objects can help cast light on the existential and cosmological assumptions that validate so much cultural activity. ...[Prestige goods are] representative of the special qualities and activities of the elite, and [thus function in] ...active and passive expressions of rank and associated prerogatives [Helms 1987:67, 69, 70].

The development of an ideology of power or chiefly sanctity manifested in both objects and behavior is widely regarded as a critical aspect to the development of social inequality (Bender 1985:59; Wright 1984:69). The strength of this rationalizing idiom or appeal to sacred authority capable of legitimizing social inequality and its acceptance by all segments of a population should thus determine, to some extent, the degree of societal stability. Iconography and ancestor worship additionally combine to symbolize, and legitimize, the positions and aspirations of the participants in major sectors of chiefdom societies (see particularly Rappaport 1971, 1979a, 1979b for extended discussion of this point). The diverse symbolism, furthermore, served to accentuate and simultaneously mediate tensions in these nonegalitarian societies. Potential planes of social cleavage, centered around areas of greatest social tension, occur not only between elites and commoners in chiefdoms, however, but also between different factions among the elites themselves. Elite competition, in fact, was potentially extremely divisive, since elites tended to play off not only themselves, but also their retinues, including commoners, in their struggles with other elites. Competition of this kind, while ostensibly between individuals, had the potential to draw in all members of society. Chiefdom stability unquestionably depended on the degree to which these varying social tensions were mediated.

Resource control, alliance, and exchange networks, and supporting ideologies, emerged slowly and were in place in some form well before chiefdom organizational and control structures emerged. This pattern has been documented in the archaeological record of the Eastern Woodlands of North America, across Western Europe, and in wide areas of Central and South America. In all of these areas the existence of prestige-goods-based exchange networks preceded the emergence of recognizable chiefdoms by several millennia (Brose 1979; Champion et al. 1984; Flannery 1976; Flannery and Marcus 1983; Griffin 1967; Renfrew and Shennan 1982; Webb 1977; Winters 1968). Braun and Plog (1982) have suggested that such exchange and alliance networks emerged in tribal societies as risk-minimization strategies. The emergence of these networks, they argue, was directly linked to the emergence of sanctifying ideologies, an essential underpinning of chiefdom authority structures (see also Friedman and Rowlands 1977; Wright 1984).

Successful practitioners of strategies that led to long-term enhancement of group living conditions, in this view, might be accorded a measure of sanctity, and undoubtedly were more secure in their positions than less successful individuals. Degree of control over exchange thus came to be tied, in some cases, to the relative stability of authority structures. A pattern of gradual emergence thus characterizes pristine chiefdoms, and distinguishes them from secondary chiefly polities, which typically formed quickly in response to the existence and/or encroachment of other chiefdoms or more complex systems (Carneiro 1981:66; Sanders and Price 1968:132; Webster 1975:467). As a result, the presence of entrenched ideological mechanisms assisting in the maintenance of elite power particularly characterize pristine chiefdoms. Such mechanisms may not be present, or as effective, in secondary chiefdoms, which form as a reactionary process, and follow different developmental trajectories.

The formation of authority structures in pristine chiefdoms warrants further consideration, since the stability of these structures is closely tied with that of society in general. Wright (1984:69) has suggested that the development of sanctifying ideologies came about through patterns of elite competition:

> ...continued competition for alliance and offices among local ranking groups would weld such groups into a region-wide chiefly or noble class... such a process of competition should generate an ideology of chiefly sanctity [Wright 1984:69].

Friedman and Rowlands (1978:209-211) have discussed how this process might operate in some detail, focusing on the competitive exchange of valuables as a mechanism behind the development of rank differentiation. In their view, surplus extraction and wealth accumulation is transformed into personal status and power through redistributive activities such as feasting, which leads to the recruitment of supporters. The manipulation of marital alliances is coupled with this, creating asymmetrical dependency relationships between various groups or lineages, which translates into relative rank (see also Sahlins 1968:86-89). The group or lineage dominating "feast giving and affinal exchange [by virtue of its success] becomes identified with the direct descendant of the territorial deity" (Friedman and Rowlands 1978:211). As other lineages define their position in relation to this primary lineage, what were asymmetrical and temporary dependency relationships soon become permanent status differences.

As the members of the primary lineage assume increasing (direct as well as ideological) responsibility for the maintenance of community welfare, they also warrant increased gifts from the community, typically in the form of labor or surplus food. What begins as a moral obligation, however, soon becomes tribute given under threat of sanction, as the dominant lineage consolidates its position through the legitimized use of secular power. The dictation of what constitutes appropriate tribute leads to increasing control over primary production and the appropriation of surplus. Extralocal exchange of prestige goods, whose production is sponsored by subsistence surplus, soon comes under the same kind of control, as dominant elites make use of extralocal materials and social relationships to legitimize their positions of rank and sanctity. Centers of power controlling both production and exchange thus expand at the expense of those precluded from access to these networks (see also Helms 1979:31-32, 67ff).

How extended success at wealth accumulation and redistribution, and favorable marital alliance formation, translate into hereditary patterns of inequality between lineages remains unclear. In many ways these theories represent little more than an extension of the strategy whereby "big-men" rise to power, differing only in suggesting that long-term success legitimizes the transformation of individually achieved status into hereditary or ascribed status. Why such a process operates at all, and why it should be successful, is not fully considered. In particular, why should individuals and lineages compete with each other, participating in a process that eventually leads to marked patterns of social inequality? Lenski (1966:210), although referring to patterns of competition in simple states, has described the reasons for competition for positions of authority among elites in terms of personal self-interest:

> because of the great powers vested in it, it [i.e., leadership] was the supreme prize for all who coveted power, privilege, and prestige. To win control ...was to win control of the most powerful instrument of self-aggrandizement found in agrarian societies. ...struggles for power ...were usually between individuals and groups concerned far more with their own partisan advantage than with either the principles of distributive justice or the common good, except in those cases where private advantage and the common good happened to coincide. ...they were struggles between opposing factions of the privileged class, each seeking its own special advantage, or, occasionally, a small segment of the common people seeking political advantage and preferment for themselves [Lenski 1966:210-211].

The tangible rewards of belonging to the elite, or minimally achieving recognition and prestige from the elite, thus served as the means by which members of society competed with and in some cases suppressed each other, diverting attention away from what might otherwise be perceived as patterns of outright exploitation.

Reliance on coercive authority and the playing off or co-opting of rivals, however, are not effective ways of maintaining power because of the time and energy that must be spent keeping the population under control and extracting surplus from it. Hence newly emergent elites will devote considerable energy to legitimizing their rule, that is, to the creation of "an ideology which provides a moral justification for the regime's exercise of power" (Lenski 1966:51-54). In pristine chiefdoms, presumably characterized by a gradual process of emergence and the close equation of elite authority with sanctity, such an ideology is likely to already be in place. The maintenance of ideological structures by social elites, it should be stressed, while unquestionably self-serving, was also something thought by exploiters and exploited alike to be essential to the material well-being of society.

Degree of public support for and participation in ritual activity appears to be an effective measure of the strength of a society's ideological structures. Ritual is a routinizing social mechanism which, by virtue of stressing norms of behavior and the importance of group unity in behavior, exposes the abnormality of disruptive forces and, ideally, leads to their dissipation (Rappaport 1979a). The strategy works effectively only in groups where long-established ties are already present, however, and are hence amenable to reinforcement through traditional behavior (Turner 1957:195, 316). Where ritual behavior was strongly supported society itself tended to be stable. Legitimizing ideologies thus take time to develop, but once in place can provide strong support to chiefly decision-making hierarchies. While something of a truism, sociopolitical stability in any society ultimately depends on the permanence of and public or institutional support for organizational structures.

It can thus be argued that the stability of chiefdom societies, at least in part, is directly related to the nature of their emergence and subsequent development, particularly the process by which the elite arrive at and maintain their positions of authority. Significant differences should be evident in the developmental trajectories, social hierarchies, and legitimizing ideologies of pristine as opposed to secondary chiefdoms. The relatively rapid emergence of secondary chiefdom societies, for example, means that there is little time for a rationalizing idiom, an ideology of chiefly sanctity, to develop. Chiefly authority in these cases may be more likely to reside in coercive or cooperative measures. That is, political authority in secondary chiefdoms, at least initially, may have to be maintained through overt use of secular power or force, probably to a greater extent than in pristine chiefdoms, or it may have to rest on cooperative agreements between the participating constituents. As such, these authority structures are likely to be fragile and of fairly short duration, unless they manage to survive until a legitimizing ideology can be set in place. Finally, leadership positions in secondary chiefdoms may have been less likely (initially) to be hereditary, since prowess in warfare or decision-making, rather than membership in a sanctified elite, was probably the most important criterion for social advancement.

Several characteristics are thus postulated as differentiating pristine from secondary chiefdom societies: (1) slow versus rapid development, (2) secure versus less secure ideological structures, (3) the presence of well-established genealogically sanctioned authority structures, as opposed to weakly sanctioned cooperative or coercive authority structures, and (4) hereditary elites and a restricted system of social advancement, as opposed to a more open social system, where authority is probably based to a fair degree on personal ability. To the extent that the presence of pristine and secondary chiefdoms can be identified, the viability of these characteristics should be examined. Coupled with this should be an examination of changes in the nature and strength of ideological structures over time. The emergence and expansion of chiefdoms thus warrants careful attention, and can be useful to the development of broader anthropological theory.

Mechanisms for Maintaining Elite Authority Structures

The stability of chiefdom societies, we have seen, is closely tied to the nature and effectiveness of ideological and secular mechanisms used to maintain and legitimize elite authority structures. These factors also shape the character and intensity of political competition, and are directly related to both the size and time depth of chiefdoms in a region. The relationship and importance of 'sacred' (i.e., consensual, ideologically based) as opposed to 'secular' (i.e., based on coercive authority, use of force) mechanisms for maintaining power in chiefdoms, for example, has been shown to be scale dependent by Sahlins (1958:11-12). In Polynesia, appeal to sacred authority as a means of maintaining power was associated with fairly simple chiefdoms such as Sahlins' types IIb or III societies (i.e., Tikopia, Marquesas, Pukapuka, Ontong Java). The ability of elites in these societies to initiate warfare or take other strong action in defense of their own position, and specifically to subordinate rivals, was severely restricted, or at least subject to public consensus. Authority in more complex chiefdoms, such as Sahlins' types I or IIa societies (i.e., Hawaii, Tonga, Samoa, Mangareva), in contrast, was largely based on secular power, specifically the use of force, regardless of the underlying ideological framework. In these societies the use of force as an means of maintaining elite prerogatives and controlling rival factions was more prevalent.

Comparable relationships are inferred by Goldman (1970:20-27) in his tripartite power-and-status-based Traditional, Open, and Stratified classification of Polynesian chiefdoms. In Traditional chiefdoms, which are typically very small in size and complexity, elite authority is ideologically based and, while succession tends to be secure, leaders themselves are quite weak. In more complex Open chiefdoms, power relationships predominate, and competition for chiefly positions is intense, creating an unstable social landscape. Finally, in complex Stratified chiefdoms, status and power relationships tend to be fairly evenly balanced, leading to more stable conditions. In evolutionary terms, the first Polynesian chiefdoms are assumed to resemble Traditional societies, with later Open or Stratified chiefdoms evolving from this type. Shifts between these forms were common, particularly between Open and Stratified societies among the more complex Polynesian chiefdoms (Goldman 1970:317). The measure of cycling used in the present study, fluctuations in administrative or decision-making levels, subsumes the changes in status levels advanced by Goldman as indicative of this process (given the equation of administrative levels with social rank echelons) and, it is argued, is more readily identifiable archaeologically (see Chapter IV).

Similar scale-dependent relationships between various measures of chiefly power and authority and group population size have been noted by Feinman and Neitzel (1984:67) in a cross-cultural analysis of 63 New World prestate sedentary societies. In their study, a moderate correlation was observed between elite authority, measured as the number of functions under chiefly control, and maximal community size, as well as a strong correlation between the number of elite status markers and total group population

(Feinman and Neitzel 1984:69). Strong chiefly leaders exerting direct control over a number of societal functions occurred almost exclusively in large, complex chiefdoms that were typically characterized by two administrative levels above the local community. Weak leaders, in contrast, occurred in smaller, less complex societies typically characterized by fewer administrative levels.

Recognizing the ideological and secular bases of chiefly authority, and diachronic or evolutionary trends in these authority structures, is thus an important aspect of any analysis of cycling behavior. Following Sahlins and Goldman, it is suggested that in the first chiefdoms in a region, or in fairly simple chiefly societies at any time, appeals to sacred authority as a means of justifying elite prerogatives will be more important than the use of force, or the imposition of secular authority. Factional competition in these societies is likely to be minimal, and succession fairly peaceful. The opposite pattern is suggested in more complex chiefly societies, or in regions where chiefdoms have been in place for some time. In these societies factional competition is likely to be intense, and succession violent.

Attributes of the cycling process follow directly from this. That is, changes in the number of decision-making levels in a chiefdom should be accompanied by changes in ideological and secular authority structures, with one sphere likely increasing or decreasing in importance at the expense of the other. In the Southeastern United States a decline in the sacred/ideological spheres is indicated over the course of the Mississippian that may reflect such a trend. Major mound-building activity and the highly developed mortuary ceremonialism and iconography typified by the Southern Ceremonial Complex, for example, peaked by the 13th century and declined thereafter throughout the region. This may reflect a change in authority structures from societies where elite power was based in large measure on appeals to sacred authority to societies where secular authority was pervasive (see Chapter IV).

Tribute Mobilization and Control of Surplus

The presence of a labor force producing an exploitable surplus and a system for its efficient collection and storage was also critical to the maintenance of stable chiefly authority structures. While elites competed with each other for followers, the ultimate purpose of this competition was obtaining control over societal wealth, which was typically defined in terms of surplus production. In chiefdom societies surplus production was almost invariably defined in terms of subsistence products (Lenski 1966:44-45; Orans 1966; Sahlins 1958). Food surpluses produced by commoner populations, beyond providing for the subsistence needs of the elite, also fueled the prestige goods production and exchange networks that legitimized their power and authority (Earle 1978: 225-227; Flannery 1972; Peebles and Kus 1977; Steponaitis 1978, 1981; Welch 1986). The stability of elite administrative structures thus directly depended on the regular production of surplus food and other goods, the efficiency by which these goods were collected or 'mobilized' by the elite for their own uses, and the storage technology and other mechanisms in place to overcome production shortfalls or other types of losses.

Degree of control over surplus (and the labor producing it) is thus one method of defining power and status relations in chiefdoms, and the competition and conflicts engendered by rival elites seeking such control are a primary cause of organizational instability. Lenski has described the linkage between power, prestige, and surplus by noting that the generation of surplus:

> will give rise to struggles aimed at its control. ...[and that] power will determine the distribution of nearly all of the surplus possessed by a society. ...Prestige is largely, though not solely, a function of power and privilege, at least in those societies where there is a substantial surplus [Lenski 1966:44-45].

Such a pattern is evident in the ethnographies and histories of chiefdoms from around the world. Control of surplus productivity was widely perceived by members of these societies as the way to achieve both prestige and power. Tribute mobilization for the maintenance of chiefly prestige and power characterized Hawaiian society (Earle 1978:195; Kirch 1984:260), for example, and a comparable strategy was found to operate in Panama, where chiefs extracted tribute for their own political ends, rather than for the benefit of society as a whole (Helms 1979). The extent of control an elite has over societal surplus and prestige goods may thus be viewed as a direct measure of their power and prestige, and of social stratification itself.

Organizational stability not only depended on the extent to which elites could successfully create and then appropriate surplus production, but also on how well or effectively they put this surplus to work enhancing their position. Where elite authority was weak, care had to be taken to avoid alienating producers. If unusually high levels of surplus production were appropriated with little or no recompense, even if only in the form of temporarily conferred prestige, commoners might be left with little or no incentive to produce, and might actively encourage or support the rebellious activity of rival elites. Among the Lozi, a complex chiefdom or simple kin-based state in Barotselande, Zimbabwe, having a reputation for generosity rather than despotism was the mark of a successful chief (Gluckman 1951:14). This has been widely noted throughout sub-Saharan Africa and in chiefdom societies in general, and appears to have been an essential strategy if a chief was to maintain power. A reputation for generosity was thus an effective way of maintaining power while simultaneously checking the ambitions of potential rivals. Where elite authority was securely grounded, particularly where the chief wielded strong coercive power, surplus extraction was undoubtedly greater and concern with alienating producers less important.

The extent of an individual elite's power was thus measured, to some degree, by his position in the surplus appropriation network. Tribute or surplus mobilization in chiefdoms typically takes the form of a flow of goods such as food stuffs, raw materials, or craft products towards a center, and a flow of services such as religious or ceremonial products, together with a lesser flow of essential or desired commodities back (Lenski 1966:206). The flow in both directions was created, maintained, and manipulated by the elite to further their own personal and political agendas (Betzig 1988a). Tribute was sometimes viewed as something of a property right, an obligation between individuals or groups that might be passed on from generation to generation.

While tribute was probably perceived as a social duty in simple chiefdoms, and freely given, in more complex chiefdoms it was often viewed as a burden, in some cases ruthlessly exacted. Tribute mobilization in complex chiefdoms was a primary task of the lesser elites, who could raise the threat of divine sanction or secular punishment, or both, to assist them in their efforts. In Tikopia, where chiefly authority was quite limited, an unpopular chief might find his tribute cut off (Firth 1936:341), while among the Lunda, a complex central African society, 'wars of extermination' against 'recalcitrant tributaries' are reported (Capello and Ivens 1882, cited in Turner 1957:5).

Redistribution of tribute was typically according to rank and kinship, and was a visible method by which the chief affirmed the relative status of his supporters (Gluckman 1951:40; Betzig 1988a). Chiefly redistribution of sumptuary goods was thus a mechanism regulating the tributary economy and maintaining the prestige of elites at all levels (Peebles and Kus 1977). Redistributional failure, brought about through internal factors such as declining surplus production or rebellion, or external factors such as warfare or the collapse of interregional exchange networks, sometimes led to organizational change that might be marked by violence. Reorganization, if accompanied by a change in administrative or decision-making levels, would constitute an example of chiefdom cycling behavior. This is thought to have happened in Formative Oaxaca, where a decline in imported obsidian occurred prior to an episode of destruction at

Fabrica San Jose, a local chiefly center (Wright 1984:46). A similar set of circumstances are documented at the site of La Libertad in Chiapas, a Middle Preclassic chiefdom that collapsed after falling out of a long distance trade/prestige goods network (Clark 1987, 1988:197-200).

Patterns of Expansion and Population Growth

The stability of chiefdom societies and hence the propensity for cycling behavior is also closely tied to demographic processes of population growth and decline. Once a chiefdom (primary or secondary) formed in an area it should have tended to grow, if for no other reason than because of the adaptive advantage belonging to such a society likely conferred upon its members. Carneiro has described this process of expansion in militaristic (conflict theory) terms, with warfare and conquest the posited mechanisms behind the reproduction and spread of chiefdom organizational structures. Biological (i.e., reproductive) success is implicit in his argument:

> Once chiefdoms begin to form in a region, the process proceeds rapidly. The military advantage that size alone confers on a society means that even a minimal chiefdom will have a significant edge over its neighbors if they are still independent villages. As a result, it will not be long before autonomous villages as such will cease to exist. Either they will be defeated by and incorporated into one of the existing chiefdoms or they will join forces with other such villages in a defensive alliance, which will itself tend to become a chiefdom [Carneiro 1981:66].

Chiefdom social organization, in this view, spread either through conquest (i.e., was imposed from outside) or in self-defense (i.e., reorganization occurred in response to a perceived external threat). Although this perspective tells us little about the process by which chiefdoms emerged, it does support the idea that once the form appeared, it spread quickly. Interaction theories of chiefdom emergence, such as those centered on regional patterns of elite competition directed to the use of external goods to increase local or internal prestige, likewise posit chiefdoms emerging contemporaneously over large areas, albeit for much different reasons (Clark n.d.; Clark and Blake 1989; Renfrew and Cherry

1986). The initial appearance of a chiefdom in a region, for whatever reason, is thus likely to have triggered the rapid emergence of other such polities.

Once a regional backdrop of simple chiefdoms was in place, the stage was set for cycling behavior, exemplified by the formation and fragmentation of complex chiefdoms. This process had a considerable impact on regional population distributions and growth rates. As rival elites competed with one another for followers, dramatic population shifts might have occurred as people were incorporated into one successful polity after another. Population nucleation around central communities may have also occurred, as elites sought to keep both commoners and potential rivals under their direct control, as well as more readily appropriate any surplus they might produce. The emergence and cycling of chiefdoms over a region may have also prompted considerable population growth, assuming the advantages of successful chiefly decision-making translated into greater relative reproductive success.

A critical question to be considered is how population levels were maintained in chiefdom societies. This question has two parts, focusing on how people were distributed over the landscape, and how reproductive rates were maintained within these groups. Relationships between organizational complexity and population size and distribution receive further attention below. Reproductive behavior in chiefdom societies is somewhat more difficult to address. Within these societies, were population policies or control mechanisms in place, affecting specific groups, and if so, how did they operate (Betzig 1986, 1988b; Dickemann 1979; Nag 1962)? Were differing reproductive strategies in use among commoner and elite subgroups, for example, and what were the long-term implications of these strategies? Chiefly prerogatives may have been jealously guarded, for example, to the point where reproductive strategies designed to minimize the potential number of competitors, or maintain elite/commoner population levels within certain parameters may have been in operation. This might have been implemented via restrictions on polygyny, or through deliberate strategies of infanticide or murder. Alternatively, little or no formal population control mechanisms may have been in place.

Elite population growth, in the absence of culturally mediated leveling mechanisms or population policies constraining growth, may have been a primary cause of expansion in chiefdom societies. There is little doubt that reproductive advantage accrued to elite members of most human societies (Betzig 1982, 1986; Betzig et al., ed. 1988; Chagnon and Irons, ed. 1979; Turke and Betzig 1985). Elite polygyny, often in conjunction with a pattern of (typically) monogamous marriage among commoners, is frequently noted in chiefdoms (Betzig 1986; Clignet 1970; Murdock 1967). Elites in these societies, having greater access to resources, including food, would have typically enjoyed greater reproductive success than commoners. That is, given better nutrition and a more protective and healthy social environment, children of elites would have enjoyed a higher survival rate than the children of commoners, other things being equal. This proposition is well documented in the ethnographic and historic record (e.g., Betzig 1986; Boone 1988; Chagnon and Irons, ed. 1979), and undoubtedly occurred in prehistoric societies as well. Paleoanthropological and mortuary analyses of skeletal series from such societies should be able to confirm this and, importantly, the magnitude of differential reproductive success (Chapter IV).

The very success of elites in wielding power, when translated into greater reproductive success, would have led to increasing numbers of competitors for power over time. Elite population growth is thus likely to have been a cause of both expansion and instability in chiefdoms. The children of elites, innocuous while young, would grow up to be contenders for power, and promote either political instability or expansion. Dispersing these possible rivals through conquest (i.e., imposing them as administrator/elites over conquered groups), or through advantageous marital alliances, would be one way to reduce their potentially destabilizing influence. Patterns of geographic expansion within chiefdoms, and of competition between chiefdoms as a result, may have been brought about by a need to disperse potential chiefly contenders and maintain the prerogatives of elite lineages.

The proportion of elites in a given population may prove to be an effective indicator of overall societal stability. That is, there may be a relationship between the numbers of elites and commoners that translates into greater or lesser stability. Undercontrol or overcontrol of society, prompted by too few or too many elites, in such a view, may be destabilizing. Unfortunately, paleodemographic studies of elite/commoner population trends in chiefdoms and their relationship to societal stability are rare, and typically focused more toward overall rural/urban or village/center population ratios (Butzer 1980; Drennan 1987; Hassan 1981:231-257; Steponaitis 1978, 1981; Upham 1983:232). Steponaitis's (1981) analyses suggest that in the neighborhood of 20% of the total population of complex Mesoamerican chiefdoms may have been supported through tribute mobilization. That all of these people belonged to the elite is highly doubtful; many people were undoubtedly employed in non-subsistence tasks (i.e., craft production, goods exchange). Studies of the actual numbers of elites in chiefdom societies, and the relationship of these numbers to patterns of societal stability, remain to be undertaken. The governing/elite class in historic and modern states rarely exceeded 2% of the total population, and may have been closer to 1% (Lenski 1966:219). Whether comparable figures apply to chiefdom societies remains unknown, but is beginning to be explored.

Upham's (1983:232) study of the burial population at Nuvaqueotaka, a pueblo with about 1000 rooms, found that graves characterized by extensive prestige-goods comprised 2% of the total sample, with another 5% containing lesser quantities of these same materials (Lightfoot 1987:45). Elites thus may have made up from 2 to 7% of this population, assuming the interpretations about the level of sociopolitical complexity present at the site are indeed accurate. Peebles (1987:27-28), in an analysis of burials from the Moundville chiefdom in west-central Alabama, showed that elite population levels apparently grew from approximately 1% of the total population early in the history of the chiefdom, during the Moundville I phase, to around 5% during the Moundville II phase two centuries later. Whether there is an upper limit to the number of elites a chiefdom society can have and remain stable is unknown, but there is unquestionably an upper limit to the number of non-food producers in any society. It is possible, given this, to suggest that as the number of elites in a society increase, at some point a threshold was crossed, and the stability of that society is threatened.

Finally, in addition to society-wide demographic patterns, the stability of a chief's position was closely linked to demographic patterns within specific communities. The ratio of primary and affinal kin of a headman or chief to non-kin in a community, or primary to classificatory kin, typically define that administrator's power base and hence influence, barring an ability to draw on external support (Turner 1957:61-62). Among the matrilineal Ndembu, for example, uterine siblings tend to relocate to their native villages following divorce from or the death of a spouse and "there is a constant tendency ...for the matricentric family to reconstitute itself as a local unit " (Turner 1957:76). In long established communities among the Ndembu, as a result, primary kin come to either outnumber classificatory kin and non-kin, or else comprise a dominant plurality of the village population (Turner 1957:63, 74). Leadership is most stable in those communities where numerous supporters, in this case kin, were on hand to help reinforce authority. In general, chiefly authority structures tend to be most stable in newly formed communities (which are often formed by the fission, and relocation, of a like-minded uterine kin group to begin with) or in communities with some time depth (which Turner 1957:74 defines as having at least three successive village headmen). Instability, manifested in challenges to chiefly authority, is most common when a community begins to grow, and is most likely if non-kin (i.e., members of other lineages) achieve numerical dominance. Hence, the relocation of rival elites to a central community or the incorporation of other lineages has to be done with great care, to ensure that they do not build up too large a following. Successfully expanding chiefdoms, incorporating large numbers of non-kin into their communities, including possible rivals, may thus be sowing seeds of later destruction.

For an ambitious individual to create and maintain a power base in most chiefdom societies it was probably necessary to belong a large extended family capable of generating a large following and support base, both through sheer numbers and via marriage-based alliance networking. Individuals from small kin groups, lacking such a support base, might not be able to achieve power, or if achieving it, might not be able to long maintain it. As Turner (1957:199) put it, "Happy is the ambitious man who has many sisters and unambitious younger brothers with children of their own." When a society was expanding rapidly the tendency towards recruitment of proximate kin for leadership positions would probably had to have been relaxed, to ensure that administrative posts were filled with effective personnel, to facilitate alliances, and to co-opt former defeated elites.

Precise relationships between population level and organizational change, specifically cycling behavior, remain uncertain. Whether overall population levels rose in areas dominated by complex chiefdoms, and fell after their fragmentation, remains unknown. There is little doubt that dramatic population change sometimes occurred at specific centers or in particular areas, as records of abandonment make clear. Whether the people declined in number or died out, continued at their present level in a more dispersed (i.e., less hierarchical) settlement system, or were absorbed into other societies must be determined on a case-by-case basis. Population pressure may have played a role in organizational cycling. If a pattern of net population growth characterized events on the regional scale, for example, a trend toward increasing organizational complexity might have been likely. As population levels grew or declined within individual societies, organizational changes probably occurred as well, in response to the changing administrative needs of these societies.

Fairly strong relationships have been noted between overall population size and degree of sociopolitical complexity over a wide range of societies (Carneiro 1962, 1967, 1968; Naroll 1956; Tatje and Naroll 1973), and among chiefdom societies in particular (Feinman and Neitzel 1984; Taylor 1975). Some authors have suggested that population growth or decline led directly to changes in the number of decision-making levels within the societies occupying a given region. Cordy, following upon arguments developed by Johnson (1973, 1978), has described these relationships as scalar, dependent upon societal demographic conditions and territorial extent:

> If societal territorial and population size increase and cross an upper threshold, a new echelon in the hierarchical structure will appear... If societal territorial and population size decrease and cross a lower threshold, an echelon in the hierarchical structure will disappear (sometimes instantly, sometimes given time) [Cordy 1981:229, 230].

Research to date, however, has shown that while organizational complexity and population/territorial measures strongly covary, critical thresholds where organizational change occurs, defined solely in terms of these variables, remain elusive (Carneiro 1967; Feinman and Neitzel 1984:69; Orans 1966:30; Tatje and Naroll 1973).

Circumscription was a potential source of organizational instability, since population increase was apparently a mechanism by which the prestige and prerogatives of elites were maintained. Large populations at chiefly centers undoubtedly served as highly visible indicators of elite power. A primary arena of elite competition was over followers, since supporting populations provided a ready source of labor for public works, tribute or craft goods production, and defense. Some expansionist tendencies in chiefdom societies were linked to a desire to increase the labor force; the capture of prisoners to work chiefly estates or produce craft goods is infrequently reported, usually from more complex chiefdoms (DePratter 1983:61; Feinman and Neitzel 1984:58-59). Additionally, keeping chiefly rivals close at hand and under direct supervision might have been perceived as an effective alternative method of heading off potential rebellion to their dispersal. Population nucleation, including the incorporation of other groups, and the co-opting of potential rivals may also occur with chiefdom development.

At the present the relationships between population and organizational structure in chiefdom societies are poorly documented. It appears that the expansion phase of cycling process, when complex chiefdoms are forming, was characterized by, minimally, localized increases in population, as emergent centers attracted support populations. The collapse or fragmentation phase of the cycling process was characterized by, minimally, localized population decline, as might be expected if the resulting simplified organizational structures were unable to meet the subsistence needs of the paramount population. Particular care must be taken to delimit the underlying causes of observed population changes, however, since alternative factors (i.e., the incorporation of outside groups; modification of settlement patterning; population movement; losses due to warfare, etc.) may yield the same demographic results as changes in reproductive rates or strategies.

Warfare

Warfare has been described as a primary factor behind the spread of the chiefdom form of sociopolitical organization by some scholars (Sanders and Price 1968:132; Webster 1975:467; Carneiro 1981). Carneiro (1981:66) has argued that warfare leading to the incorporation of defeated enemies can result in the elaboration of organizational structures in chiefdoms. In this view a change in organizational structure, specifically the development of intermediate leadership positions, would have to occur if rival chiefdoms were to be effectively absorbed as a complex chiefdom emerged and spread. This reorganization, from a perspective emphasizing cycling behavior, would have entailed the replacement of a single decision-making level (characteristic of a simple chiefdom) by a two level decision-making hierarchy composed of ruling and lesser elites (characteristic of a complex chiefdom). Unless the ruling elite in the emergent two-level political hierarchy took steps to suppress rival factions, however, fragmentation could occur quickly, particularly since conquest would bring new potential challengers into the competitive arena. The ethnohistoric and archaeological record suggests that complex chiefdoms were fragile, with internal dissension, typically competition for positions of power, a primary cause of organizational stress (see also Chapters III, IV). Cycling in chiefdoms, from the perspective of conflict theory, thus comes about through patterns of conquest, expansion and, ultimately, overextension, leading to a collapse or fragmentation back to simpler organizational forms from which the process begins anew.

The military advantage conferred by chiefdom political organization suggests that while individual polities may cycle between higher and lower levels of sociopolitical complexity, chiefdoms as a category are extremely unlikely to completely disappear from a region, barring their incorporation into state-level societies. Due to the competitive nature of these societies, furthermore, the fragmentation of one complex chiefdom is likely to trigger the emergence of one or more others. This comes about as regional elites vie with one another to fill the power vacuum. Complex chiefdoms may also emerge as a secondary or reactionary process. Changes in the regional social environment, specifically the emergence of complex chiefdoms in other areas, or the presence of increasing numbers of complex societies in the landscape, may necessitate political reorganization if local elites are to retain a measure of autonomy. In a sample of 23 advanced horticultural societies from sub-Saharan Africa, for example, Lenski (1966:163) noted a weak positive correlation between the level of external threat and degree of sociopolitical complexity. Reorganization to a higher level of complexity, these data suggest, may have typically only occurred when military threats were most pronounced. Over the same sample a much higher correlation was found between level of technology and degree of sociopolitical complexity, indicating that differences in technology or technological innovations also played a major role in societal development and stability (Lenski 1966:162-163).

Factional Competition

Competition between elites is an ingrained aspect of chiefdom societies and is particularly pronounced among complex chiefdoms, promoting general instability and the likelihood of change in organizational/administrative structures, or cycling. The advantages that accrued to successful elite competitors, such as a high standard of living, personal power and prestige, and possibly greater relative reproductive success all appear to have been motivating factors (Earle 1987:294). Helms (1979, 1987) has examined how patterns of elite competition, once established, maintain themself. Leaders in chiefdoms:

> must on the one hand continue to evidence their commonality with the general population and on the other strive for the individual distinctiveness of high rank, generally acquired and held by a mixture of inheritance and personal attributes. Chiefly elites are, therefore, particularly prone to rivalries among themselves. To be effective as political-religious leaders they must be active and in an atmosphere of rivalry make visible to other contending elites and to the general populace their skills and activities as leaders in (external) warfare, as specialists in long-distance exchange, [and] as experts in communication with the cosmic powers that must be understood and controlled for the proper functioning of society [Helms 1987:77].

Control of esoteric knowledge was often tied to concerns with subsistence production, thus creating a linkage of chiefly ability and sanctity with the economic well-being of society in general.

Competition between elites for followers, typically among other elites, was thus the basis of chiefly power. Because power in chiefdom societies was kin-based, however, this limited its scope and effectiveness and necessitated a continual effort on the part of the dominant elites to maintain and legitimize their authority. The fact that a chief's principal supporters were also typically his most likely successors, and hence potentially his greatest rivals meant that factional competition was universal in these societies. This is a primary cause of organizational instability in chiefdoms, and a dilemma facing elites. Webster has stated this problem perhaps best of all. According to him:

> Chiefs in such societies tread the fine line between receipt of gifts due to senior kinsmen on the one hand (with the expectation of reciprocity), and outright coercive mobilization of labor and taxation on the other. Here is a source of instability in such systems, since the (usually) insufficient coercive force at the disposal of the chief is unable to counteract fissioning tendencies produced when he overreaches himself in his demands.
>
> Another fundamental weakness of ranked societies is that withdrawal of support [by commoners or lesser elites] results in increased authority of competing individuals or factions. Because the status of the chief is highly desirable, it is coveted by others. ...precisely because there are other members of the society of near equivalent rank (and because genealogies can be so easily manipulated), other individuals can usurp the chief's position, and enjoy his prerogatives provided the force at their disposal is superior. ...[chiefdoms] often appear to be more political arenas than political entities [Webster 1975:465-466].

This has also been noted in somewhat more general terms by Earle:

> The chiefly hierarchy is set apart as specialized leadership but internally it is undifferentiated as to function. Chiefdoms are thus highly generalized leadership systems in which the different levels have similar duties, such that they are potentially independent. As a result, any delegation of authority is potentially complete, effectively setting an upper limit on the physical size of chiefdoms. The regional organization would seem to be highly unstable [Earle 1987:289, see also Earle 1989:87].

Only through the replacement of these fragile kin-based leadership structures with poorly concentrated authority by more stable secular and ideally non-kin-based structures, such as formalized administrative classes or bureaucracies, could more complex, state-level societies arise.

Factional competition may be actively encouraged by ruling elites in chiefdom societies. A particularly effective method of dissipating the frustrations and resentments of differing groups would have been consciously or otherwise to set the members of these groups into competition with one another and then co-opt or eliminate the most successful practitioners. Competitions were typically the kind that directly or indirectly enhanced the elite's position even further, such as skill in warfare or tribute extraction. In the process, though, co-opted lesser elites acquired the knowledge necessary to run the chiefdom themselves, and hence were a potential source of rebellion. Elites and not commoners were the usual source of rebellions in these societies, since they alone possessed the knowledge and the support base necessary to pull off a successful challenge to a chief's authority. And yet, elite competition was extremely divisive, since elites tended to play off not only themselves, but also their retinues, including commoners, in their struggles with other elites. Thus, factional competition between elites often led to society-wide conflict.

Succession to the Chieftainship

Mechanisms by which chiefdoms dealt with matters of succession or changes in leadership were of critical importance to the long-term stability of these societies. As Service has noted:

> Probably the first rules peculiar to chiefdoms, and those which importantly affect the rest of society, are those concerned with the creation and perpetuation of the office of Chief. These are regulations which separate the Chief from all others, sanctify or otherwise legitimize him; codify his rights, privileges and duties; and prescribe the form of succession. This last is particularly important in making an office of the post, for continuity from generation to generation is implied in the concept. Thus there would seem to be with respect to the Chief two distinct kinds of rules: sumptuary rules or taboos which set aside the chiefly persons into a special category; and rules of succession and affiliation to this category, and to the various groups and ranks [Service 1971:146].

Among more complex societies internal power struggles tended to be common where rules of succession were ambiguous or weak — "without an institutionalized pattern of succession" (Lenski 1966:196-197). Where rules of succession were poorly defined or subject to challenge the death of a paramount may trigger widespread social upheaval until a successor can consolidate his grasp on authority. Competition between rival elites is widely recognized as a primary factor contributing to the instability of these political systems, and ethnographic accounts from chiefdom societies are filled with accounts of rebellion, treachery, and warfare directed to obtaining authority (Burling 1974; Goldman 1970; Helms 1979:24; Kirch 1984; Sahlins 1958:176-196; Wright 1984). Chiefly succession and elite factional competition are thus closely related, and linked to the cycling process (Figure 2). Rivals and claimants were often the chief's closest male relatives or advisors (Gluckman 1951:23; Lenski 1966:171-173; Schapera 1956:157-172). In such circumstances the power of the chief often depended on the skill by which he maintained control of and subordinated these people. The personal abilities of the chief were often critical to the outcome of events surrounding a particular crisis, and thus to the developmental history of a given society (Turner 1957:200).

The possibility of chiefly cycling was thus dependent upon how clearly and formally succession was defined (i.e., whether it was regular and secure, or uncertain and insecure), and whether or not the replacement of leaders led to shifts in the number of decision-making levels present within a society. Care must be taken to differentiate successional events which led to a change in the number of administrative levels (i.e., cycling) from events that merely resulted in the replacement of one individual by another. Rebellions typically tended to be against the person of the chief and not against the structure of the system itself. Struggles between elites usually resulted in little change in the commoners' way of life. Cycling occurred when one center emerged or declined at the expense of another, but only rarely when one chief within a center replaced another, unless that replacement led to marked organizational change. Fluctuations in administrative levels were most likely when leaders of markedly different capabilities

THE RELATIONSHIP BETWEEN SOCIAL ORGANIZATION AND CHIEFLY CYCLING BEHAVIOR
(Shifts in Administrative or Decision-Making Levels)

Shifts from 1 to 2 Levels	Levels Stable	Shifts from 2 to 1 Levels
	Nature of Succession	
(regular)	(regular/institutionalized)	(uncertain)
	Factional Competition	
(major/controlled)	(minor/channeled)	(major/uncontrolled)
	Ritual Institutions	
(strongly supported?)	(strongly supported)	(weakly supported)
	Authority Structures	
(strong)	(strong)	(weak)
(Instability)	**(Stability)**	**(Instability)**

Figure 2. The Relationship Between Social Organization and Chiefly Cycling

succeeded one another. The succession of a poor leader could cause a complex chiefdom to fragment, while the succession of a strong leader might lead a simple chiefdom to a position of dominance over a number of its neighbors, resulting in the development of a complex chiefdom.

How successional crises developed and were conducted was critical to the maintenance of societal stability. Competition for the position of the chief appears to have been greatest, and most violent, when the material rewards associated with the position were greatest. Among the Ndembu, for example, this was the case during the period of the slave trade, when the chief and his senior headmen exercised considerable control over a highly profitable external exchange network. In weakly structured chiefdoms, in contrast, succession tended to shift between lineages or communities fairly readily, with much lower levels of accompanying violence (Turner 1957:104). Successional crises did not invariably come about for materialistic reasons, although this was undoubtedly an underlying motivating factor promoting patterns of rivalry and competition. Sometimes relatively minor events could trigger social unrest, such as quarrels over the relative rank or position of members of the elite (Gluckman 1951:42-43).

Intensity of factional competition also appears to have been related to regional political geography. In areas where few chiefdoms were present and there was room to expand, rival elites might be intentionally relocated to subsidiary/support positions in other communities. Unsuccessful factions in these same areas would have as an option relocating to new areas. Where the landscape was packed with chiefdoms and movement was more constrained, making the dispersal or relocation of rival elites unfeasible, however, greater violence (i.e., elimination of rivals) might attend factional competition.

Although generally referring to events in more complex social systems, Lenski has argued that events following successional crises exhibit a consistent format:

> As a reading of human history makes clear, there has usually been a more or less cyclical alternation in human societies. ...Each cycle begins with the forcible seizure of power by a new elite and involves an initial phase of violence during which organized resistance is either destroyed or suppressed. The next phase is one in which the regime strives to reduce its dependence on naked force and to increase its legitimate authority. ...unless there is a steady succession of challenges the long term trend involves a reduction in the active role of force and coercion and an increase in the role of persuasion and incentive until finally the cycle comes to an end when the regime is overthrown [Lenski 1966:59].

Elites in chiefdoms thus had to devote considerable attention to preventing their own replacement, since defeat was likely to result in death or at the very least considerable reduction in status and privilege. Instilling patterns of competition among lesser elites and playing them off against each other was part of this process. Co-opting potential rivals is a strategy evident in many chiefdom societies. By stressing prowess in warfare as a method of achieving honored social status, for example, and rewarding successful warriors with prestige and luxury goods, chiefly elites co-opt potential rivals, and in the process typically gain strong supporters.

If a succession was particularly violent, the victor would likely be both strong and ruthless, eliminating immediate rivals and capable of suppressing subsequent challenges, and hence ensuring a period of relative stability during his reign. Where force is viewed as the basis of authority, when a leader's "coercive authority is weak, challenges inevitably occur, and the system is eventually destroyed and replaced by another based more firmly on force" (Lenski 1966:51). This may have had an evolutionary effect. The end result of a pattern of repeated challenges to chiefly authority in an area where such authority was initially weak would thus be the emergence of ever stronger institutions, increasingly based on secular power. Increasingly intensive elite competition thus selects for strong leaders and increasingly secular authority structures. Changes in authority structures observed over the course of the Mississippian period in the Southeastern United States may be related to such a process (Chapter IV).

The specific rules governing succession can have a marked effect on overall societal stability. Where a chief's brothers sequentially inherit power (adelphic succession) there may be a fairly rapid turnover in officeholders, since "a number of aged office-holders will succeed one another, few of whom will live long" (Turner 1957:88). When inheritance passes between generations, from a chief to his sister's son (nepotic succession), turnover may be much less frequent. Among the Ndembu, where adelphic succession occurs, sister's sons tend to grow impatient waiting for all the members of a senior generation to die off and may either revolt or relocate to found a new community. Thus, if chiefly succession is likely to remain within a well-populated lineage the possibility of community fissioning or challenge by rivals is increased, since their chances for legitimate succession are drastically reduced. A particularly critical period in societies where adelphic succession or regencies are present occurs when succession passes from the last living member of one generation to the next adjacent generation (Turner 1957:251); these transitions tend to be characterized by unusual tension, since power is typically passing from a well-established and experienced individual/cohort into the hands of a much younger individual, with less experience and potentially a number of living rivals.

How societies with fairly rigid rules of succession dealt with incompetent heirs also affected their overall stability. Among the Yao of southern Nyasaland succession to village headmanship was typically matrilineal, passing from the headman to his sister's first son, unless that person was judged unfit, in which case another was chosen (Mitchell 1951:339-340). Other examples of succession to leadership positions by-passing a designated heir because of that individual's inability have been noted over a range of tribal as well as more complex societies, such as the Jivaro of South America (Stirling 1938:40-41) and the Kuma of New Guinea (Reay 1959:114; see also Lenski 1966:132). Substitution is common in many South American groups if "the customary successor is deemed unfit" (Lowie 1946:346). Where the choice of alternative heirs was ambiguous, the potential for conflict between potential successors may have been increased.

Specific examples of successional crises in chiefdom societies indicate how the process operates, and its effects. Historic records of successional events from the Southeastern United States are provided in the next chapter; in the present chapter accounts from other areas are examined. Cordy (1981:207, 217), for example, describes four successful revolts against chiefly authority in 16 reigns in the oral history of Oahu. This rate, about one a century, would likely leave impressive archaeological signatures if the center of power had relocated (although in these cases it apparently did not). The Hawaiian accounts indicate that while acts of rebellion and treachery against high chiefs were fairly common, they were only rarely successful. This was probably due to the strong power base the paramount commanded, and the skill with which he manipulated his underlings.

The successful revolts described by Cordy (1981:206-207) are interesting to recount, however, because they indicate the sources of rebellion were often the chief's closest allies or relatives. One successful revolt was by a paramount's younger brother (Kaihikapu-a-Manuia) who overthrew and killed his older brother, and later his younger brother as well when the latter's district court (=power base) began to rival his own. Another successful revolt was by lesser chiefs in reaction to the excessive greed of the paramount. The lesser chiefs killed the paramount, replacing one chiefly line (Haka) with another, colateral line (Mailikukahi). A third successful revolt occurred upon the succession of a child. This shortly thereafter resulted in the usurpation of power by the appointed regent (Peleioholani), the dead chief's brother. In the early historic era, a paramount (Kumahana) was replaced in a bloodless removal when he proved incompetent.

The oral tradition from the main island of Hawaii offers a similar picture of revolts by younger brothers, usually supported by factions within the lesser nobility (i.e., high, or district chiefs)(Cordy 1981:210-214). From ca. A.D. 1550 on revolts occurred in almost every generation until contact. Hakau was overthrown by his brother Umi; Umi's son Kealiiokaloa was overthrown by his younger brother Keawenui; following three stable successional events, internecine warfare again occurred over a three generation period, resulting in the rapid fragmentation, re-unification, and re-fragmentation of the main island's paramountcy in the 60 years prior to European contact in 1778. Similar turbulence surrounding chiefly succession is also reported from Kaua'i (Earle 1978:174-180). Successful revolts could thus result in the break up of a complex chiefdom rather than the replacement of one paramount by another, if the challenger's goal was to achieve autonomy rather than ultimate power (Cordy 1981:216).

Rules of succession thus play a major role in determining the stability of chiefdom societies, and affect matters such as the incidence, intensity, and geographic scale of factional competition, and how long power was maintained at particular centers. How succession was determined — either matrilineally, patrilineally, or by some other procedure — coupled with post-marital residence rules, could also affect the stability of these societies, or at least centers of power. These matters are discussed in greater detail, with specific reference to Southeastern Mississippian societies, in Chapters III and IV.

Environmental Factors

A range of environmental factors shape the evolution of chiefdoms, of which the most important are regional physiographic structure, resource productivity, and climate. Regional physiographic structure greatly influences the possible social landscape by constraining the location and spacing of individual settlements, centers, and polities (Blake and Clark n.d.; Carneiro 1970:734-735; Hodder and Orton 1976:224-236; Johnson 1977:488-494; Scarry and Payne 1986; Steponaitis 1978). Physiographic structure also determines the nature of regional communication and trade arteries and, as a result, the kinds of interaction that could occur between communities. The occurrence and availability of specific resources such as agricultural soils, game, plant communities, and knappable stone have a similar effect, to give a few examples. Competition between chiefly elites for control of agricultural land, hunting territories, raw materials or trading networks has been variously suggested as causes of at least some of the organizational fluctuations observed in these societies (Gramly 1977; Larson 1972; Turner and Santley 1979; Wright 1984). Finally, climatic factors such as short- and long-term rainfall, frost, sunlight, and other patterns play a major role in shaping local and regional biotic communities and agricultural production, and even influence areas chosen for habitation surfaces (Butzer 1982; Dincauze 1987; Gladfelter 1981).

Arguments about the relationship between sociopolitical complexity, regional physiographic conditions, and environmental resource productivity have had a long history in anthropology (Kroeber 1939; Wissler 1917). Sahlins (1958:107-135, 201-217), for example, argued that the degree of social stratification found on Polynesian islands was related to the variability and distribution of natural resources on these islands, an indirect measure of their subsistence productivity and potential for surplus. Sahlins (1958:203) additionally argued that the occurrence of specific organizational structures was determined by these same factors, specifically that the presence of ramages or conical clans — "internally stratified, unilineal ...descent group[s where] ...distance from the senior line of descent from the common ancestor is the criterion of stratification" (Sahlins 1958:140; see also Kirchoff 1955) — was most likely in rich, diversified environments. Simpler unilineal descent systems, in contrast, were more typically found in less productive or more uniform environments. Although the accuracy of Sahlins' ethnohistoric database has seen severe challenge, his primary thesis that there is a close relationship between sociopolitical complexity and resource structure and potential productivity has remained essentially intact (see Cordy 1981:30-44; Orans 1966).

Environmental constraints on surplus production and its mobilization as tribute are of critical importance to the organizational stability of chiefdom societies, since elite authority structures in these societies depend upon surplus and its efficient mobilization for their continued existence. These relationships between culture and environment are not precise, however, as many authorities have demonstrated. While it has been suggested that among relatively simple societies "the richer the environment, the larger the surplus and the greater the importance of power in the distributive process" and that "the degree of inequality in distributive systems will vary directly with the size of a society's surplus" (Lenski 1966:48), this argument is overdrawn. While a relationship admittedly exists between the amount of surplus that can be produced in a given environment and the degree of sociopolitical complexity or stratification that can develop in the societies that occupy that environment, no exact correlation or relationship is evident (Orans 1966:30). Resource structure and productivity, and fluctuations in carrying capacity only serve to indicate the potential of a given area, not the actual outcome of sociopolitical evolution and development.

Regional physiographic structure also constrains travel time and transportation costs, and directly determines the location of communications arteries (Johnson 1977:485-487). The presence of efficient internal communication networks linking centers and subsidiary communities was essential to the development of sociopolitical complexity. Lenski (1966:160-162), for example, has noted that few complex societies in sub-Saharan Africa were located in rain forests, something he attributed to transportation difficulties in these areas. Helms (1979), in an examination of chiefdom development in Panama and Colombia, has shown how a community's size and importance was directly determined by its position in regional exchange networks. Chiefly centers located along major river systems or near major physiographic ecotones, that is, along favored transportation arteries or near important resources, typically expanded at the expense of centers located away from these locations. This same effect has been variously noted among Southeastern Mississippian societies (Fowler 1974; Hally 1989; Larson 1971a).

The development of complex chiefdoms may have been possible only in certain physiographic areas, and was precluded or hindered in other regions. As Blake and Clark (n.d.) have elegantly demonstrated, variation in interaction potential, measured in terms of the number of communities or polities with which a given community is in regular interaction, is directly linked to regional physiographic structure. Interaction potential is greatest in open, homogeneous, or otherwise unrestricted environments, and lowest in circumscribed, patchy, and restricted environments. The emergence and maintenance of social complexity, they argue, is directly related to the shape of the interaction networks that can form in a given area, and the ease by which these interactions occur. Environments permitting extensive interaction, such as open plains or areas of extensive braided watercourses would facilitate the development and maintenance of hexagonal lattices of interacting polities and the potential for multipolity political aggregates, while in restricted or patchy environments interaction would be more difficult and hence less likely, constraining the emergence of complex or stable political structures. Fundamental to the use of this approach is the realization that the nature of environmental restrictedness and interaction potential is dependent on the scale or geographic extent of the polities in question (Clark and Blake 1989, n.d.). What might be an unrestricted environment at the scale of simple chiefdoms may be a restricted environment at the level of complex or paramount chiefdoms.

The size and stability of the chiefdom societies that arose in the Southeastern United States were unquestionably shaped, at least in part, by the widely separated linear riverine systems characteristic of much of the region (Chapters IV, VI). In most areas of the Southeast information flow between polities located in differing river systems would have been difficult, restricting political development primarily to individual drainages. Similar geographical arguments have been advanced to help explain the development of complex societies in some parts of the world, and their absence in other areas (Adams 1974; Carneiro 1970; Johnson 1987:115ff).

Political relationships within, as well as between, chiefdoms occupying a given region were constrained by the relative proximity of communities to one another. Whether or not a community participated in a rebellion against chiefly authority, for example, was often determined, in part, by its position within the landscape, specifically the distance it was located from the center. This has been observed in patterns of rebellion against chiefly authority among the Lozi:

> Men supported one or the other claimant to the throne according to which was nearest to them at the time or what line was taken by prominent men among them. Adjacent villages frequently took opposite sides. But in the outer provinces tribes tended to take sides as wholes. These outer provinces were not administered by princes sent out to establish capitals among them as is usual in Bantu kingdoms. They were left under their own chiefs, where they had them [Gluckman 1951:17].

Typically, the potential for rebellion was greatest in the most distant reaches of a chiefdom, since these areas tended to have the greatest autonomy. Distance, it should be emphasized, was usually in reference to travel time between communities rather than to straight-line distance. The extent of area under the direct control of a center was usually a factor of ease of transportation and communication, something directly shaped by physiographic conditions. In many early societies this was usually no more than one or two days travel time, or a radius of about 20 to 40 kilometers (Hally 1987; Johnson 1987:115-116; Renfrew 1975, 1984:97; Scarry and Payne 1986:83-84).

Regional physiographic conditions thus combine with more localized patterns of resource occurrence to shape settlement systems and organizational structures, as well as place parameters on the stability of these systems. This is not altogether surprising, since the distribution and density of plant and animal populations has long been known to shape human settlement. In the Eastern Woodlands, for example, the absence of a reliable (i.e., domesticated) source of animal protein is thought to have had a great deal to do with the distribution of populations on the landscape, and the developmental trajectories of local societies (Gramly 1977; Smith 1974a, 1975; Turner and Santley 1979). Agricultural productivity has also been shown to be a critical variable in societies dependent upon surplus (Ford 1974, 1977). The number and diversity of plant species in cultivation or the number of harvests possible per year all affect crop yields and hence the extent of possible surpluses. Different crop species likewise had different storage requirements, which in turn determined the length of time surpluses could be used to advance organizational goals.

Climatic conditions, specifically short- and long-term perturbations in critical variables such as summer rainfall or the length of the growing season, are particularly important factors to consider when examining the stability of chiefdom societies. Crop failures brought about by localized or widespread droughts, flooding, or other catastrophes, for example, would have threatened the stability of agricultural chiefdoms by reducing the productive surplus the elites needed to maintain their authority (Figure 3). It might have led also to a reduction in support population as people (subsidiary elites and commoners alike) physically relocated to more favored areas or polities or, in extreme cases, if population decline occurred due to famine or warfare triggered by subsistence stress. Extended crop or hunting failures would have also led to a weakening of chiefly authority by posing direct questions about the sacred position and intermediary role of the elite. In societies where chiefly sanctity was strongly accepted, climatic perturbations would probably have to be severe before challenges to leadership or changes in organization would be likely. Where legitimizing ideologies were weakly developed, however, as in emerging or secondary chiefdoms, such stresses might have brought about rapid social collapse or reorganization.

THE RELATIONSHIP BETWEEN CLIMATE AND CHIEFLY CYCLING BEHAVIOR
(Shifts in Administrative or Decision-Making Levels)

Shifts from 1 to 2 Levels	Levels Stable	Shifts from 2 to 1 Levels
	Climate	
(favorable)	(average)	(unfavorable)
	Agricultural/Subsistence Production	
(surplus)	(normal)	(shortfall)
	Tribute Mobilization/Surplus Appropriation	
(bearable)	(optimal)	(excessive)
	Prestige Goods Exchange	
(increasing flow)	(constant flow)	(decreasing flow)
(Instability)	**(Stability)**	**(Instability)**

Figure 3. The Relationship Between Climate and Chiefly Cycling

The production of crop surpluses and the maintenance of these surpluses through storage technologies also affects the stability of chiefdom organizational structures. Agricultural surpluses had to occur at levels necessary to maintain elite prerogatives or, in the event of production shortfalls, resources had to be present in storage in sufficient quantity to maintain the system until restocking could occur (Burns 1983:186-187). Effective risk minimization strategies in these areas (i.e., crop production and crop storage) may have included the dispersal of fields and storage facilities, specifically the scattering of fields over fairly large areas and in a number of microenvironmental zones, or the placement of storage facilities in a number of communities (Chmurny 1973; DeBoer 1988; Ford 1980; Gluckman 1951:9-10). Changes in agricultural production and storage strategies also appear tied to changing social conditions. The scattering of fields or granaries, for example, may be a response to increased warfare and raiding activity.

Another means by which a chiefdom might attempt to deal with periodic crop failure or production shortfalls may have been the development of larger or more complex organizational networks, permitting the alleviation of resource shortages in one area by the chiefly redistribution of stored surpluses from other localities. Adoption of such a strategy may have helped rationalize or legitimize the growth of large chiefdoms and, concomitantly, powerful elite authority structures. If redistribution-based "buffering" system were present in these societies, it is probable that surpluses were directed first to the elite and only secondarily to commoner populations during periods of stress. This appears to be the way things work in normal times in chiefdoms (e.g., see Betzig 1988a), and it is unlikely that elites would be less favored during periods of stress.

Territorial Boundary Maintenance

The ethnographic and ethnohistoric literature from around the world indicates that at least some chiefdoms occupied well-defined territories surrounded by and separated from other such societies by depopulated or underpopulated areas variously described as buffer zones, hunting territories, or no-man's lands. There is some suggestion, furthermore, that territorial behavior increases with sociopolitical complexity in these societies, although the ethnographic literature on this subject is characterized by considerable ambiguity (Taylor 1975:33-34). The primary thesis of this research is that chiefdoms within a region undergo a process of cycling characterized by the recurrent expansion and contraction of their administrative/decision-making structures. Understanding how these societies defined and maintained their boundaries and buffers in this regional landscape may have been critical to the maintenance of organizational stability and hence to understanding cycling itself. This necessitates a shift in research emphasis in the analysis of chiefdoms to encompass not only centers and other settlements, but also the areas people avoided, away from population concentrations. It also necessitates a consideration of areas large enough to encompass many chiefdoms, and not merely the area around one or a few of these societies.

Patterns of intensive and small-scale warfare were a primary method by which chiefdoms maintained territories and boundaries. Intensive warfare, which included either the relocation from (i.e., incorporation or expulsion), or extermination of populations in, given areas is sometimes reported among more complex chiefdoms (Carneiro 1987; Vayda 1960, 1961). Such activities comprise a direct and unequivocal method of defining territorial boundaries. Small-scale warfare maintaining territorial boundaries and buffers appears to have been more common, and was tied to hunting and other resource procurement activity (DeBoer 1981; Harner 1972:56; Hickerson 1965). This type of warfare was characterized by skirmishes between small parties and typically occurred when groups strayed too far from their own territories, and encountered individuals or parties from other polities. Areas closest to permanent settlements were the safest for hunting and other activities, while increasing danger obtained the farther one went out from this zone. A result of this behavior was that group boundaries came to be defined by the unoccupied areas between polities, areas that were only infrequently visited. An ecological consequence of this was that buffer zones served as prey reservoirs from which game animal populations depleted closer to settlements might replenish themselves (Hickerson 1965; Mech 1977). The maintenance of buffer zones, whether intended or not, helped these societies avoid potentially serious resource shortages.

There is some evidence to suggest that the existence and extent of buffer zones was related to user-group population size or density. If a relationship could be shown to exist between a polity's population base and the size of its buffer zone (controlling, of course, for variation in gross environmental resource structure), it would suggest that the successful functioning of these buffers was essential to the maintenance of organizational stability. Population apparently strongly co-varied with territorial extent (core territory and outlying buffers) in precontact Hawaiian chiefdoms (Cordy 1981:216), and similar relationships have been noted in other complex societies (Lenski 1966:194). Organizational change, in this view, might be as likely to ensue from gradually increasing resource pressure as from outright attacks on actual settlements. A continuing pattern of low-level subsistence stress or population attrition, which could be brought on by the differential success of hunting parties from differing polities in buffer zones as well as from harvest shortfalls, might be as devastating, in the long run, as large-scale warfare (see in particular Milner et al. 1988).

Determining where buffer zones occurred and how they operated can thus be critical to the investigation of the organizational stability of chiefdoms. The existence of geographically extensive buffer zones may be inferred when ethnographic accounts and maps or archaeological phase distribution maps are examined, although a range of variables such as survey coverage bias, population measures, and the utility of temporal indicators all need to be carefully considered. Such an attempt has been made over the Eastern Woodlands in the present study (Chapter IV). Archaeological procedures that have been used to reconstruct territorial extent include: (1) examining the distribution of artifact style traits, (2) the use of locational analysis/central place theory, and (3) examining the occurrence of boundary features such as cairns and fortifications (Cordy 1981:94; Hodder 1978; Renfrew 1976, 1984). Classifying "temples (a political artifact) along stylistic lines and then [plotting] their distribution in space and time" (Cordy 1981:95) has been employed in Hawaii, and a similar procedure has been adopted in the Southeastern United States using mound site distributions (Ferguson 1975; Hally 1987; Hally and Rudolph 1986; see Chapter IV).

Buffer zones can thus provide information on political developments, population levels, and resource distributions within a given region. There is a suggestion that buffers tend to occur only between the maximal political units occupying a regional landscape at any given time. Buffer zones were "the only consistent archaeological pattern marking community borders" in a study of political evolution undertaken in pre-Contact Hawaii by Cordy (1981:172). No cairns, boundary markers, or other special site types were found in these areas. In this same study, on the main island of Hawaii, the disappearance of buffer zones was linked with rapid settlement expansion, the emergence of a paramount chief, and the development of a multidistrict society replacing several formerly autonomous, simpler chiefdoms (Cordy 1981:179-183). A similar pattern was observed on Maui, which was occupied by two complex chiefdoms separated by a large unoccupied buffer until ca. A.D. 1600, when the island was unified and the buffer occupied (Cordy 1981:198-200). The presence and size of buffer zones in this Hawaiian case were thus shown to be directly related to the complexity of the political apparatus. The existence of buffers was apparently for sociological (i.e., to maintain separation of autonomous political units) as well as ecological reasons (i.e., to ensure an adequate supply of protein, hides, firewood, etc.). The buffers surrounded areas of political integration, within which resource shortages in one subarea could be overcome by surpluses in other subareas, through redistribution.

Information Management

The stability of chiefdom societies is directly related to the effectiveness of the procedures by which elites receive and process information and then make decisions. The relationship between information processing capabilities and chiefly stability is derived from managerial theories of chiefdom formation (Earle 1987:292-293; Johnson 1973, 1978; Peebles and Kus 1977:427-431; Tainter 1977; Wright 1969, 1977, 1984; Wright and Johnson 1975). According to this functionalist perspective, chiefly decision-making structures arose to deal with pressing social problems brought on by population pressure or resource shortages. Chiefly elites as decision-makers typically controlled (or managed at some level) societal food production, public construction activity (i.e., irrigation networks, monuments), warfare and military activity, long-distance trade, patterns of inter- and intra-polity social and political interaction, ritual, and access to sacred or esoteric knowledge. As the geographic scale of chiefdom societies increased, however, information management became increasingly difficult, particularly as the number of discrete, interacting locales increased (Johnson 1982). As the elite's administrative burden increased, so too did the possibility of information overload and system collapse, barring the emergence of more effective or efficient decision-making apparatus. Cycling in chiefdoms can thus be viewed, in part, as a process of administrative reorganization, the alternation of successful and unsuccessful responses to information processing demands.

Deriving effective measures of the information load chiefly elites had to deal with is crucial to examining the relationship between information processing and cycling behavior. One scalar measure of information load that has been suggested is the number of communities under a given administrative level, or its span of control (Johnson 1982:410). The span of control of a given center would thus indicate the information load on its elites, and provide a measure of the potential stability of that particular political system. This kind of information can sometimes be inferred from archaeological evidence, particularly settlement pattern data, where a one-to-one relationship between site size classes above the individual household level and information processing levels is usually assumed (Chapter IV). At the present time, however, the relationships between archaeological settlement pattern data and administrative or decision-making levels are incompletely developed.

Feinman and Neitzel (1984:67-74), using their sample of 63 New World prestate sedentary societies, have shown that a strong relationship exists between a society's total population and the number of administrative levels in place. A weaker positive relationship was found between maximal community size and the number of administrative levels. Finally, the span of control of the paramount or chiefly center was found only rarely to exceed seven subsidiary communities. To examine the relationship between information management and organizational structures using archaeological data, ideally evidence should be presented supporting a linkage between the settlement data and the decision-making hierarchy. Ethnographic and ethnohistoric accounts are the best direct forms of evidence, and fortunately the latter exist from the Southeastern United States (Chapter IV).

Changes in hierarchical structure are thus organizational shifts reflecting cultural responses to increases or decreases in the information load impinging on a society's decision-making apparatus. Social stability is maintained as long as processing capability is not exceeded. As information processing capacity is approached, stress increases. Once a critical threshold is reached, reorganization must occur or system collapse will follow. Studies undertaken to date indicate that fluctuations in control hierarchies tend to be between one and two levels of administrative complexity (i.e., control hierarchy), and only rarely between zero and two and one and three levels. That is, episodes or stages of growth and contraction occur between adjoining decision-making levels in most examples of cycling, rather than radical shifts covering two or more levels. The pattern has been described as step-like, because the levels are clearcut, and change is typically rapid from one level to the next (Cordy 1981:231; Johnson 1978:97). The addition or removal of a decision-making level would yield a hierarchical or step-like developmental profile, while reorganization within an existing administrative level would not.

Control of information was important to the maintenance of chiefly authority structures. Among the patrilineal Azande of equatorial Africa, where successional strife was common, paramounts are reported to have maintained careful control over the location of both settlements and trails, to maximize information flow to their center and minimize its flow between potential rivals. This has been described by de Schlippe (1956:12):

> Chief's villages were connected by paths with subchiefs' villages and these again with homesteads of the elders. From the homestead of an elder a path used to run along a contour, parallel to a stream, on which individual family homesteads of the ordinary Azande were dispersed like beads. No path was allowed to connect the homesteads of two Azande owing allegiance to different elders, not the homesteads of two elders, without it passing through their respective subchiefs. Even the homesteads of two subchiefs may not be connected without the path passing first through the chief's place. Whenever, among paths radiating from the chief's village, one was leading for a certain distance towards two different subchiefs, a sentinel was placed at the fork to watch any possible direct communications between the two subchiefs. Jealousy of power, suspicion, and political intrigue underlie this system [de Schlippe 1956:12].

It is possible that the example is overstated, although an emphasis on information control is clearly indicated. As noted previously, effective information flow may be constrained by environmental as well as organizational factors, with the very structure of the landscape either facilitating or hindering information flow (as well as other kinds of interaction) and, hence, organizational developments in complex societies (Blake and

Clark n.d.). The importance of information flow was also noted by Lenski (1966:154, 162, 235), who argued that the stability and complexity of many sub-Saharan African political systems was directly related to the efficiency of their internal communication and transportation systems. Where transportation and information flow was poor, chiefly control over outlying groups was difficult, and rebellions from this quarter were common. This relationship was shown to be scale dependent. That is, the larger the society, and the poorer the internal information and transportation facilities, the greater the likelihood of internal dissension.

The kinds of information that were the foci of decision-makers, as well as how decisions were made, were as important as how effectively the information required for making these decisions was transmitted. Information essential to the maintenance of elite control would have encompassed areas as diverse as subsistence (i.e., knowledge of planting strategies, harvest results, and amounts of stored surplus), politics (i.e., procedures for co-opting rivals and maintaining supporters; the need to maintain an awareness of the activities of rival elites in immediate and outlying communities), tribute mobilization (i.e., strategies for exacting goods and labor from supporters, information about the flow of these goods), "foreign affairs" (i.e., knowledge about the operation and current status of alliance and exchange networks between polities), warfare (knowledge of current hostilities, and the organization of responses to potential threats); and public ceremony and ritual (knowledge about the content and coordination of public ceremony, strategies for maintaining and increasing esoteric information). It would be a mistake to assume, however, that chiefly elites controlled or dictated all aspects of life. Local communities or subsidiary polities in chiefdom societies, and the individuals within them, typically had considerable or complete autonomy over many aspects of their existence.

Control of esoteric or sacred knowledge was important to elite legitimization, and its role should not be underestimated. Helms (1987:80), for example, has described "sacred wisdom and esoteric knowledge" as "the essential essence of eliteness." Esoteric knowledge included information about remote people and places, something that was both a consequence and demonstration of the elite's participation in regional prestige goods exchange networks. The stability of information management hierarchies in chiefdom societies has also been shown to be closely tied to patterns of ritual, with efficient decision-making dependent, in part, on the strength and importance attached to ideologies of chiefly sanctity (Peebles and Kus 1977:430). Where the chief was held sacred, so too were his decisions.

Control of knowledge as the prerogative of the elite could have a disastrous affect on the organizational hierarchy as well as throughout the total population if poor decisions jeopardized the successful functioning of the subsistence economy or other critical areas of society. The loss of one or a few key individuals with the personal skills and knowledge necessary to manage crop dispersal practices, maintain surplus appropriation, tribute appropriation, or prestige goods networks, or lead in warfare could bring about an organizational failure. That is, the loss of a particularly effective administrator and his replacement by a less skilled individual could bring about stress and ultimate collapse if sufficient checks were not built into the system. Both the historical and ethnographic literature is replete with examples of incompetent rulers dissipating the accomplishments of their predecessors.

One measure of the degree of stability of a decision-making level is the number of offices or administrative positions in place supporting or assisting elite decision-making (after Lenski 1966:132, 183). Where counsel or consensus was tolerated, greater breadth of knowledge could be brought to bear on decisions, and individual action could be moderated. Incompetent or underage rulers would more likely to be tolerated in political systems where supporting elites/administrators were present and capable of performing essential societal functions in the ruler's place. There was always the possibility, however, that these supporting elites would usurp power, something likely given the emphasis placed on personal ability in chiefdoms, and the competitive nature of the elite kinship/status system. What this suggests, though, is that where membership in decision-making groups (or rank-echelons) was large, greater administrative redundancy and hence organizational stability may have also been present than in societies where leadership was vested in one or a few individuals. While the replacement of leaders might be more likely in such cases (given the greater number of potential competitors), changes in basic organizational structure (i.e., numbers of administrative levels) might be less likely.

Population Movement

A number of generalizations can be drawn from ethnographic accounts of population movements and organizational change within chiefdoms that have direct relevance to the study of cycling behavior. Perhaps most striking is the fact that chiefdoms almost everywhere are characterized by considerable population movement. Individuals, villages, and centers move, sometimes frequently, for a variety of ecological and sociological reasons. Exhaustion of local soil, game, or firewood resources have been variously advanced to explain community movement, as well as the deterioration of buildings under the impact of climate and fauna (pests). Most population movement, particularly that caused by ecological reasons, typically occurs within existing social configurations and territorial boundaries, posing little threat to chiefly authority structures.

Population movement by individuals or small groups of related kin is well documented in chiefdom societies. It was common, for example, between local communities among the matrilineal Lozi of Zimbabwe. These movements were prompted by quarrels, accusations of sorcery, divorce, and stress on resources and were exemplified by the saying "If you live badly at your father's you have a right to seek a home at your mother's" (Gluckman 1951:68). The ideal situation, however, was to remain in or near one's home village, "where it was proper for a man to die" (Gluckman 1951:69). Frequent movement also characterized the membership of Yao and Plateau Tonga villages, less complex simple or non-chiefdom matrilineal societies of southwest Africa. As among the Lozi, population movement was often prompted by personal quarrels that got out of hand (Colson 1951:135, 139; Mitchell 1951:337-338). Among some chiefdom societies individual movement, while tolerated, required chiefly sanction. Among the patrilineal Azande, who practiced shifting cultivation, for example, individual moves prompted by soil exhaustion usually required the permission of the headman, who usually gave it, in part to avoid jeopardizing his own power base (de Schlippe 1956:192-194). Finally, in some chiefdoms individual movement, particularly that of commoners, was strictly controlled. Cordy (1981:18), for example, has noted that in complex Hawaiian chiefdoms commoners "spent their lives within the sphere of their own community."

Community or societal fissioning, leading to the establishment of independent communities and authority structures, is an important cause of cycling behavior. Turner, referring to events among the Ndembu, defined fissioning as:

> the division of a village community along lines of structural cleavage so that one section maintains continuity, usually symbolized by the retention of its name, with the original undivided village; and the other section or sections, named after their leading elders, seek to establish themselves as independent villages [Turner 1957:169].

Turner (1957:91-92) further noted that fissioning was a form of social drama marked by four stages: (1) a breach of social norms and relationships; (2) a period of increasing crisis; (3) attempts to correct the situation; and (4) re-integration of the differing factions, or schism and societal fissioning.

Incidence of societal fissioning appears to be inversely related to the degree of political centralization present in a region. Where central authority was weak, and a chief exerted little control over the movement of communities and individuals, fissioning tended to occur much more often than when chiefly authority was strong. Among the Ndembu, fissioning has increased markedly during the recent historic period, apparently because chiefly authority had been superceded by colonial administration (Turner 1957:49-50). Among the Yao, another African group where chiefly authority has weakened considerably in recent years, more important headmen sometimes "launched out and became independent leaders" (Mitchell 1951:348). That is, where chiefly authority structures were strong, successful fissioning, or the breaking away of dissident groups, tended to be difficult or unnecessary. The paramount had control over the building of villages among the Lozi, for example, and could order the relocation of people to new communities (Gluckman 1951: 62).

Where chiefly authority was weakly defined, community fissioning was more common, since relocation elsewhere was a viable option. Dissatisfied subjects in weakly organized chiefdoms may have been more likely and able to vote with their feet than those in strong chiefdoms. Alternatively, rivals might have been more tempted to replace existing leaders than to move away from them. This only follows to a point, however. If chiefly leadership and inheritance was secure, fissioning and out-migration might have been the only option available to impatient rivals. Their movement may have even been encouraged by the paramount as a means of reducing the likelihood that they would challenge his authority. Fissioning was sometimes encouraged or even dictated by the ruling elite in strong, well-organized, and expanding chiefdoms, as in the Lozi case cited above. Ironically, the longer a strong leader was in power, the more frustrated his rivals, including his heirs, might become. In these cases the establishment of new communities was seen as a way of maintaining the process of expansion through the incorporation of new members and new tributaries as well as a means of rewarding allies. Fissioning in such cases may also help disperse and diffuse potential rivals, by removing them from central arenas of power.

Kinship relationships were critical to defining fission units. Choice of residence and individual status within a community is usually determined by kinship, specifically the relationship between an individual and the village headman (Turner 1957:61). Groups of related males, who tend to form the core of chiefly authority, tend to be the primary units of succession to form new communities. Typically, elite fission groups tend to be members of junior lineages outside of the direct line of inheritance, or members within the ruling lineage, but either outside of the direct line of succession, or in lower (descendant) generations. These elites, their families, and probably associated commoners formed the basic fission units. In matrilineal societies like those presumed common in the Southeastern United States in the late prehistoric era, uterine kinship groups consisting of brothers and their sisters are likely to have been the basic unit of fission. The power of the uterine sibling group is repeatedly demonstrated in the Southeastern ethnohistoric accounts. Notable instances of this bond are the affection reported between the chief of Coosa and his sister (Ranjel in Bourne 1904:II:116), and the position of women in societies such as the Natchez and at Cofitachequi and Guatari (Chapter IV).

The depth and importance attached to genealogical charters appears related to the size and importance of a community (Turner 1957:82-84). Fissioning can rapidly lead to selective amnesia about a group's origin and ties with other groups; the deliberate revision of genealogical charters was to be a common strategy to set groups apart from or over other groups (Sahlins 1958:146; Turner 1957:86). Memories of a common origin fades within a few generations after fissioning among Ndembu communities (Turner 1957:175-176). This is related, in part, to the weak chiefly authority structure and shallow lineages present in this particular society, but it is also related to the necessity of focusing on the origins, charter, and autonomy of the present leadership. Ties are remembered, but are not emphasized and are weak on detail. Equation of a leader's title with the name of the polity is a fairly common practice in chiefdom societies, and tends to occur in older, more established polities or communities (Turner 1957:105).

The stability of a settlement (and hence the likelihood of fission) was based on a wide range of factors, including:

> the length of establishment of the settlement, the fertility of women and men, the strength of marital ties, the reputation and astuteness of the headman and of candidates for headmanship, the age and experience of these candidates, the local numerical strength of sibling groups and minimal lineages, and so on [Turner 1957:226-227].

As community size increased, so too did the possibility for conflict leading to rebellion or fissioning, following scalar stress arguments developed by Johnson (1982). Simply put, the greater the number of people in close proximity to one another, the greater the likelihood of dispute. Scalar stress arguments have been shown to apply directly to Ndembu fissioning (Turner 1957:43ff). Among the Ndembu, villages typically consisted of 12 or 13 huts and under 50 people, and never much more than 20 huts. When the upper end of this scale was reached "powerful social tensions"were present and fissioning was described as inevitable (Turner 1957:37-39, 43, 58, 215).

The geographic scale of population movement after fissioning was related to the underlying causes of the split and to regional political relationships. If ties between local communities in a given area are fairly strong, then fissioning populations may have to move fairly appreciable distances, since initiators of fissioning were almost always heavily criticized, at least among the Ndembu (Turner 1957:177). Where fissioning was between close kin, particularly where violent conflict occurred between these kin, the fissioning group typically relocated at a considerably greater distance than if the breaches were between more distant groups, or non-kin, and characterized by fairly minimal violence (Turner 1957:206-207). Where events leading to fissioning are acrimonious or bloody, population relocation may be over considerable distances, to ensure separation of the rival factions (Turner 1957:207). Generally, the greater the intensity of the conflict, the greater the movement upon fissioning. Where close relations or alliance networks exist between many communities, relocation over short distances may not be feasible. Movement may have to be to an area completely outside the alliance network. Population movement was thus a structurally ingrained method of resolving tension.

Fission units are often unstable, since they may not have enough members to sustain viable community replication; their very lack of time depth hinders the development of a sense of communal loyalty (Turner 1957:183). Additionally, they must be able to use existing technology where they relocate. A reliance on a specific subsistence system favors a relocation to those areas and environmental zones comparable to those left behind, since these systems may be continued with the least disruption (Anthony n.d.).

Chiefdom societies were thus predisposed, by the nature of their basic social structure, to a fair degree of instability. Population movement was one mechanism for resolving this social tension, and movement or relocation over moderate distances, the ethnographic record clearly indicates, would not be unexpected. Evidence for such population relocation is well documented archaeologically in the Southeastern United States (Chapter IV). Calling such movements migrations, however, has been overplayed and in the absence of a proper descriptive and interpretive context use of the concept is non-explanatory, as Smith (1984) has recently shown. In subsequent sections of this study methods are developed by which conditions leading to settlement movement and fissioning may be recognized and tested archaeologically.

The Causes of Cycling in Chiefdom Societies

Cycling refers to changes in administrative levels in the chiefdom societies occupying a region. These fluctuations have been described as cyclical because they tend to follow a recurrent pattern rather than directional change to greater or lesser sociopolitical complexity. Cycling tends to characterize chiefdom political organization, rather than stand as exceptional or aberrant behavior. As we have seen, the study of cycling necessitates the consideration of a wide range of topics, including factors as diverse as the developmental histories of the societies in question, their basic social and economic organization, and their placement in regional patterns of geography and climate. Figure 4 presents a listing of the variables that have been shown to cause cycling behavior in chiefdoms, specifically by promoting either organizational stability or instability. Since stability is defined as stasis in the number of administrative or decision-making levels, cycling behavior can only be initiated when organizational instability occurs, promoting either expansion or contraction in organizational complexity. Figure 4 indicates the general circumstances under which this happens, illustrating each variable state when the system is stable, when shifts from one to two decision-making levels occurs (i.e., when complex chiefdoms emerge from a backdrop of simple chiefdoms), and when shifts from two to one decision-making levels occurs (i.e, the fragmentation of complex chiefdoms into simple chiefdoms).

Causal links exist between many of these variables, something indicated by their placement in relation to one another in the figure (see also Figures 2 and 3). Thus regional physiographic structure, climate, and resource structure are listed at the top, since these variables constrain or predispose the limits of many subsequent variables. Similar groupings of related variables include agriculture/subsistence production, tribute mobilization/surplus appropriation, and storage technology, which shape developments within prestige goods exchange networks, and intra- and interpolity alliance and information flow networks. It must be emphasized, however, that the relationships between these variables generating chiefly cycling are complex and multivariate and that changes in one variable do not necessarily produce changes in other variables down the

FACTORS PROMOTING ORGANIZATIONAL CHANGE IN CHIEFDOM SOCIETIES

Increase in Complexity (decision-making levels stable or increasing)		Decrease in Complexity (decision-making levels unstable or decreasing)
Homogeneous	**Regional Physiographic Structure**	Irregular
Favorable	**Climate**	Unfavorable
Predictable/Even	**Resource Structure**	Unpredictable/ Irregular
Surplus	**Agricultural/Subsistence Production**	Shortfall
Bearable	**Tribute Mobilization**	Excessive
Present/Extensive Capability	**Storage Technology**	Absent/ Minor Capability
Constant Flow	**Prestige Goods Exchange**	Flow Interrupted
Strong	**Alliance Network**	Weak
Regular	**Information Flow**	Erratic
Aggressive	**Territorial Boundary Maintenance**	Passive
Regular/Insitutionalized	**Nature of Succession**	Uncertain/ Weakly Institutionalized
Minor/Channeled	**Factional Competition**	Major/Uncontrolled
Slow	**Population Growth**	Rapid
Sanctioned	**Population Movement**	Unsanctioned
Strongly Supported	**Ritual Institutions**	Weakly Supported
Strong	**Authority Structures**	Weak

Figure 4. Factors Promoting Organizational Change in Chiefdom Societies.

column in a linear fashion. Accordingly, Figure 4 should be viewed as a highly simplified representation of an extremely complex process, a structure ordering the present research and amenable to continued evaluation and testing.

A primary premise of this research is that the changes in decision-making levels characteristic of the cycling process are brought about or triggered by factors promoting organizational instability. Thus, Figure 4 illustrates how and under what conditions the process operates. The underlying causes of cycling, that is, why the process operates, however, are more basic. Cycling refers to a recurrent pattern of organizational expansion and fragmentation that appears to be an ingrained aspect of chiefdom society. Only when this pattern is broken, something that occurs only rarely, are chiefdoms replaced by states or much simpler sociopolitical entities. It is to the basic structure of chiefdom social organization, therefore, that we must look if we wish to understand the cycling process.

Competition for prestige and power between rival elites, it is argued, is what initiates and drives the cycling process in chiefdom societies. The process is cyclical because this very pattern of competition precludes the development of stable organizational structures capable of maintaining a two-level decision-making hierarchy indefinitely. That elites in chiefdom societies compete with one another for followers and for power over commoner populations is well documented. Within a simple chiefdom this process typically results in the replacement of one leader by another, with no change in organizational structure. When elites in one chiefdom sought domination over those in another, however, a complex chiefdom might form and expand, necessitating a change in organizational hierarchy from one to two levels. The formation of a complex chiefdom greatly enlarged the arena of elite competition, and changed the potential outcome of the competitive process. Replacement of leaders in complex chiefdoms may have occurred with minimal alteration to existing organizational structures, as when one elite within a paramount center succeeded another. Given repeated challenges, however, sooner or later power would either shift to another center (in which case the two-level organizational hierarchy continues, albeit in a different setting) or the chiefdom would fragment. It is this process of shifting power relations, and particularly the fragmentation of complex chiefdoms over a landscape into parts from which expansion begins anew, that constitutes cycling.

To elaborate, simple chiefdoms are essentially autonomous economic and sociopolitical units. Complex chiefdoms, formed from a number of simple chiefdoms, were thus made up of entities perfectly capable, if given the chance, of usurping the role of the paramount center or, alternatively, operating autonomously. Accordingly, complex chiefdoms existed only so long as the mechanisms by which their elite maintained political control remained in place. Struggles for political control in these societies were between paramount and lesser elites and their retinues, and only rarely encompassed entire populations. Commoners appear to have had very little power or influence in shaping chiefdom organizational structures, except through weight of numbers. Maintaining the support of fellow and lesser elites, typically through co-optation or coercion was, thus, crucial to the stability of a chiefdom.

Elite support was fragile, however, since the elites living within the constituent parts of a complex chiefdom were fully capable of operating on their own. Obtaining the cooperation of fellow elites was thus an essential prerequisite and primary means by which paramount elites emerged and retained their position as leaders/rulers of complex chiefdoms. Lesser elites were, in effect, responsible for the allegiance of the constituent parts or simple chiefdoms making up the larger whole. Both the lesser elite as well as the paramount's own kin were dangerous, though, since they were typically genealogically close in rank to the paramount and since some were rulers of chiefdoms themselves and operated from positions of considerable power. Given these legitimate successors to power, challenges to chiefly leadership were inevitable, given human ambition and opportunity. The outcome of these leadership struggles in complex chiefdoms, as noted, almost invariably took one of three courses. Either the office of the paramount chief and its associated rank echelon continued at the original center, or it rotated or relocated to a new center, or it disappeared altogether, as the paramount chiefdom fragmented back into a series of simple chiefdoms and the process began anew.

Before concluding this section, it should be noted that many of the factors promoting organizational stability or instability and hence leading to cycling in chiefdom societies also operate to promote changes in organizational complexity (Figure 5). Maintaining a distinction between variables and processes promoting organizational stability and those promoting changes in organizational complexity is critical, simply because factors promoting organizational complexity may have little to do with the stability of the resulting organizational structures. In the next two chapters the ethnohistoric and archaeological record from the Southeastern United States is examined, to see if the causes of cycling behavior identified in this chapter are present and amenable to study. Chapters III and IV thus serve as an introduction to the chiefdom societies that occupied this region, while simultaneously providing a review of the evidence that is available from this area for the study of cycling.

FACTORS PROMOTING THE GROWTH OF ORGANIZATIONAL COMPLEXITY

COMPLEXITY
(Number of Decision-Making Levels)

4	3	2	1	0
homogeneous		**Regional Physiographic Structure**		irregular
smooth		**Information Flow**		difficult
large		**Population**		small
large		**Geographic Extent**		small
secular/coercive		**Authority Structures**		sacred/cooperative
extensive/coercive		**Surplus Appropriation**		minor/voluntary

Figure 5. Factors Promoting Organizational Complexity in Chiefdom Societies.

CHAPTER III.

MISSISSIPPIAN POLITICAL DEVELOPMENT IN THE EASTERN WOODLANDS: EVIDENCE FROM ETHNOHISTORIC ACCOUNTS

Introduction

In this chapter documentary evidence for cycling behavior and its causes within the Mississippian chiefdoms present in the Southeast at the time of initial European contact in the 16th century is examined. Historic accounts from across the region are used, with an emphasis on descriptions of native societies in the South Appalachian area, the focus of subsequent archaeological investigations. The earliest 16th century accounts, from the period before the native chiefdoms collapsed from contact-induced depopulation and warfare, contain valuable descriptions of political, genealogical, and settlement hierarchies, social stratification, tributary and alliance relationships, fortifications and warfare, labor mobilization, decision-making organizations, sumptuary ritual and mortuary behavior, and individual and chiefly wealth (Anderson 1985a; DePratter 1983; Hudson et al. 1984; 1985, 1987; Hudson 1976, 1986, 1990; Smith 1987). This documentary evidence is of considerable value in the examination of late prehistoric and early contact-era archaeological materials from the region. Through a combination of archaeological and ethnohistorical analysis, it is possible to produce a detailed picture of the location, size, and operation of Southeastern chiefly societies.

The disappearance of chiefdoms around the world means direct ethnographic research on societies of this kind is becoming increasingly difficult. Exceptions still occur (e.g., Petersen 1982), but the truth of this observation is difficult to deny. Unfortunately, this position has been translated by some into a partial disavowal of existing ethnographic materials:

> The numerous ethnographies of chiefdoms already extant (for an ethnographic present stretching over several centuries) are and will continue to be of central importance, but we may expect no significant additions to this literature. Raking over the existing studies again and again will not likely produce major fresh insights [Drennan and Uribe 1987:vii].

These authorities also reject cross-cultural comparative analyses as valid methods of analyzing long-term change, preferring instead a method directed to the archaeologically based study of single long sequences (Drennan and Uribe 1987:viii). As the ethnographically derived observations and cross-cultural analyses referenced in Chapter II demonstrate, these positions are unwarranted.

The value of the ethnohistoric record for the study of culture change is acknowledged by Drennan and Uribe (1987:viii), although several cautionary themes are presented. First, only the earliest accounts are likely to provide accurate data on the form and operation of these societies, given their rapid alteration upon contact. Second, ethnohistoric observations are, for the most part, synchronic pictures, often of political systems in great distress, providing an incomplete or partial perspective from which to study long-term trends. As the authors note, "we clearly cannot base our whole idea of processes of change in chiefdoms, and especially not our notions of their initial development on information about their sometimes cataclysmic ends" (Drennan and Uribe 1987:viii). The value of ethnohistoric information for the study of cultural evolution thus lies, in part, in the effectiveness with which its rich synchronic detail about economic, social, and political organization can be linked with diachronic archaeological data from the pre-Contact past of these societies.

Accounts from explorers, colonial administrators, and missionaries provide a valuable picture of the chiefdoms in the Southeastern United States during the initial century of European contact. Although researchers continually lament the limited nature of the ethnohistoric record, excellent regionally oriented syntheses of the anthropological data contained within it have been produced, most notably by Swanton (1911, 1946), Hudson (1976), and DePratter (1983). In the South Appalachian area ethnohistoric research has had great success in documenting both the routes of early explorers and the location and general nature of the native societies with which they interacted (Baker 1974, 1975; DePratter 1987a, 1989, n.d.; DePratter et al. 1983; Hudson 1987, 1990; Hudson et al. 1984, 1985, 1987; Waddell 1980). The present examination of cycling, which proceeds by resolving explicit linkages between the observations about contact-era Southeastern chiefdom societies recorded in these early accounts and the processes shaping the patterns of chiefly cycling observed in the regional archaeological record, is a direct beneficiary of this research. The ethnohistoric record, by providing a highly detailed if essentially synchronic picture of native life, thus complements the diachronic and coarser-grained perspective available from archaeological analyses. Prior to addressing the ethnohistoric record directly, an introduction to the primary source materials is in order to document how they were created, what they contain, and their reliability.

The Nature of the Documentary Data Base

Sixteenth-century materials form the primary ethnohistoric data base employed in the present study, although references to a few later sources are provided when these illustrate details lacking in earlier documents. Almost all of the documentary sources are in Spanish, French, or English, with most in Spanish, reflecting the extent of exploration and settlement by these three nations during this period. There are two reasons for a documentary focus on the 16th century. First, it is during this period that comparatively "pristine" chiefdoms were encountered in the Southeast, although even during this century dramatic and destabilizing changes occurred within fairly short periods due to the effects of disease and conquest (Ramenofsky 1987; Smith 1987). Second, the most extensive sources date from the first half of the initial one and a half centuries of European exploration and settlement, from ca. A.D. 1520 to 1580. This corresponds to the greatest period of Spanish interest in and exploration of the Southeast, encompassing the explorations of Pánfilo de Narváez, Hernando de Soto, Tristan de Luna, and Juan Pardo, and the efforts to colonize La Florida at Santa Elena and St. Augustine (Figure 6).

Initial Contact (ca. A.D. 1500 to 1539)

The first European exploration of the interior Southeast is traditionally assumed to begin in 1513 with Ponce de Léon's "discovery" of Florida. From 1500 onward, however, Spanish ships were at least occasionally touching the southeastern Gulf and Atlantic coasts of what later became the United States, and were sometimes wrecked there. Léon's encounters were with the Calusa, a southern Florida group (Lewis 1978; Marquardt 1987, 1988; Widmer 1988). The extent of European contact even at this early date is indicated by the fact that the Indians Ponce de Léon met had apparently encountered Spanish previously (Swanton 1946:101).

Following initial settlement in the West Indies, the Spanish had quickly mounted search and discovery ventures throughout the Caribbean, looking for land, slaves, and other sources of wealth. The earliest well-documented Spanish venture in the general South Appalachian area took place in 1521 under the direction of Lucas Vásquez de Ayllón, one of the auditors of Santo Domingo, who sent a caravel under the direction of Francisco Gordillo to explore the northern coast of Florida, as the North American continent was then described. Ayllón, who was interested in establishing a settlement in the region, was at this point conducting advance exploration. On June 24, 1521 Gordillo and a second captain, Pedro de Quexó, made landfall at the mouth of a large river they

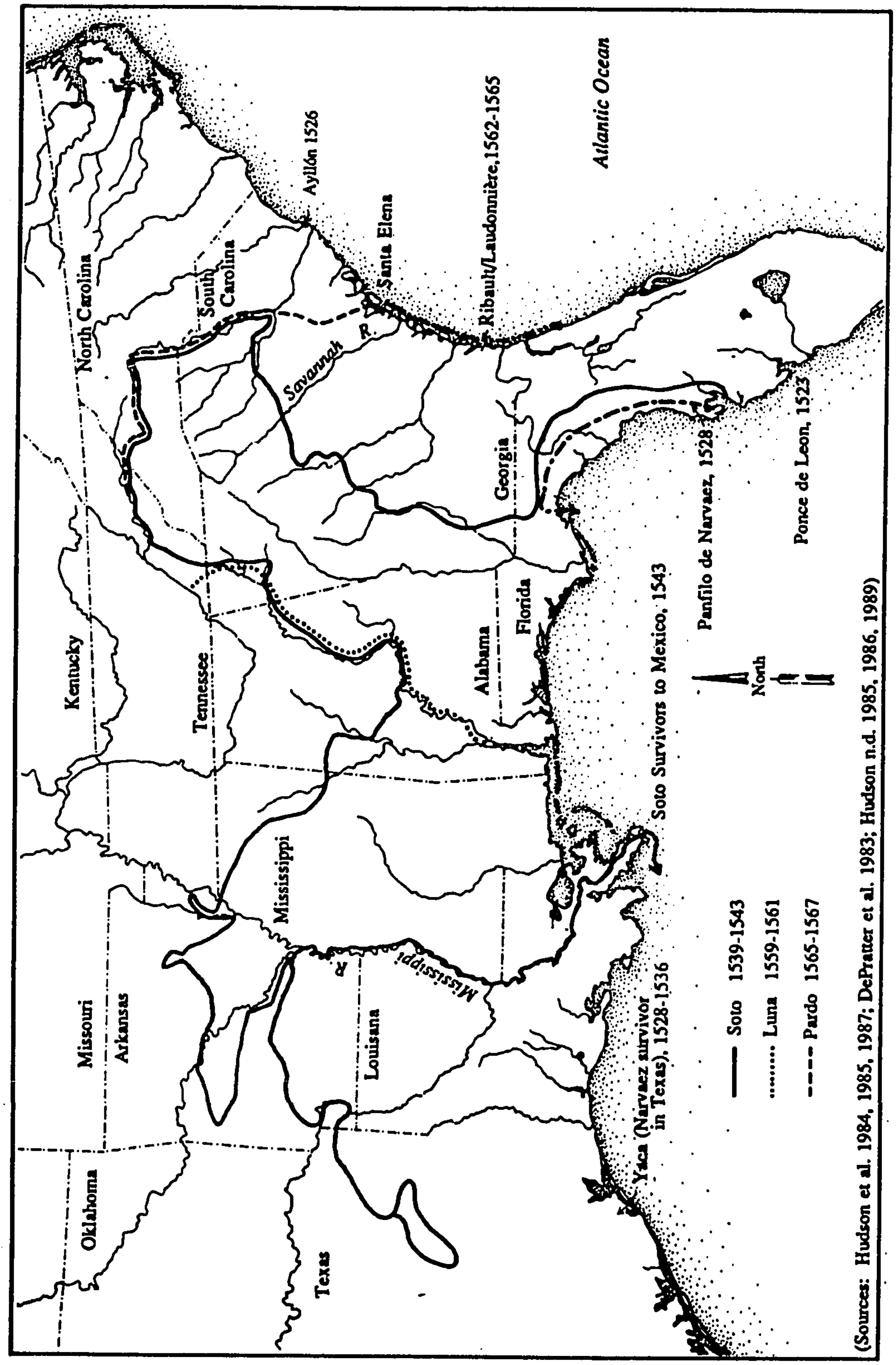


Figure 6. Sixteenth-Century European Exploration in the Southeastern United States.

named the St. Johns. The location, 33°30' north latitude, corresponds to that of Winyah Bay, where the Pee Dee and several lesser drainages enter the Atlantic, or possibly the Santee River (Hudson 1990:6). After brief explorations they seized some 70 of the local natives and carried them back to Santo Domingo for sale as slaves. From this unfortunate record of initial contact emerged what the great early 20th century ethnohistorian John R. Swanton (1946:36) has called "the longest description of any tribe in North America which can claim such an early date of record." This account, a lengthy description of the history and customs of the country by one of the captured natives, Francisco of Chicora, was recorded firsthand by the Spanish historian Pietro Martiere d'Anghiera (1457-1526).

Francisco, who was apparently a remarkable individual, was attached to Ayllón's household in Santo Domingo, where he learned Spanish. It was there that he met Anghiera, who was a chronicler for the Royal Council of the Indies, and who summarized the stories he heard from Francisco in the next to last of his decades in *De Orbe Novo* (Anghiera in McNutt 1912:II:259-269). Francisco's account contains numerous details about native life in the Carolinas, although seemingly fanciful items such as the herding and milking of deer caused Anghiera to remark "these fables and other similar nonsense have been handed down to the natives by their parents. ...Such is the story told to me, and I repeat it for what it is worth. Your excellency may believe it or not" (Anghiera in McNutt 1912:II:261, 268). It is perhaps because of this skepticism that Francisco's account is of particular interest, for Anghiera's wording implies an effort to give a faithful rendition. Aside from somewhat improbable heaven/hell imagery that may have been slyly added by Francisco to please Anghiera, who had been a chaplain to the court of Ferdinand II and Isabella, the account is of considerable value as it presents the first detailed description of Southeastern chiefdom societies, specifically those along the coast and in the interior of South Carolina (Baker 1974:59-74).

Francisco described a ranked, hierarchical society with settlements over large areas owing allegiance and tribute to specific communities and leaders. These rulers received deferential treatment from the commoners; dressed, lived, and ate better than their subjects; were carried about on litters; and resided in combination temple/dwelling areas. Substantial ritual activity associated with the planting and harvesting of crops was described, as was burial/mortuary ceremonialism and a passionate interest in ball games. Specific details included mention of feather mantle cloaks, stone idols in temples, cathartic beverages (the black drink?), and the weaving of fiber mats and clothes. Swanton, while curiously dismissing "tales of subjection and tribute," was so impressed with Francisco's account that he began an exegesis of it with the comment "in this narrative there appears to be very little not based on fact" (Swanton 1946:47).

Few references date from the period from 1521 to 1539 describing native groups in the general South Appalachian area, not because major attempts at exploration and colonization were lacking, but because few survived to tell of them. A brief account by Giovanni da Verazzano opens the period, describing events conducted in 1524 while in the service of France when he sailed along the east coast of the United States. At his initial landfall at about 34° north latitude, possibly at or near the mouth of the Cape Fear River, Verazzano met some natives, whose animal skins and bird feather robes he briefly described in a subsequent letter to Francis I (Verazzano 1881:82-91). The major events of this period, however, were the catastrophic Spanish attempts at colonization by Ayllón and Narváez.

In the summer of 1526 Ayllón and a party of 600 settlers attempted to establish a colony somewhere on the South Atlantic coast. Although opinions about the location of this colony, named San Miguel de Gualdape vary considerably — from the central Georgia to northern South Carolina coast (Hoffman 1990; Hudson 1990:7; Quattlebaum 1956) — discoveries by the De Soto expedition (discussed below) suggest that the probable location was somewhere near the mouth of the Santee River in central coastal South Carolina. Shipwreck, disease, and the subsequent factionalization of the survivors brought the colony to a disastrous end. Barely one-quarter of the party that left Santo Domingo in July made it back in early 1527, when the colony was abandoned. Descriptions of local Indian groups are minimal, as most contemporary records were absorbed with the magnitude of the tragedy that had occurred (Oviedo 1855:III:626-630). Ayllón's interpreters, including Francisco, deserted almost immediately upon landfall, precluding serious communication. Large communal houses were reported in use among the native groups living in the vicinity of the colony, as well as a brief description of ceremonial facilities where the bodies of important individuals were maintained (Oviedo 1855:III:630).

Aside from a few brief references about native life, the Ayllón colony is noteworthy in the study of chiefdom political organization because Spanish remains from it quickly found their way to the main temple at Cofitachequi, located some 200 km inland from the coast. During the De Soto entrada in 1540:

> in the town were found a dirk and beads that had belonged to Christians, who, the Indians said, had many years before been in the port, distant two days journey [Elvas in Bourne 1904:I:67].
>
> That same day the Governor [De Soto] and Ranjel entered the mosque and oratory of this heathen people, and ...found ...many beads of glass and rosaries with their crosses. They also found Biscayan axes of iron from which they recognized that they were in the government or territory where the lawyer Lucas Vásquez de Ayllón came to his ruin [Ranjel in Bourne 1904:I:100].
>
> We found buried two wooden axes, of Castillian make, a rosary of jet beads, and some false pearls, such as are taken from this country to traffic with the Indians, all of which we supposed they got in exchange, made with those who followed the Licentiate Ayllón. From the information given by the Indians, the sea should be about thirty leagues distant [Biedma in Bourne 1904:II:14].

The logical port two days canoe travel (?) distant from Cofitachequi, which was located near Camden on the Wateree River, would be downstream at or near the mouth of the

Santee, or possibly on Winyah Bay just to the north. This is in approximate agreement with Biedma's (1904:II:14) figure of 30 leagues or 103.5 miles [166.5 km], using a figure of 3.45 miles [5.55 km] per league (after Hudson et al. 1984:66). Minimally, the occurrence of artifacts from the Ayllón colony in a paramount center located at a considerable distance from their source indicates the extent of tributary or trading networks operating in the region (see also DePratter and Smith 1980). Other evidence, notably references to the tributary roles of the Escamacu and Sanapa, coastal South Carolina groups, suggest the sway of Cofitachequi extended to the Sea Islands (Hudson 1990:78-83).

In 1528 a second attempt to settle the Southeast also ended disastrously. That year Pánfilo de Narváez landed near Tampa, Florida with a force of several hundred men and proceeded to march inland to the north (Marrinan et al. 1990). Routed by continual sniping and skirmishing by warriors from Apalachee, a complex chiefdom occupying the region of the Florida panhandle, the expedition was forced to retreat to the sea somewhere near Pensacola Bay. Here they built a number of vessels and put to sea, attempting to follow the Gulf coastline to Mexico. The fleet was wrecked on the Texas coast and only four members of the expedition, after incredible hardships, survived to reach Mexico some eight years later in 1536. A narrative of this expedition by one of the four, Alvar Núñez Cabeza de Vaca, provides primary ethnohistoric detail on the Indians of coastal Texas. In an attempt to recoup his fortunes, Cabeza de Vaca tried to join De Soto's planned expedition and, dissembling about the condition of Florida, "gave them to understand that it was the richest country in the world" (Elvas in Bourne 1904:I:6). The two quarreled, however, and only De Soto ultimately returned to Florida. Had De Soto known the conditions Cabeza de Vaca had actually encountered, our knowledge of Southeastern Mississippian life might have been appreciably different.

The De Soto Entrada: A.D. 1539-1543

The De Soto expedition has been justly described by Swanton (1946:38) as "the most impressive of all Spanish attempts to conquer and settle the territory" of the interior Southeastern United States. De Soto, a former second in command to the Pizarros in the conquest of the almost unimaginable riches of the Inca empire in Peru, sought to find new riches in the northern continent. The magnitude of this expedition was immense: 600 men, over 200 horses, 100 or more servants and camp followers, and a large quantity of supplies and equipment including trade goods, hogs, mules, and dogs. Landing near Tampa Bay in May of 1539, the expedition proceeded into the interior where it spent the next four years, visiting the complex Mississippian chiefdoms of Apalachee, Ocute, Cofitachequi, Coosa, Tastaluca, and Chicaca to the east of the Mississippi, and Casqui, Capaha (or Pacaha, depending on the account), and many other societies to the west. The route the expedition took through the region has been the subject of extensive research (e.g., Swanton 1939), and has been masterfully reconstructed in recent years through a combination of ethnohistoric and archaeological research (Figure 6) (DePratter 1987a; DePratter et al. 1983; Hudson 1987, 1990; Hudson et al. 1984, 1985, 1987). De Soto died in Arkansas on May 21, 1542, and it was not until September of 1543 that the survivors of the expedition, some 300 men, finally reached northern Mexico after traveling by boat down the Mississippi and along the Gulf Coast. Having vanished completely and been given up as lost, they were received with great acclaim, in spite of the relative lack of success of the expedition. Their tenacity, in fact, led to invidious comparisons and criticism of the Coronado expedition, which had made an extensive but relatively brief foray into the Southwest shortly before, in 1540 (Vega in Varner and Varner 1951:622).

The members of the De Soto entrada spent over four years in the interior of the Southeast. The surviving accounts of the expedition form the earliest, and some would argue the only detailed record of pre-contact or proto-contact Southeastern chiefdoms. As Swanton accurately, if somewhat romantically noted:

> much of the territory penetrated by De Soto was practically unvisited for a hundred and fifty years afterward, and to Englishmen and Frenchmen the country and its people had sunk into obscurity and the story of the enterprise itself had become semi-legendary [Swanton 1932:570].

Native societies throughout the interior appear to have undergone precipitous organizational changes in the years immediately following initial contact (Smith 1987). In the vicinity of Georgia and the Carolinas the groups documented in the later historic era, specifically the tribes and confederacies present at the time of the English settlement of Charles Town in 1670, were pale reflections of the complex chiefdoms encountered by De Soto and his men. The earliest accounts are thus invaluable sources of information on the organization and operation of these societies, and hence matters relevant to the study of cycling.

The importance of these documentary resources can not be emphasized strongly enough. Charles M. Hudson, the region's foremost ethnohistorian for the study of contact-era native populations, has gone so far as to state that:

> the documents of the De Soto and De Luna expeditions, together with those of the Pardo expeditions, contain most of the historical information we are likely to ever possess on the history of the sixteenth-century Southeastern Indians [Hudson 1990:4].

Although the utility of these 16th century documents for the reconstruction of native political organization and evolution has seen some challenges (e.g., Boyd and Schroedl 1987; Sturtevant 1983), the success of the work of Hudson and his colleagues has largely discredited these notions. Any serious student of the Mississippian archaeological record, in fact, would be well advised to read these early accounts, starting with those from the De Soto and Pardo expeditions.

Four major documentary accounts of the De Soto entrada have survived to the present day. These are, in order of publication or appearance, the narratives of (1)

Rodrigo Ranjel (1904), written during the expedition and finalized some time before August 1546; (2) Luis Hernández de Biedma (1904), written in 1544; (3) the Gentleman of Elvas (1904), first published in 1557 and hence written some time before this; and (4) Garcilaso de la Vega (1952), completed in the late 1580s or early 1590s and first published in 1601. These accounts are briefly discussed in turn, but first it should be noted that one letter from De Soto himself survived the expedition. This document, written July 9, 1539, is instructive, for it gives De Soto's own opinion on the accuracy of native sources: "for what these Indians say I believe nothing but what I see" (De Soto in Bourne 1904:I:162). For a similar reason the three eyewitness accounts of the expedition, written soon after the fact, tend to be more highly regarded by modern scholars than the fourth, written almost half a century later.

The first of the four accounts to have been produced, at least in large measure, was that by Ranjel, De Soto's private secretary. This account is actually a diary of the events of the entrada, recorded either daily or at brief intervals. This account, covering the period from May 1539 through September 1541, was transcribed by Oviedo in Santo Domingo some time after Ranjel's return to the island, and prior to August 1546, when Oviedo left for Spain (Ranjel in Bourne 1904:II:48). Because it is a diary of events set down as they happened, this account is considered "the most reliable of all the accounts of the famous undertaking" (Swanton 1932:571; similar commentary appears in Bourne 1904:I:xv and Hudson et al. 1984:65). So detailed was Ranjel's account that Oviedo felt compelled to offer the following remarks:

> let not the reader marvel that the historian goes over, in exact detail, the days marches and rivers and crossings that this Commander encountered. ...because among those gentlemen who were with the army there was one named Rodrigo Ranjel ...who ...wrote down day by day at the end of his labors, every thing that happened [Oviedo in Bourne 1904:II:47].

While presenting valuable detail on the native societies in the region, the account additionally offers an instructive example of the insidious kind of bias that can occur in historic accounts: the deliberate falsification or distortion of information. In his last communication with Cuba, for example, De Soto ordered Ranjel that "even though he had found no good land, that he should write good news to encourage the men" (Bourne 1904:II:62).

The second account of the De Soto expedition to be prepared was that by Biedma, completed in 1544 shortly after the surviving members of the entrada reached Mexico. Luis Hernández de Biedma was the King's factor, and the narrative that he prepared was an official account of the expedition submitted to the Spanish crown. The shortest of all the accounts, the narrative is highly compressed and offers little in the way of detail about the native societies not found in the other accounts. Although in broad agreement with the Ranjel and Elvas accounts, because it is an obvious summary prepared up to several years after the events in question, it is generally considered unreliable as a source of specific information about the chronology of the entrada or the terrain that it passed over.

The third source, and the first of the De Soto accounts actually published, appeared in 1557 (Elvas in Bourne 1904:I:1-223). Written by an unidentified "Gentleman from Elvas" who accompanied De Soto, the account provides a wealth of detail about the expedition and the peoples it encountered. Although long considered less reliable than Vega's narrative, the discovery of the Ranjel and Biedma accounts in the mid-19th century provided "triumphant support" for the accuracy of this record (Swanton 1932:571; see similar commentary in Bourne 1904:I:viii). In spite of this, portions of the Elvas account have tended to be undervalued, particularly the numerous speeches attributed to various native rulers, such as those by Achese, Patofa, the Lady of Cofitachequi, Chiaha, Tali, Coosa, and Tastaluca. While literary devices, the speeches contain important references to customs such as tributary relationships and the matrilineal succession of chiefly leaders (Elvas in Bourne 1904:I:58, 64, 73-74) that suggest they are authentic in general content.

The fourth account of the De Soto entrada is Garcilaso de la Vega's *La Florida del Inca*, which was written between ca. 1587 and 1591 based on internal evidence, and published in Lisbon in 1601 (Bourne 1904:I:viii). Vega, who was born in 1537 and was hence a child at the time of the entrada, was the son of a Spanish officer and the sister of the last Inca. As a boy growing up in Peru Vega met some of the survivors of the De Soto expedition, and upon moving to Spain in 1560 he met several additional members. His account is based on the memories of at least three of these survivors, of whom the cavalier Gonzalo Silvestre is assumed to be his principal informant (Bourne 1904:I:viii-ix). The most extensive account, it is also regarded as the least reliable, primarily because it was written long after the events described (Swanton 1932:571; Hudson et al. 1984:655). *La Florida* thus diverges wildly from the other three accounts in specific detail, notably in matters of chronology, distance, travel time, and casualty figures. Thus, while Elvas records that 700 bearers accompanied De Soto from Ocute to Cofitachequi, Vega puts the figure at 8,000 (cf., Elvas in Bourne 1904:I:60, Vega in Varner and Varner 1951:282). At the battle of Mauvila both Ranjel and Elvas put the Indian's casualties at between 2500 and 3000 (Ranjel in Bourne 1904:I:97; Elvas in Bourne II:128), while Vega puts the figures at around 11,000 (Vega in Varner and Varner 1951:379).

Much has been made of Vega's inaccuracies, but this should not be used to discredit the source, since it stands as virtually the only sympathetic, detailed Spanish account of the Southeastern Indians produced during the 16th century, by someone justifiably and admittedly proud of his duel Spanish/Indian heritage. Furthermore, Vega's preface contains a lengthy discussion of both his methods and sources, and how he resolved discrepancies between conflicting accounts. Above all, he fully acknowledged the potential for error in his work, particularly the problems arising from his use of informant's dated memories and limited written accounts:

> The truth is that except in the beginning, these men observe no chronological sequences and no order of events in what they relate. Some occurrences they place before their proper time, and others they place after. Again, they name only a few of the provinces, and these they name without continuity. They simply tell the outstanding things that they saw as they remembered them. [Vega in Varner and Varner 1951:xl-xli].

Only recently have modern ethnohistoric reconstructions been prefaced with the honesty shown by Vega in *La Florida del Inca*. Swanton has noted:

> the tales which his aged soldier informants related to him were inexact, often exaggerated, but they were not the results of a deliberate intention to deceive. They represent the attempts of old men, unassisted by diaries, letters, notes, or other aids to the memory to recall the events in which they had participated so many years before. In so far as I have been able to check this material it appears to me that the quantitative and associational elements have suffered, while the qualitative elements have survived [Swanton 1932:751].

While subject to exaggeration, the Vega account is the richest in recounting details of Southeastern native life, and hence a source to be used, albeit with caution.

Later Sixteenth-Century Accounts

Following the De Soto entrada, Spanish exploration in the Southeast again paused for nearly a generation, as it did in the interval after the Ayllón and Narváez attempts at colonization in the mid-1520s. Interest in the area continued, however, particularly as Spanish vessels were occasionally shipwrecked along the Atlantic or Gulf coasts, often with considerable loss of life and treasure (Barcia in Priestley 1928:xxi). In the late 1550s the Spanish crown decided to establish colonies in the lower Southeast, to further Spanish expansion in North America, check potential advances of other European powers, and protect their shipping. On June 11, 1559, under the direction of Tristrán de Luna y Arellano an expedition of approximately 1000 colonists, 500 soldiers, and 240 horses sailed from Mexico, arriving in the area of Mobile Bay in mid-July (Priestley 1928:xx-xxvii). The area between Mobile and Pensacola bays was explored and a settlement established in the latter area. Unfortunately, a hurricane wrecked several ships and most of the food reserves in August, and by early 1560 the expedition was in great distress. Attempts to live off the countryside failed, and the colony had to be abandoned in early 1561.

An extensive documentary record exists from the De Luna expedition, much of it in the form of letters and petitions by the colonists to De Luna demanding their removal. Other documents that survive are records to and from exploring parties in the interior, and official reports to Santo Domingo and Spain. The accounts of the expedition are of interest here for their descriptions of native groups, some of which had been contacted previously by De Soto. A major expedition of 200 men and 50 horses spent several months in the interior in 1560, reaching the province and principal town of Coosa, since located at the Little Egypt site along the Coosawattee River in northwest Georgia. Recent archaeological and ethnohistorical research (Hudson et al. 1985) has permitted the detailed reconstruction of the movements of De Luna's parties in the interior. The descriptions of Coosa indicate that this powerful chiefdom was much reduced in size and power compared to its position in 1540, indicating that only the very earliest accounts are likely to be reliable guides to conditions during the prehistoric era.

Although abandoning their venture on the Gulf coast, the Spanish continued plans for settlement on the Atlantic coast in the early 1560s. In 1561 a Spanish fleet under Villafañe briefly explored the lower Atlantic coastline, entering the area later settled as Santa Elena. Before settlements could be established, though, a series of three French expeditions occurred, directly challenging Spanish claim to the area. The expeditions were by Ribault in 1562, Laudonnière in 1564/1565, and again by Ribault in 1565 (Bennett 1975:xiii-xxii). Several accounts survive from these expeditions, the most useful of which from an anthropological perspective are the narratives of René Laudonnière, first published in 1586, and the illustrations of Jacques Le Moyne de

Morgues, which appeared in 1591. A wealth of detail about the Indians of the Florida, Georgia, and South Carolina coast and their relations with groups in the interior was presented, prompting Swanton (1946:62) to state "to the Laudonnière expedition, however, we owe more of our knowledge of the ancient inhabitants of Florida than to the sum total of the Spanish sources." This statement is greatly overdrawn, particularly in light of the information that has been extracted from the De Soto, De Luna, and Pardo accounts in recent years, and indicates that care must be taken to avoid placing too much faith in some accounts and not enough in others.

The initial French expedition, under Jean Ribault, touched along the Florida to South Carolina coast from April through June 1562. In Port Royal Sound, somewhere near the modern town of Beaufort, South Carolina, Ribault left a colony of 28 men in a fortification christened Charlesfort prior to departing for France. Due to religious conflicts in France he was unable to return immediately to relieve the colony. After almost a year of waiting the men at Charlesfort, with native help, built a small boat and attempted to sail back to Spain with tragic results — many starved to death en route before being picked up by friendly shipping. The primary accounts of this first expedition were by Laudonnière (1975) and Ribault (1927). Ribault's account, written in England after fleeing the religious struggles he encountered immediately upon his return to France, was published in English in 1563. This account, *The Whole and True Discovery of Terra Florida,* contains a number of descriptions of the coastal Indians. Comparable detail is also found in Laudonnière's account, including a reference to the ruler of "Chiquola [Chicora, probably Cofitachequi], the great lord of that territory" (Laudonnière in Bennett 1975:28), indicating the extent of influence groups in the interior may have had on the coast.

Laudonnière himself commanded the second French expedition, sent out in 1564 to reestablish a French colony in the Southeastern region. Landing along the Florida coast, they established a settlement named Fort Caroline near the mouth of the St. John's

River. In mid-1565, in the meantime, a Spanish expedition to the same area was initiated, under the direction of Pedro Menéndez de Avilés, to colonize and to counter French activity in Florida. In August 1565 Ribault arrived with a third expedition to relieve Laudonnière, running into Avilés fleet, which had arrived a few days earlier, almost upon landfall. The subsequent battle was inconclusive, but the French fleet was subsequently wrecked in a storm. Most of the French forces, including Ribault, were killed by Avilés after surrendering. Avilés then attacked and destroyed Fort Caroline on September 20, 1565, and Laudonnière and a number of colonists escaped in one of the surviving vessels.

It is from the accounts of the survivors of this 1564/1565 French colony that most 16th century information on native groups in the lower Southeast from non-Spanish sources derives. Laudonnière, who was a participant in the events of all three expeditions, prepared extended descriptions on the coastal Indians that have been described as "exceedingly well-recorded geography and anthropology" (Bennett 1975:xix) and that prompted Swanton's enthusiastic tribute noted previously. Jacques le Moyne de Morgue's account and illustrations is noteworthy because of its detailed drawings of coastal Florida Indian life. The only comparable illustrations from the Southeast dating from this time level are those published in 1590 by John White depicting the coastal Algonkian groups of North Carolina and Virginia, groups encountered by the English expedition of Sir Richard Grenville in 1585 (White in Bry 1972).

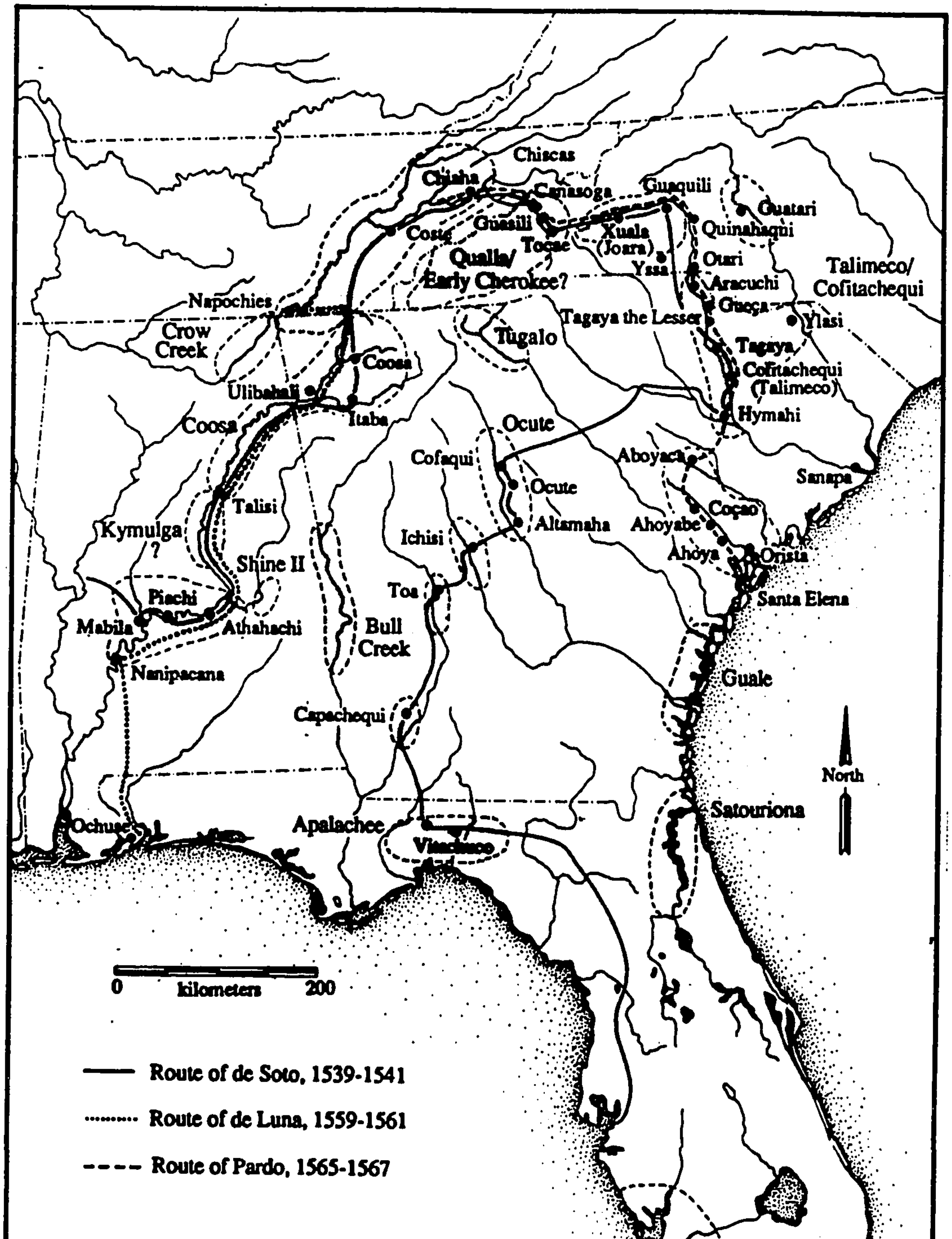
With the destruction of the French the Spanish under Avilés established two principal settlements along the Atlantic coast, at St. Augustine in 1565 and at Santa Elena in 1566. Detailed Spanish records of Indian life in the South Appalachian area, both along the coast and well into the interior, come from Santa Elena. This colony was maintained from 1566 to 1576 when the local Indians rose up and destroyed it, and from 1577, when it was reestablished, to 1587, when it was permanently abandoned (South

1979, 1980). Two major expeditions were sent into the interior from Santa Elena in 1566 and 1567, under the direction of Captain Juan Pardo, that have provided invaluable records of the location and description of native groups in South Carolina, central and western North Carolina, eastern Tennessee, and northern Georgia. This is because the areas visited by Pardo can be accurately determined from the accounts of these expeditions, which covered many of the towns and provinces visited by De Soto a quarter of a century earlier (DePratter et al. 1983; Hudson 1987, 1990; Hudson et al. 1984, 1985, 1987). This has led to major revisions in the traditional route of the De Soto expedition as formulated by Swanton (1939), with the result that many of the towns and provinces visited by De Soto in 1540 can finally be identified with a fair degree of certainty (Figure 7). This research has had important ramifications for archaeologists throughout the region, as documented in subsequent sections of this study.

There are four primary accounts of the Pardo expeditions (presented and analyzed by DePratter 1987; Hudson 1990; Ketchem 1954). Three of these, by Pardo, Francisco Martinez, and Juan de la Bandara, were fairly brief, while a second Bandara document (Bandara II), only recently discovered, was much more extensive, and contained the detailed figures on the direction and distance Pardo traveled each day that permitted DePratter and his colleagues (1983) to reconstruct the path of the expeditions. Pardo's account, a summary of both expeditions, was an official report prepared for Avilés in late 1567. Pardo:

> appears to have [been] a bluff and occasionally tough-minded soldier. His story is severely factual, and will remind some readers of Caesar, others of Xenophon. He admits that he forgets names and he may well oversimplify the diplomatic and religious results of his mission [Ketchem 1954:68].

His account contains place names and brief descriptive information for many Indian towns in the interior, including information about the number of chiefs met at each, and in some cases their relations with other towns. This information, duplicated in greater



(Sources: Hudson et al. 1985: 723, 725; Hudson et al. 1984: 69; DePratter et al. 1983: 133; Hudson n.d. Figure 2)

Figure 7. European Explorations and Native Societies in the Carolinas and Georgia in the General Vicinity of the Savannah River Valley.

detail in the other accounts, particularly Bandara II, is of particular value for delimiting political relationships over the region.

The second account, by Francisco Martinez, a soldier accompanying Pardo, covers only the second expedition, and was prepared in Santa Elena on July 11, 1567 at the request of Avilés. This statement, much briefer than Pardo's, is also more suspect, emphasizing as it does the bounty of the land, and the military exploits of a Sergeant Boyano that Pardo had left in the interior with 30 men during his first expedition. According to Martinez, Boyano had killed some 2500 Indians in two towns by the time Pardo arrived with the second expedition, a statement widely regarded as "a patent exaggeration" (Swanton 1946:655). Pardo's account, in contrast, notes only that Boyano had managed to get himself surrounded and cut off by the local Indians (Pardo in Ketchem 1954:72).

The third document, by Juan de la Bandara (Bandara I) is described by its translator, Ketchem (1954:78), as "a very brief abstract of the extensive Bandaras Document" (i.e., Bandera II). This document was prepared at Santa Elena on January 23, 1569 and is a markedly compressed account of the second expedition, skipping numerous events mentioned in the Pardo account. The manuscript contains greater detail on Indian life than the two other short accounts. The fourth account, Bandera II, contains greater detail on the Pardo route and the peoples encountered than is found in the other three accounts. This information has proven to be invaluable, not only for revolutionizing our knowledge of the routes of the early explorers, but also for its contribution to our understanding of native life in the 16th century (DePratter and Smith 1980; DePratter et al. 1983; Hudson 1987; 1990).

Following the abandonment of Santa Elena in 1587 Spanish activity north of Florida was restricted to missions established along the coast. Missionary activity contracted southward after this time, and was largely restricted to Georgia and Florida after A.D. 1600. Major Spanish accounts after this period detailing native life include Vera's account of Governor Pedro Ibarra's visit to coastal Georgia in 1604 (Serrano y Sanz 1912) and the accounts of two voyages by Francisco Fernandez de Ecija along the South Carolina coast in 1605 and 1609 (Ecija in Waddell 1980:222-232). With the collapse of Spanish interest in the exploration of the Southeast in the late 16th century, it is not until almost a century later, with the English settlement of the Carolinas and the French settlement of Louisiana, that fairly extensive documentation of native groups in the interior reappears. By this time, however, the collapse and reorganization of the native chiefdoms into different and less complex societies had occurred, under the combined effects of disease and depopulation, exposure to European trade goods, missionization efforts along the coast, and the emerging slave and deerskin trade (Dobyns 1983; Ramenofsky 1982; Smith 1987). While documents dating to the late 17th century and after describing native life are extensive, they should be used to extrapolate earlier conditions only with great care.

Mississippian Political Processes: Contributions from Ethnohistoric Research

Regional Political Structure

In recent years, ethnohistorical investigations have made significant contributions to our understanding of the late prehistoric and protohistoric periods in the South Appalachian area, particularly to the area encompassing the Savannah River Valley, the archaeological test case employed in the present analysis. Two major developments have been: (1) the synthesis of a large body of information on coastal Georgia and South Carolina contact period populations (e.g., Jones 1978; Waddell 1980), and (2) the identification of many of the early contact period sites in the interior visited by the early Spanish De Soto, De Luna, and Pardo expeditions, providing a linkage between the extant archaeological record from these sites and areas and the fairly detailed historic accounts of the complex chiefdoms, such as Ocute, Coosa, and Cofitachequi, described in these areas (DePratter et al. 1983; Hudson et al. 1984, 1985, 1987).

Ethnohistoric examination of South Atlantic coastal groups has included Waddell's work summarizing much of the early historic literature on the native inhabitants of the South Carolina Sea Island zone. These people practiced intensive agriculture and had a organizational structure similar to that in simple chiefdoms, and as such were apparently employing a Mississippian way of life. A high degree of seasonal mobility was documented among some of the coastal South Carolina groups, who were aggregated in central towns only over a fairly limited portion of the year. A description of the movements of the Orista [for which Edisto Island and the Edisto River are named] by Fray Jean Rogel in 1570 gives some indication of the extent of this movement:

> At this season [summer] they were congregated together [to plant and tend crops], but when the acorns ripened they left me quite alone, all going to the forests, each one to his own quarter, and only met together for certain festivals, which occurred every two months, and this is not always in the same spot. ...the inhabitants of these twenty houses [at the main village of Orista] scattered themselves in twelve or thirteen different villages, some twenty, some ten, some six, and some four. Only two families remained. ...for nine out of the twelve months they wander without any fixed abode [Rogel in Waddell 1980:147-151; see also Le Moyne 1875:12].

Rogel, a Jesuit with degrees in Arts and Medicine, had spent 14 months as a missionary living with the coastal South Carolina Indians, and had learned their language. His statement suggests that seasonal population dispersal, a possibility only rarely considered in Mississippian settlement models, may have been common in at least some areas, particularly in coastal areas or perhaps during times of stress (see Chapter VI). Given this, evidence for sedentary village life in South Appalachian Mississippian societies should be considered a proposition to be confirmed and not a given, as is commonly assumed.

In a comparable fashion Jones (1978) and other researchers have summarized historic information on coastal Georgia native groups, many of whom were incorporated into the Spanish mission system that was active in the Sea Island area throughout the latter half of the sixteenth and well into the 17th century (Larson 1978, 1980a). Many of these records date to the late 16th century or later, however, well after initial contact, and tend to focus on events at or around mission sites. While providing a valuable perspective on the process of acculturation, and occasionally containing useful information on native conditions (Larson 1978), their utility for reconstructing pre-contact native political conditions and lifeways is fairly limited when compared with the records available from the South Carolina coastal zone.

Recent ethnohistoric research has also led to the identification of specific communities visited by early explorers, permitting the use of early accounts in the archaeological reconstruction of life at these sites and in these societies. The primary accounts of the 1539-1543 De Soto entrada (in chronological order, Ranjel 1539-41; Biedma 1544; Elvas 1557; Garcilaso de la Vega 1605) provide fairly detailed descriptions of the central towns of the chiefdom-level societies or provinces the Spaniards encountered, and some of these societies were later revisited by the Luna (1560-1561) and Pardo (1566-1567) expeditions. Three geographically extensive, complex chiefdoms described in the South Appalachian area at the time of initial European contact that are of particular relevance to the analysis of late prehistoric populations in the Savannah River Valley include the province of Coosa, centered on northwest Georgia and extending from east-central Alabama into eastern Tennessee; the province of Ocute and a series of lesser chiefdoms in central Georgia, and the province of Cofitachequi extending from central South Carolina into central and western North Carolina (Figure 7) (DePratter et al. 1983; Hudson et al. 1984, 1985, 1987; Hally et al. 1989).

The 16th century accounts provide considerable detail on the political organization and tributary relationships within these societies. Paramount chiefdoms like Cofitachequi and Coosa were complex chiefdoms characterized by two administrative levels with large areas, including many communities and lesser (quasi-autonomous) chiefdoms ruled from a central town. The most complex polities were geographically extensive, covering tens of thousands of square kilometers, with subsidiary towns and polities held together through alliance networks and the use or threat of force. The De Soto entrada provides a direct record of the extent and power of these chiefdoms, and the degree to which these leaders were obeyed, facts which the expedition was quick to exploit. Upon leaving the principal towns of both Cofitachequi and Coosa, for example, De Soto forced the principal chiefs to accompany him. The Gentleman of Elvas's account noted that by taking the Lady of Cofitachequi De Soto:

> brought us service in all the places that were passed, she ordering the Indians to come and take the loads from town to town. We traveled through her territories a hundred leagues, in which, according to whatever we saw, she was greatly obeyed, whatsoever she ordered being performed with diligence and efficacy. ...Guaxule [was] the farthest limit of her territories [Elvas in Bourne 1904:I:70].

Guaxule [Guasili] has been placed on the extreme upper reaches of the Catawba River, some 240 km to the north of Cofitachequi, indicating the extent of influence of this contact era paramount Mississippian chiefdom (Figure 7).

The identification of Cofitachequi with the mound complexes near the modern town of Camden on the Wateree River in central South Carolina by Hudson and his colleagues is a particularly important contribution of recent research, and one of direct relevance to the present study, which focuses on Mississippian political evolution in the Savannah River Valley. Smaller towns at distances of up to several days travel time were described as aligned with or subject to the domination of Cofitachequi, which was thus the center of a fairly respectable prehistoric province located in central South Carolina (DePratter 1983, 1989; Hudson 1986, 1990; Hudson et al. 1984). Earlier investigators, most notably Swanton (1939), had been nearly unanimous in placing Cofitachequi along the Savannah River. Prior to the 1980s, only Baker (1974) had presented extended evidence placing Cofitachequi on the Wateree River, and his placement was somewhat to the south of its currently accepted location. One of the contributions of the extensive collections analysis associated with the present research is the demonstration that the central and lower Savannah basin was largely depopulated at the time of the De Soto entrada (see Chapter VI), making it an unlikely candidate for the location of Cofitachequi, and supporting the recent reconstructions of the De Soto and Pardo routes.

The extent and power of the chief and territories of Coosa (Coca) is described in comparable terms. Upon leaving Chiaha, a town subject to Coosa in eastern Tennessee, Elvas noted:

> they traveled for six days, passing by many towns subject to the Cacique of Coco until they arrived at Coca, on Friday, the sixteenth of July [1540]. The Cacique came out to receive him at the distance of two crossbow shots from the town, borne in a litter on the shoulders of his principal men, seated on a cushion, and covered with a mantle of martenskins of the size and shape of a woman's shawl: on his head he wore a diadem of plumes, and he was surrounded by many attendants playing upon flutes and singing. ...The Indians [gave] up their habitations by order of their Cacique, and in which the Governor and his men took lodging. In the barbacoas was a great quantity of maize and beans; the country, thickly settled in numerous and large towns, with fields between, extending from one to another, was pleasant. ...It was the practice to keep watch over the Caciques that none should absent themselves, they being taken along by the Governor until coming out of their territories; for by thus having them the inhabitants would await their arrival in the towns, give a guide, and men to carry the loads [Elvas in Bourne 1904:I:81-83].

A similar summary is provided by Ranjel:

> This chief [of Coosa] is a powerful one and a ruler of a wide territory, one of the best and most abundant that they found in Florida. And the chief came out to receive the Governor in a litter covered with the white mantles of the country, and the litter was bourne on the shoulders of sixty or seventy of his principal subjects, with no plebeian or common Indian among them. ...In order that the land should not rise in revolt nor refuse them supplies they took him with them [Ranjel in Bourne 1904:I:112-113].

The effectiveness of the Spaniard's strategy of seizing chiefly elites, which was employed at both Cofitachequi and Coosa, illustrates the authority and power these individuals commanded. The province of Coosa has been the subject of extensive archaeological and ethnohistoric research in recent years (Hally and Langford 1988; Hally et al. 1989; Hudson et al. 1985, 1987).

The third principal chiefdom encountered by the Spanish in the interior South Appalachian area was Ocute, one of several polities occupying the central Georgia area. The descriptions of this chiefdom suggest that it was less complex and extensive than either Coosa or Cofitachequi. Although Ocute appears to have been the most powerful polity in central Georgia, other autonomous "provinces" or polities were reported nearby, including Cofaqui and Patofa. These are described as "being at peace with the chief of Ocute" (Elvas, in Bourne 1904:I:57). Although the nature of the relationship between these centers is unclear, there is no report of a dominance relationship like that noted between Coosa or Cofitachequi and other towns. The central Georgia chiefdoms, given their small areal extent and relative autonomy from one another, may reflect simple chiefdoms in the "collapse" or nonintegrated phase of regional chiefly cycling, while complex chiefdoms like Coosa and Cofitachequi represent the "integrated" phase of such a process (Henry T. Wright, personal communication).

The ethnographic accounts of these and other Southeastern chiefdoms, which were visited at various times in the 16th century, provide a explicit historical record of cycling, and illustrate changing levels of organizational complexity within these societies (Figure 8). The fortunes of the Coosa, for example, fluctuated between the time of De Soto's visit in 1540, when it was a complex chiefdom and a regional power, to the time of the De Luna expedition in 1560, when the chiefdom had apparently fragmented and nearby towns were refusing tribute. By the time of the Pardo expeditions, however, Coosa had apparently regained its preeminence (Hudson 1990; see below). The chiefdom(s) of Ocute, visited only during the De Soto expedition, in contrast, appears to have declined thereafter (Hudson 1986, 1990; Williams and Shapiro 1987). Cofitachequi, which was unquestionably a paramount chiefdom early in the 16th century,

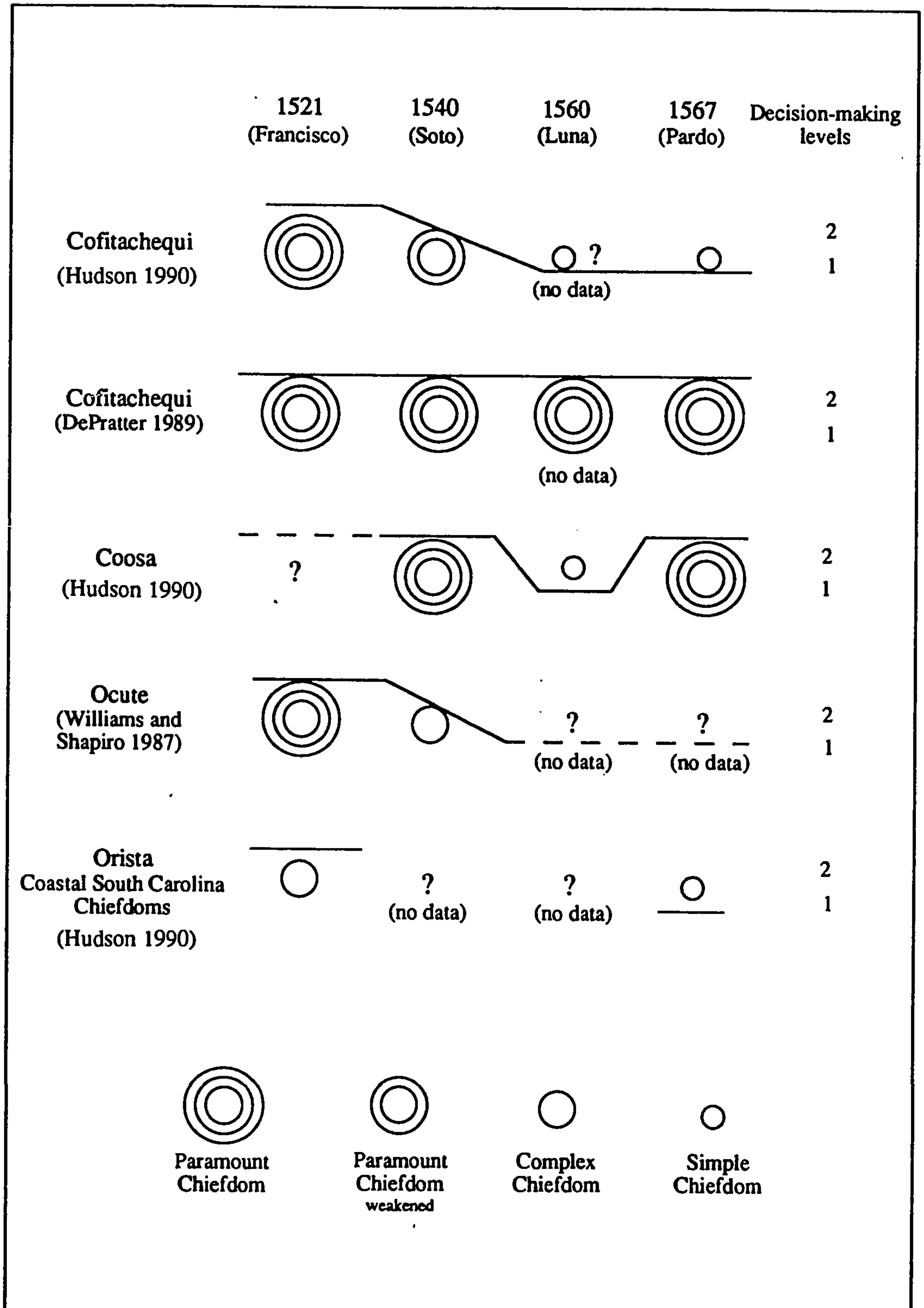


Figure 8. Cycling in the South Appalachian Area: Evidence from Ethnohistoric and Archaeological Sources.

may have fragmented by the time of the Pardo expeditions (Hudson 1990). This is a controversial inference, however, since DePratter (1989), using the same sources, has argued that the chiefdom maintained its preeminence throughout the 16th century.

During the early historic period, it must be cautioned, the effects of contact and particularly disease on chiefdom organizational structures need to be taken into consideration (Smith 1987). These effects do not need to be considered, of course, when analyses are directed to unambiguous prehistoric cases. When greater time depth is added through archaeological analyses of the immediately preceding Mississippian societies in the region, though, the political changes observed in the early contact era, at least during the first two-thirds of the 16th century, do not appear all that unusual. Throughout the preceding half millennium paramount centers had emerged and declined throughout the region, and organizational structures had fluctuated between less complex and more complex systems, albeit, at least in part, for different reasons.

The evidence about the geographic extent of complex Southeastern chiefdoms that is emerging from the ethnohistoric data is almost revolutionary. Previous estimates of the size of these societies have tended to be much smaller. Peebles (1978:375), for example, estimated that the extent of the Moundville phase, centered on the second largest Mississippian mound group in the eastern Woodlands, was on the order of 120 river km in length. Hally (1987) has recently suggested an even smaller average size, on the order of ca. 40 km, or two days travel time from the center, was the maximum dimension of most chiefly polities in the Southeast. Parallels with more complex polities of comparable scale are sometimes cited in these analyses, with Renfrew's (1975) concept of an "Early State Module" cited most frequently. While these figures may accurately reflect the distance within which communities were under the constant control of a center, they do not in any way indicate the control exerted by major centers at specific times. The early contact-era provinces of Coosa and Cofitachequi, based on the locations of towns reported by the Spanish as owing tribute and allegiance, for example, extended over much larger areas, on the order of three hundred or more km in linear extent. Major centers undoubtedly exercised indirect control over societies at great distances, with power relationships acknowledged through tribute mobilization and presentation and uneven alliance structures.

It is thus becoming evident that the complex chiefdoms of the early contact-era Southeast were composed of a number of subsidiary chiefdoms linked together in alliance, conquest, or tributary relations (see also Baker 1974:201; DePratter 1983:21-22). While the size of these constituent units may cluster around distinctive modes, variation due to local environmental (i.e., physiographic or resource structure) or political conditions will probably need to be considered on a case by case basis. Over the next 10 to 20 years a major challenge for Mississippian researchers will be delimiting how Southeastern chiefdoms were constituted, that is, their extent, internal structure, as well as how they evolved over time.

Settlement Hierarchies and Tributary Networks

The early sources provide a number of specific details about the operation of Southeastern chiefdoms, including information about settlement hierarchies and tributary and exchange networks. Large numbers of towns were tied together in the more complex, areally extensive polities such as Coosa or Cofitachequi, which were characterized by at least two administrative /decision-making levels consisting of primary chiefs and their retinues and lesser chiefs and their retinues. Commoners had little direct contribution to decision-making in these societies. A three-level settlement hierarchy consisting of major ceremonial and political centers, larger villages/small centers, and scattered small hamlets or villages is documented for Coosa and indicated for Cofitachequi in the De Soto and Pardo accounts (by the time of the De Luna and Pardo expeditions Coosa had declined appreciably, hence accounts of the polity from those expeditions are less reliable indicators of pre-contact conditions). Evidence from the De Soto accounts about Ocute is more ambiguous, but the presence of "cabins" scattered along streams between major centers suggests the presence of a two-level settlement hierarchy, and a single decision-making level consisting of chiefs and their retinues over the commoner population (Ranjel, in Bourne 1904:II:89-90). This matches the pattern of dispersed hamlets away from centers observed archaeologically (Smith and Kowalewski 1980; Kowalewski and Hatch 1988).

The Pardo expedition documents are particularly valuable sources on the nature of political relationships within and between chiefdoms in the South Appalachian area, in this case between the inhabitants of Cofitachequi and those of related communities to the north along the Catawba/Yadkin River. The existence of a noble elite distinguished from the commoners in dress, and hence readily recognizable to Pardo, is clearly indicated:

> at the said Canos [Cofitachequi]... I found a great number of chiefs and Indians... From there I left for Tagaya, where I brought together the Indians and chiefs. ...I went to Tagaya the Lesser and had all the Indians and the chief brought together. ...From there I went to Ysa, who is a great chief; there I found many chiefs and a great quantity of Indians. ...From there I went to an outlying district of the said Ysa, and brought together the Indians [Pardo in Ketchem 1954:70-72].

It is interesting to note that the number of "chiefs" or elite varied considerably from community to community, and there is a suggestion that at least in some cases the number of "chiefs" present indicated the size and importance of that particular community (Table 1; Hudson 1990:62).

The elite supported and reinforced the status of the chief. They ruled in outlying communities, and served as something of a privy council as necessary. Decisions were typically made by the chief, although often after discussion with his principal supporters (Elvas in Bourne 1904:I:75; Laudonnière in Bennett 1975:14). While the power of a chief might have been considerable, the stability and permanence of the position

Table 1. Chiefs and Elites at Towns Visited by Pardo in 1565-1567

Location	Year	Observations	Number of Chiefs	Reference
Orista	1567	" chief"	1	(Bandaras II in Hudson 1990)
"Buena Esperanca" [at Orista]	1567	Pardo met with: Yetencunbe Orata, Ahoyabe Orata, Cocapoye Orata, and Uscamacu Orata; Orista Orata now described as the principal chief	4	(Bandaras II in Hudson 1990)
Uscamacu	1567	"chief"	1	(Bandaras II in Hudson 1990)
Ahoyabe	1566	"a small village tributary to Ahoya"	0?	(Bandaras I in Ketcham 1954:78)
Cozao	1566	"a rather important chief"	1	
Aboyaca	1567	"chief"	1	(Bandaras II in Hudson 1990)
Guiomae	1567	Pardo met with Emae [Guiomae] Orata, Pasque Orata	2	(Bandaras II in Hudson 1990)
Canos (Cofitachequi)	1565	"a great number of chiefs"	• •	(Pardo in Ketcham 1954:70)
	1566	"a large number of Indians and chiefs"	• •	(Pardo in Ketcham 1954:72)
	1566	Pardo met with: Canos Orata, Ylasi Orata, Sanapa Orata, Unugugua Orata, Vora Orata, Yssa Orata, Catapa Orata, Vehidi Orata, Otari Orata, Uraca Orata, Achini Orata, Ayo Orata, Canasaca Orata	13	(Bandaras II in Hudson 1990)
Ylasi	1567	Pardo met with Ylasi Orata, Uca Orata, Tagaya Orata, and Saruti Orata	4	(Bandaras II in Hudson 1990)
Tagaya	1565	"chiefs"	•	(Pardo in Ketcham 1954:70)
Tagaya the Lesser	1565	"the chief"	1	(Pardo in Ketcham 1954:70)
?	1566	"a chief whose name I do not remember"	1	(Pardo in Ketcham 1954:72)
Gueca [Waxhaw]	1566	Pardo met with: Gueca Orata, Unharca Orata, Herape Orata, Suhere Orata, Suya Orata, Uniaca Orata, Sarati Orata, and Ohebere Orata	8	(Bandaras II in Hudson 1990)

Table 1. (continued) Chiefs and Elites at Towns Visited by Pardo in 1565-1567

Location	Year	Observations	Number of Chiefs	Reference
Ysa	1565	"is a great chief; there I found many chiefs"	• •	(Pardo in Ketcham 1954:70)
Otari	1566	Pardo met with: Joara Mico and Otariyatika Orata	2	(Bandaras II in Hudson 1990)
Juada	1565	"large number of Indians and chiefs"	• •	(Pardo in Ketcham 1954:70)
	1566	Pardo met with: Joara Mico, Atuuqui Orata, Osuguen Orata, Aubesan Orata, Guenpuret Orata, Ustehuque Orata, three Pundahaques Oratas, Tocae Orata, Guanbuca Orata, Ansuhet Orata, Guaruruquet Orata, Enxuete Orata, Utahague Orata, Anduque Orata, Jueca Orata, Qunaha Orata, and Vastu Orata	18	(Bandaras II in Hudson 1990)
	1566	On a separate occasion Pardo met with: Quinahaqui Orata, two Catapa Oratas, Guaquiri Orata, and Yssa Chiquito Orata	5	(Bandaras II in Hudson 1990)
	1566	Pardo also met with: Chara Orata and Adini Orata		(Bandaras II in Hudson 1990)
Quinahaqui	1565	"chiefs and the Indians, who are numerous"	• •	(Pardo in Ketcham 1954:71)
Quirotoqui	1566	"a chief"	1	(Pardo in Ketcham 1954:72)
	1566	Pardo met with: Quinahaqui Orata, Yssa Orata, Cataba Orata, and Uchiri Orata	4	(Bandaras II in Hudson 1990)
?	1566	"a chief whose name I do not remember"	1	(Pardo in Ketcham 1954:72)
Guatari	1565	"more than 30 chiefs"	>30	(Pardo in Ketcham 1954:71)
"Quatariaatiqui"	1566	"large number of Indians and woman chiefs"	• •	(Pardo in Ketcham 1954:72)
	1566	"chiefs"	•	(Pardo in Ketcham 1954:74)
	1566	"two women chiefs... with... other chiefs"	>2	(Bandaras I in Ketcham 1954:79)
	1566	39 chiefs	39	(Bandaras II in Hudson 1990)
Racuchili	1565	"large number of Indians and chiefs"	• •	(Pardo in Ketcham 1954:71)
"Racuchi"	1566	"chiefs"	•	(Pardo in Ketcham 1954:72)
Quirotoqui	1566	"a chief"	1	(Pardo in Ketcham 1954:72)
Tocalques [Tocae]	1566	"a great number of Indians and chiefs"	• •	(Pardo in Ketcham 1954:72)
	1566	"the chiefs"	•	(Pardo in Ketcham 1954:74)

Table 1. (continued) Chiefs and Elites at Towns Visited by Pardo in 1565-1567

Location	Year	Observations	Number of Chiefs	Reference
	1566	Pardo met with: Tocae Orata, Enuque Orata, Enxuete Orata, Xeneca Orata, and Atuqui Orata	5	(Bandaras II in Hudson 1990)
Canchi [Cauchi]	1566	"a large number of Indians and chiefs"	**	(Pardo in Ketcham 1954:73)
	1566	"the chief"	1	(Pardo in Ketcham 1954:74)
	1566	Pardo met with: Cauchi Orata, Nequase Orata, Estate Orata,	6	(Bandaras II in Hudson 1990)
		Tacoru Orata, and Utaca Orata, and Quetua Orata	6	
	1566	On a separate occasion Pardo met with: Canosaca Orata	1	(Bandaras II in Hudson 1990)
	1566	On another occasion Pardo met with: Cauchi Orata, Utahaque Orata, Anduque Orata, Enjuete Orata, Guanuguaca Orata, Tucahe Orata, Guaruruquete Orata, and Anxuete Orata	8	(Bandaras II in Hudson 1990)
	1566	On still another occasion Pardo met with: Cauchi Orata, Joara Chiquito Orata, Canasahaqui Orata, Arasue Orata, Guarero Orata, Arande Orata, and two, lesser oratas	8	(Bandaras II in Hudson 1990)
Tanasqui	1566	"chiefs"	*	(Pardo in Ketcham 1954:73)
Chihaque [Chiaha]	1566	"chiefs"	*	(Pardo in Ketcham 1954:73)
Satapo	1566	"the chief"	1	(Pardo in Ketcham 1954:73)
Coosa	1566	"a great cacique"	*	(Bandaras II in Hudson 1990)

* = number of chiefs unknown but presumedly low

** = number of chiefs unknown but presumedly large ultimately depended upon public acceptance of this power, and particularly the support of other elites. Swanton, who tended to minimize the authority of Southeastern chiefs, interpreted the Natchez accounts to indicate their power was dependent, to a fair measure, on the good will and support of other chiefly elites:

> it is plain that in practice the absolutism of the Great Sun depended upon his age and personal abilities, and that his power was considerably curtailed by the other members of the Sun caste, particularly the other town chiefs, back of whom again lay that great body of usage and prejudice which no sovereign can indefinitely override [Swanton 1946:650].

Membership in the elite appears at least partially due to ascribed, or inherited social position, although ability was sometimes recognized, particularly in the case of men who had distinquished themselves in warfare (Gibson 1974:132).

The elite in some cases lived in close physical proximity to the chief, as evidenced by statements such as that by Le Moyne (1875:12; also in Swanton 1922:352), referring to Indians on the South Atlantic Coast, who noted that "the chief's dwelling stands in the middle of the town. ...Around this are the houses of the principal men." This appears to be a common strategy used by chiefs worldwide. Among the matrilineal Lunda, for example, a chief's close kinsmen (paternal and uterine kin) lived around him and were trusted, while relatives or persons from other lineages were located at a greater distance (Turner 1957:322-323). From this same elite could come possible successors to the position of paramount, through legitimate succession, or through conquest or rebellion. Usually, however, the relative status of the elite was clearly indicated. By serving as litter, awning, or fan bearers, as documented by De Soto at Cofitachequi, Coosa, and Tastaluca (Elvas in Bourne 1904:I:65, 81, 101), for example, the noble class demonstrated their subservience to the chief, and at the same time their close proximity both physically and socially.

The chief's residence was often set apart from the homes of commoners and sometimes served as a combination house, elite council room, and temple. The accounts contain explicit references to mound building and use. Thus, the dwelling of Tastaluca was described as "on a high place" (Elvas in Bourne 1904:I:87), while Biedma noted that "it is the custom of the Caciques to have near their house a high hill, made by hand, some having the house placed thereon" (Bourne 1904:II:28). The temple of Talimeco at Cofitachequi is described as a "house of worship... on a high mound and much revered" (Ranjel 1904:II:101). The chief was also set apart in death, and extensive mortuary rituals frequently accompanied his or her death. Among coastal groups this included the burning of his house (Laudonnière in Bennett 1975:14-15). The bodies of the dead were maintained in elaborate mortuary structures, of which the temple of Talimeco in Cofitachequi has provided the fullest description, but one that is is to some extent exaggerated (Vega in Varner and Varner 1951:315-322; see also Biedma in Bourne 1904:II:14 and Swanton 1932; this temple was visited by De Soto, and was located near the central town of the province of Cofitachequi in South Carolina).

Tributary arrangements within Southeastern chiefdoms are particularly well documented (DePratter 1983:170-178). Within the major provincial-level polities, for example, lesser elites submitted tribute to those higher in the hierarchy. Tribute thus served to help define and formalize social relationships in these societies, particularly those concerned with status positions, alliances, and trade. Tribute included both foodstuffs and luxury goods, both of which were stored in large quantity:

> Maize is kept in [a] barbacoa, which is a house with wooden sides, like a room, raised aloft on four posts, and has a floor of cane... [around] the houses of the masters, or principal men... are many barbacoas, in which they bring together the tribute their people give them of maize, skins of deer, and blankets of the country. These are like shawls, some of them made from the inner bark of trees, and others of a grass resembling nettle, which, by treading out, becomes like flax [Elvas in Bourne 1904, I:53].

> In the barbacoas were large quantities of clothing, shawls of thread, made from the bark of trees, and others of feathers, white, gray, vermilion, and yellow, rich and proper for winter. There were also many well-dressed deer-skins of colours drawn over with designs, of which had been made shoes, stockings, and hose [Elvas in Bourne 1904:I:66].

The early sources indicate that chiefs maintained barbacoas filled with food in outlying settlements, and could call on these stores when they wished. When De Soto's army arrived at Ilapi, a town some three days to the northeast of Cofitachequi, they found "seven barbacoas of corn, that they said were there stored for the woman chief" (Ranjel in Bourne 1904, II:100). Food reserves in storage in many of the Southeastern societies encountered by De Soto were reported as extensive. Thus the entrada, consisting of over 600 men, was able to spend the winters of 1539 and 1540 at Apalachee and Coosa, respectively, drawing on the food reserves of those complex chiefdoms. In discussing the Apalachee case, DePratter (1983:165) notes that De Soto's entire army was provisioned for five months from stores in or near the central town. The De Soto accounts, and in other sources from the 16th century, contain numerous examples of the chief's ability to call upon stores located in other towns. As noted previously, De Soto's strategy of capturing and carrying along native leaders wherever possible was predicated upon this fact.

Tribute served to acknowledge power relations within and between chiefdoms in the Southeastern United States. DePratter (1983:176) cites a number of descriptions of tribute collection by subject chiefs in outlying communities for submission to the paramount. Tribute could be paid voluntarily or collected through the threat or use of force. Withholding tribute was considered an act of rebellion and could trigger punitive expeditions and warfare, and in Cofitachequi seizing tribute was considered a capital offense (Elvas in Bourne 1904 I:70, 101, 154). Luxury goods such as bark blankets, deer and marten skins, and other valuables appear to have constituted tribute between elites, and are commonly mentioned as goods sealing alliances or acknowledging power relationships; bulk foodstuffs, in contrast, do not appear to have moved over great distances or served a similar role (Elvas in Bourne 1904 I: 65, 91, 129; Ranjel in Bourne

1904 II: 86, 99).

Hudson (1990:110), noting that Pardo observed Indians distinguishing tribute in the form of food from tribute in the form of deerskins, has suggested that tribute from towns closest to centers probably included a great deal of corn and other foodstuffs, while communities located farther away probably submitted more readily transported luxury goods. Bulk transport probably was most effective between communities along navigable watercourses. Use of watercraft by native groups is well documented in the 16th century accounts, and their use to transport corn, albeit by the Spanish, is specifically mentioned in the Pardo accounts (Hudson 1990:132-134). These same accounts also note that Pardo ordered native leaders from a number of communities to transport bulk foodstuffs over considerable distances to Cofitachequi (Hudson 1990:134), indicating that the Spanish, at least, considered such movement feasible.

Among elites the exchange of prestige goods appears to have been a way of sealing or maintaining alliances and of acknowledging the power or position of another elite or community. Throughout the entrada, for example, De Soto was welcomed by native chiefs offering gifts of blankets, deer and marten skins, and other valuables, in addition to food and housing (Ranjel in Bourne 1904:II:86, 99; Elvas in Bourne 1904:I:65, 91, 129). These were precisely the kinds of items accounted as tribute by the natives themselves, and it is probable that the gifts were an attempt to placate an unknown and potentially dangerous enemy, while simultaneously attempting to enter into a reciprocal alliance relationship with him. The act of presenting tribute, therefore, was an acknowledgement of power and a statement of relationship. The giving of gifts was not merely one way, from subject to ruler, but was also a method by which the paramount could demonstrate his own power and prestige. It thus served as an important form of competitive display. Thus, the chiefs of Pacaha and Casqui in northeast Arkansas, who De Soto met later in the entrada, were "each striving to outdo the other in the magnitude of [their] gifts" to De Soto (Elvas in Bourne 1904:I:129), although in this case each undoubtedly also hoped to use the favor they gained with De Soto to the other's disadvantage.

While foodstuffs were apparently typically dispersed to storage facilities scattered throughout the chiefdom, luxury or prestige goods tended to be maintained in the temples in the central towns of these societies (DePratter 1983:138). This suggests that while prestige-goods distribution was limited to the elite, food products may have been more widely redistributed, to elites and commoners alike, or at least held in reserve to accommodate periods of crop failure or harvest shortfall. The centralized control of wealth by the elite appears to have been closely linked to their maintenance of power. The distribution of luxury goods and captives to followers is well documented, and appears to have been a successful method of maintaining supporters among the lower ranks (Laudonnière in Bennett 1975:15). Disruptions in prestige-goods exchange or distribution network would have a profound impact and, as noted in Chapter II, signal organizational instability and shifting power relationships within a chiefdom or a region (Peebles and Kus 1977).

Ideological and Secular Authority Structures

Iconographic representations and the veneration of chiefly ancestors can be interpreted as devices to legitimize and reinforce the ideology of sacred chiefly power that permeated and gave structure to early Southeastern Mississippian life. Brown (1976:126; 1985) and Knight (1986) have defined three roughly similar foci of this socially defining sacred power. According to Brown (1985:102-129) these were: (1) the temple/mortuary-based ancestor cults, (2) the chiefly elites, with a warrior cult subsumed or co-opted under this sphere, and (3) communal earth or fertility cults. The first two spheres were the domain of the elite and functioned to reinforce their prestige and status. The third, in contrast, encompassed all sectors of society. Knight's (1986:680-681) perspective is essentially the same, with Mississippian religion consisting of three interacting cult institutions, each with its own complex imagery and iconography, including (1) a warfare/cosmogony complex subsuming chiefly elites, (2) a communal earth and fertility cult co-opted by commoners and symbolized by mound construction, and (3) a more or less organized priesthood responsible for elite temple/mortuary maintenance and community ritual, hence possibly serving to mediate tensions between the elite and commoner constituents of the other two institutions. The stability of elite authority structures, and hence of individual Mississippian polities, was directly related to the strength or importance attached to these ideological structures.

The cult surrounding the veneration of chiefly/elite ancestors appears to have been the central focus of the Mississippian ideological sphere. Major sites throughout the Southeast are characterized by the presence of temple/mortuary complexes where the bodies of the elite were maintained in honored status in shrines that were often physically and, hence, symbolically elevated above and maintained apart from the surrounding populace. Objects of wealth, sumptuary devices, weapons, statuary, fetishes, and sacred relics — what Brown (1985:106) has called "condensed symbols of sacred ancestral power" — were held within these temple-shrines in addition to the remains of the noble dead (see also Knight 1986:679). An extended description of one such shrine, the temple of Talimeco where the sacred wealth and chiefly elite of Cofitachequi were placed, was recorded in Garcilaso de la Vega's account of the De Soto entrada (Varner and Varner 1951:315-325). This location may well be that of the Adamson Mound group near Camden, South Carolina (DePratter et al. 1983).

Ties to ancestral territories and to the actual bodies of ancestors, rather than to ceremonial facilities such as mounds and earthworks, appears to have been a particularly important aspect of Mississippian ideology (Brown 1985:104; Knight 1986). There is convincing ethnohistoric evidence that these shrines were the ideological centers of individual polities. Desecration of a rival society's temple, specifically its ancestral burials, was considered the ultimate insult and a primary goal in warfare. There are numerous examples from the De Soto entrada supporting this inference. The description of the sacking of the principal town of Capaha by Casqui is particularly graphic:

> But once assured that there was no one within the town to oppose them, the Casquins made evident the rancor they felt for its inhabitants, for they slew whatever men they could lay their hands on. ...Afterward they sacked the entire town and in particular the houses of the lord, which they robbed with more contentment and approbation than any others for no other reason except that they were his. Furthermore, they seized numerous women and children, among whom were two of the many wives of Capaha. ...Not content with having sacked the town and the houses of the Curaca and with having made what slaughter and seizures they could, the Casquins moved on to the temple in the large public plaza, which was the burial place of all who had ever ruled that land - the father, grandfathers, and other ancestors of Capaha. The temples and sepulchres, as we have stated elsewhere, are the most venerated and esteemed sites among the natives of Florida...
>
> Summoning all of their forces so that everyone might enjoy the triumph, the Casquins went to this temple and sepulchre, and since they realized how much Capaha (proud and haughty because of their not having attacked previously) would resent their daring to enter and desecrate this place, they not only proceeded within but committed every infamy and affront they could. Sacking it of all ornaments and riches, they took the spoils and trophies which had been made from the losses of their own ancestors. They threw to the floor each of the wooden chests which served as sepulchres, and for their own satisfaction and vengeance as well as for an affront to their enemies, strewed upon the ground the very bones and bodies the chests enclosed. Afterward not content with having cast these remains to the ground, they trod upon them and kicked them with utter contempt and scorn [Vega in Varner and Varner 1951:437-438].

This was not an isolated incident during the entrada. Comparable desecration occurred when the Indians of Ocute first reached Cofitachequi in South Carolina, and when the Guachoyas entered Anilco, probably in northern Louisiana (Vega in Varner and Varner 1951: 292-293, 493). Undermining an elite faction's authority, by striking at a source and inspiration for its power, would be one way a rival faction could co-opt or bring about the relocation of retinues or commoner labor forces. Permanent site abandonment might follow such desecration; the attached dishonor might have been such to preclude any reuse, regardless of the extent of the facilities in place (although Capaha himself appears to have set his temple back in order; Vega in Varner and Varner 1951:45, see also DePratter 1983:63).

There is further evidence from the early Spanish accounts to support the inference that towns or centers might be abandoned by their own populations upon desecration, or defeat in warfare. The town of Vitachuco in Florida was destroyed by its inhabitants upon their defeat by the Spanish under De Soto. A Spanish troop, returning to the town some time after its warriors were routed in battle:

> discovered that the entire place had been laid waste and burned. Its walls had been leveled to the ground and all of the bodies of the Indians who had died ...were now piled up in the fields, for their people had resolved not to bury them. The town had been destroyed and abandoned, as the Indians later explained, because it had been founded in an unpropitious and doomed place; and the dead had been left without sepulchre to serve as food for birds and wild beasts because they were ill-starred men who had not succeeded in their purpose. For among the Indians this was a most infamous punishment, which, according to their pagan custom, was bestowed upon those who were unlucky and unsuccessful in war as well as those who were accursed and nefarious. In this manner, therefore, they had rewarded both the town and those who died there [Vega in Varner and Varner 1951:198].

Equation of ancestor cult with land ownership/holding is fairly common among more complex societies (Fortes 1945); hence the desecration of an ancestral shrine is a challenge not only to a chief's authority *per se* but also specifically to his right to hold/control territory. There is thus ethnohistoric evidence to suggest that ancestral shrines were the ideological centers of individual polities and that centers, once abandoned or desecrated, might not be reoccupied.

This behavior may help to explain why major Mississippian centers, once abandoned, were not invariably reoccupied. In this view, newly ascendant Mississippian polities were ideologically bound to remain centered about their place of origin. Relocation to previously dominant centers where elaborate ceremonial facilities were already in place does not appear to have invariably or even typically occurred. The central town of the 16th century province of Coosa, apparently at the Little Egypt site

(Hudson et al. 1985:732), for example, was characterized by only small mounds. This suggests that, even given a probable decline in mound building at this time (see Chapter IV), that this center was just emerging, and perhaps had fairly shallow time depth. Its physical appearance, with mounds less than 4 m high, was certainly far less imposing than the nearby Etowah site, which was characterized by mounds up to 20 m high. By the early 16th century, however, Etowah had lost its former regional preeminence, and was apparently a tributary town to Coosa (Hudson et al. 1985:728). Occupying former centers of power, even those with impressive physical facilities, does not, therefore, appear to have been a prerequisite for claiming or maintaining leadership in some Southeastern chiefdom societies. The size and number of mounds on a site, furthermore, does not invariably equate with its position in the local political hierarchy.

The iconography of the elite chiefs and powerful warriors was expressed by three themes according to Brown (1985): (1) the chiefly litter, (2) the chunky player, and (3) the falcon warrior. There are a number of archaeological traces of this iconography that can tell us something of the nature and strength of local legitimizing ideologies. Emblems of office — badges of chiefly power or elite status — included the columella pendant and a heart-shaped apron. Specific emblems may have been used by the elite of particular polities. The distribution in time and space of the distinctive entwined rattlesnake design known as the "Citico" style gorget, for example, appears to be coextensive with the polity of Coosa (Hudson et al. 1985:Figure 7), although in this case the emblem occurs almost exclusively with young women and appears to reflect an age-grade (Hatch 1975:133). Chiefly litters, described in De Soto's encounter with the *caciques* of Coosa, Cofitachequi, and other Southeastern polities, were found in Mound 72 at Cahokia and are sometimes depicted or suggested on gorget and pottery motifs. Chunky players are also sometimes depicted on gorgets and chunky stones are a fairly common item on Southeastern Mississippian sites. The game is thought to have been a mechanism for integrating the population through the play of individuals or teams, just as during the historic period (Hudson 1976:421-425).

The third major symbol of the chiefly elite was the falcon impersonator, perhaps the single most distinctive of all Mississippian symbols. The falcon impersonator is typically shown brandishing a club in one hand and carrying a severed head or head-shaped rattle in the other (Brown 1985:Figures 19-21). Perhaps the most famous representation of a falcon impersonator is that on a copper plate from Etowah (Figure 9); one of the elite burials from that site appears to have been similarly costumed (Larson 1971b). The falcon impersonator is thought to have been the primary symbol of a major military cult dominated by the elite, but in all probability co-opting especially brave or talented commoners. Another probable military cult symbol, the monolithic axe, is assumed to have been a non-functional high-status item. In Mississippian society, warriors stood midway between the chiefly elite and commoners. Brown (1985:140) suggests that the ubiquity of warrior symbols indicates that warfare was quite common, and that it probably served as a mechanism for mediating social tension by providing commoners a means for increasing their personal status (see also Gibson 1974). Peaceful conditions, interestingly, may have been undesirable and a source of instability.

In Knight's view, the warfare/cosmogony complex served to legitimize social inequality by providing for an elite monopoly of "two critically important kinds of esoteric knowledge and ritual manipulation: first, that associated with mythological beings, and second, that associated with the supernatural aspects of success in warfare" (Knight 1986:680). Warfare iconography, consisting of elaborate, labor intensive, and essentially nonutilitarian elements, such as copper-covered celts, monolithic axes, or flint swords, served to link membership in the elite with societal success in warfare. In a similar fashion, cosmogonic imagery, which Knight (1986:677) describes as "representational art with mythic content," specifically the occurrence of imaginary

Figure 9. Elite Iconography from the Southeastern United States: The Falcon Warrior. (Adapted from Phillips and Brown 1978:268; Brown 1985:100)

composite human/animal creatures, further served to accentuate the nature of the supernatural world and the elite's close ties with this domain. Thus, to Knight (1986:685), religion provided "the context to Mississippian political power" rather than something set apart from it.

The third major sector of Mississippian iconography encompassed communal earth/fertility beliefs (Brown 1985:123-129; Knight 1986:678, 680-681). These were closely linked to maize agriculture, the success of which was, of course, of great importance to local Mississippian societies. Earth/fertility iconography and beliefs were identified, to some extent, with the position of the chief, although all sectors of society appear to have shared in them (Brown 1985; Knight 1986; Waring 1968a:51-53; Waring and Holder 1945). To Knight (1985, 1986:678) platform mounds were the principal symbol of Mississippian community and social identity to both commoner and elite populations, and hence of these cults. Because commoners participated in mound construction as part of periodic rites of intensification, these structures served as a focus for the communal earth/fertility cults. Since the strength and well-being of society was thought to be bound up in the condition of the temple/mortuary complex, maintenance of these facilities was as important to commoners as to elites, resulting in their incorporation and active participation in renewal/rebuilding ceremonies.

Fertility cults, elite iconography, and ancestor worship thus combined to symbolize, and legitimize, the positions and aspirations of the participants in major sectors of Southeastern Mississippian societies. The diverse symbolism, furthermore, served to accentuate and simultaneously mediate social tension between elites and commoners, and between rival elites, in these nonegalitarian societies. Chiefdom organizational stability was tied to the strength of these institutions, and the success with which they were able to address these potentially divisive forces.

<u>Succession to the Chieftainship</u>

As noted in Chapter II, how succession operated was critical to the stability of individual chiefdoms. Internecine warfare, commonly over succession to the chieftainship, was rife in Southeastern society. The early Spanish accounts are filled with stories of rebellion, treachery, and warfare directed toward obtaining chiefly authority. Prevention of factional competition while a chief was alive depended on the skill with which potential rivals were controlled. The death or weakening of a chief would frequently trigger a period of upheaval, which would continue until a successor could consolidate his power.

Chiefly succession appears to have been matrilineal in most Southeastern Mississippian polities, that is, succession passed from a chief to his sister's son, or nephew (DePratter 1983:100-110; Hudson 1976:185-195) (Figure 10). Direct evidence for this pattern was observed by members of the De Soto entrada in the South Appalachian area. At Chiaha, for example, the young *cacique* noted that "an uncle of mine governs this country, in my place, til I be of mature age" (Elvas 1557, in Bourne 1904, I:76), while at Cofaqui, where the chief was an old man, "his nephew governed for him" (Ranjel in Bourne 1904, II: 91).

While succession was theoretically based on kinship, and typically was matrilineal, whether it was secure in these societies is highly debatable. DePratter, taking an extreme position, has argued that succession was a routine matter, in part because of the institution of regency was reported in several societies:

> Apparently the order of succession in the Southeastern chiefdoms was strongly enough enforced that this [where children succeeded to the chiefdomship before they were old enough to handle the job] was not a major problem, but simply one to be dealt with in turn. ...In short, succession served to maintain continuity within the Southeastern chiefdoms, and those chiefdoms were able to last through time in part because they had strong rules governing succession to the office of chief [DePratter 1983:108, 110].

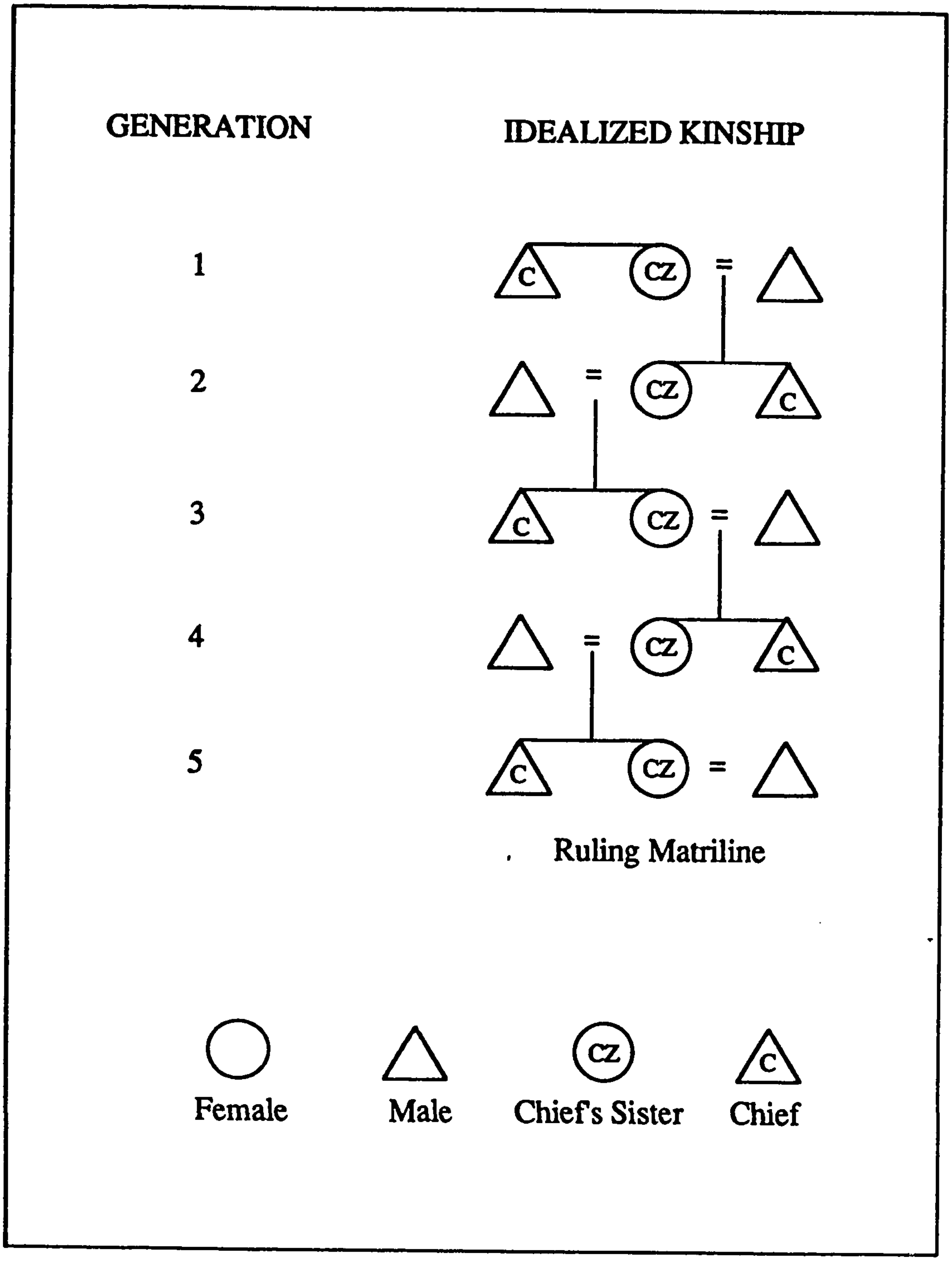


Figure 10. Matrilineal Succession to Chiefly Leadership in Southeastern Mississippian Society.

There is a considerable body of evidence from these same historic records, as well as supporting archaeological and ethnographic data both from the Southeast and from other parts of the world where chiefdoms existed, to indicate that uninterrupted or unchallenged succession was far from typical. DePratter (personal communication) has since indicated that succession in Southeastern chiefdoms probably took a range of forms depending on the local situation.

Strict adherence to rules of inheritance dictating succession appears to have been unlikely where obvious differences in power bases or ability existed between the designated heir and rival elites. Lawson, although referring to groups in the Carolinas at a much later date, around A.D. 1700, noted that violence sometimes accompanied succession to the chieftainship:

> The succession falls not to the king's son, but to his sister's son, which is a sure way to prevent imposters in the succession. Sometimes they poison the heir to make way for another, which is not seldom done, when they do not approve of the youth that is to succeed them. The king himself is commonly chief Dr. in that cure [Lawson 1967:205].

The chief himself, or other principal elites close to him, might thus do away with potential heirs that did not meet expected leadership standards.

While genealogical ranking was unquestionably important in succession, so too was secular power, as illustrated by an exchange recorded between the rival chiefs of Pacaha and Casqui in northeast Arkansas:

> there was much contention, as to which of them would sit on the right hand of the Governor. Pacaha said to Casqui: "You know well that I am a greater lord than you, and of more honorable parents and grandparents, and that to me belongs a higher place." Casqui replied as follows: "True it is that you are a greater lord than I, and that your forbears were greater than mine. ...But you know well that I am older and mightier than you, and that I confine you in your walls whenever I wish [Ranjel in Bourne 1904, II:143-144].

The size and stability of rival elite power bases, as well as their genealogical position, were undoubtedly important considerations when power passed from one leader to another.

In a classic example of elite competition for the office of chief, Marquardt (1987:104-108; 1988:179-184) has summarized historic accounts describing the events associated with the succession of paramounts in the 16th century non-agricultural Calusa chiefdom of south Florida. Accession to office in the Calusa chiefdom at this time was marked by severe social disruption, something in all probability brought on, at least in part, by recent European contact, the effects of disease, and the appearance of new sources of wealth. Adoptions and marriages were arranged among allied factions to ensure and legitimize the eventual succession of a particular candidate, and factions apparently planned or encouraged incidents damaging to the authority of principal rivals. As Marquardt (1988:187) has noted: "an ostensibly orderly, supernaturally sanctioned succession to the seat of power was in fact beset by rivalry, jealousy, and tension." Power was consolidated following one succession by the execution of some 15 town chiefs suspected of treachery, defined as suspected allegiance to other factions or leaders. One Spanish account, by the Jesuit priest Juan Rogel, described the chief of the Calusa as "dancing about with the heads of four chiefs whom he had been informed intended to rebel and go over to his enemies with their people. For this he had them slain" (Vargas Ugarte 1935:91, cited in Marquardt 1988:180). While competition for chiefly office unquestionably existed in Southeastern chiefdoms, the Calusa examples suggests that extreme competition and violence may have been common during periods of instability and, indeed, were characteristic of such periods. This same example also indicates that chiefs could deal with threats of rebellion quickly and harshly.

Succession may have followed more regular lines in larger and more stable polities. The importance of the principle of orderly matrilineal succession may be reinforced by the presence of female chiefs at Cofitachequi at the time of the De Soto entrada, and at Guatari at the time of the Pardo expeditions. Hudson (1990:66), noting that there is no evidence for the presence of female chiefs elsewhere in the Southeast at this time (although others are observed later, in 17th century Virginia), has suggested that these women may have held their position because there were no surviving males in the ruling matriline. Cofitachequi had recently undergone severe disease-induced depopulation at the time of the De Soto entrada, to the point where the chroniclers referred to abandoned towns near the center (Elvas in Bourne 1904:I:66). The woman ruler of Cofitachequi was described as a widow by Vega (Varner and Varner 1951:304), prompting Hudson (1990:67) to remark that "if succession was matrilineal, as seems likely, the truth may be that she lacked a brother rather than a husband." It is likely that the chiefdom of Guatari underwent similar stress. Both of these cases may document Southeastern chiefdoms striving to maintain an orderly process of matrilineal succession in periods of severe stress, with the woman chief's male children expected to succeed to the chiefdomship.

Resolving archaeological evidence for the succession of elites is difficult, because of the short time scales involved, although there is ethnohistoric support for the inference that the death of a chief may have been marked by the construction of new mound stages in many Southeastern chiefdoms. This possibility is clearly indicated among the Natchez, although the account documenting this process dates to well after initial contact, to the early 18th century:

> When the great chief dies they demolish his cabin and then raise a new mound, on which they build the cabin of him who is to replace him in this dignity, for he never lodges in that of his predecessor. The old men prescribe the laws for the rest of the people, and one of their principles is to have a sovereign respect for the great chief as being the brother of the sun and the master of the temple [Le Petit in Swanton 1911:103].

Accounts of burials of chiefly elites in mounds also exist about this time from among the Chitimacha of the Mississippi delta area, and among the Choctaw (Swanton 1946: 726, 729). In the Choctaw case, communal charnal houses were covered over with earth once full, and there is a suggestion that a new charnal house was then built on that location, and the process repeated.

Marriage and Post-Marital Residence

Mechanisms dictating permissible marriage ties together with post-marital residence patterns can have an affect on the stability of chiefdom organizational structures. Post-marital residence in the Southeast was typically matrilocal (Murdock 1967:114), although most of the cases for which good data exist date to well after contact. Accordingly, men would relocate to their wive's communities upon marriage. To reduce the influence of males marrying women in the chiefly lineage, and hence relocating in close physical proximity to the center of chiefly power, specific rules were in place in some Southeastern chiefdoms to suppress these individuals, and any political ambitions they might have. Thus, among the Natchez:

> The princesses of the blood never espouse any but men of obscure family, and they have but one husband, but they have the right of dismissing him whenever it pleases them, and of choosing another among those of the nation, provided he has not made any other alliance among them. If the husband has been guilty of an infidelity, the princess may have his head cut off in an instant; but she is not herself subject to the same law, for she may have as many lovers as she pleases without the husband having any power to complain. In the presence of his wife he acts with the most profound respect, never eats with her, and salutes her with howls as is done by her servants [Le Petit in Swanton 1911:103].

The marriage of the chief's sister to an "obscure" commoner, and keeping of him in a subservient position, would ensure that potentially destabilizing rivals did not move too close to the center of power. From this example it can be seen that at least some of the social rules in place in Southeastern chiefdoms had the effect of minimizing factional conflict.

A pattern of matrilocal residence would indicate that heirs to succession would have stayed within individual communities, at least until marriage. Upon reaching maturity, however, given the prevailing post-marital residence rules, chiefly heirs might be required to marry outside the local community. These practices would have dramatically reduced the possibility of chiefly succession continuing within a given community unless rules granting exceptions were in play. This appears to have been the case. Commoners in most Southeastern chiefdoms appear to have been monogamous, while elite polygyny is well documented among the early accounts (Swanton 1946:701-709). Typically, wives either relocated to the chief's house, or remained in their own home. Among the Natchez, men could:

> have as many wives as they chose. Nevertheless, the common people generally have but one or two. This, however, is not the case with the chiefs. ...Although they have many wives, they keep but one or two in their cabins; the rest remain at the houses of their parents, where they go to see them when they wish [Le Petit in Swanton 1911:97].

Chiefly elites thus appear to have been exempt from matrilocal post-marital residence rules. How this process operated warrants further discussion since organizational stability in these societies undoubtedly depended upon continuity in leadership within specific communities. Where marriages were unstable, furthermore, alliances based upon marriage were also likely to be unstable (Gluckman 1950; Radcliffe Brown 1935/1952).

Polygyny and other elite marriage arrangements were important mechanisms by which status and power relations were acknowledged, alliances were sealed, and administrative structures filled in Southeastern chiefdoms. Although ethnohistoric accounts indicate that polygyny and the out-marriage of high status females was common among elites in Mississippian chiefdoms (Hudson 1976:199ff), how these rules were followed appears to depend upon the relative status of the participants. Given the importance of the chief's sister in producing his successor, and the presence of mechanisms such as commoner marriage, alliances by marriage in dominant Southeastern societies were probably sealed through the position of the chief rather than through his sister. That is, elite female outmarriage in complex Mississippian chiefdoms below the level of the ruling lineage was probably unidirectional, from lesser to more dominant elites. While the highest female elites had to marry commoners, lesser female elites, particularly those from other communities, could have married upward. Such a strategy would cement alliances as well as acknowledge power relationships. Marriage between elites of roughly equal status may have occurred to foster alliances. In subservient communities or polities alliance with higher centers may well have been sealed through the female line, with either the relocation of women to the center, or the marriage of one of the chief's relatives or supporters to a female elite in the outlying community.

Adherence to a pattern of matrilocal post-marital residence (except for the chief) would be an effective method of dispersing brothers or other close male relatives, thus building up a regional power base while minimizing the potential threats that might arise from their close proximity (Figure 11). The presence of a number of close kin at a center in positions immediately below the chief in authority could have prompted conflict upon the death or perceived weakening of this individual. There is evidence from the 16th century accounts to indicate that vassal chiefs administering outlying centers were often the direct kin of the paramount, and probably appointed by him (DePratter 1983:25-28). Thus, Satouriona, a paramount occupying the region of the St John's River in Florida, was described by Laudonnière as having "thirty vassal chiefs under him, of whom ten were his brothers" (Bennett 1975:76), and comparable situations were described during the De Soto entrada. The strategy of dispersing near-kin through marital alliances, while initially stabilizing, would create problems later on, as these elites built up their own power bases, and as questions arose about how their successors would be chosen (Figure 12). A critical question would be whether the children of relocated elites (in the matriline they married into) would succeed to power in these centers, or whether new elites/administrators would be imposed from above, from the paramount center. Thus,

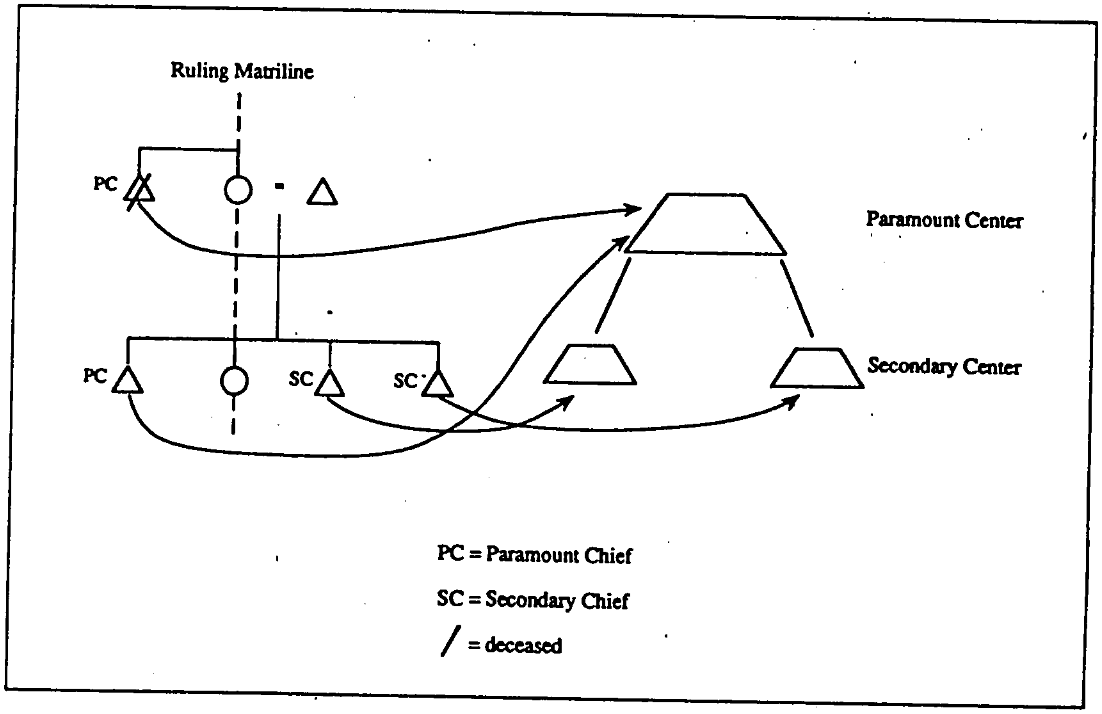


Figure 11. Dispersion of Chiefly Elites in Southeastern Mississippian Chiefdoms: Advantages of Matrilocal Post-Marital Residence Patterns.

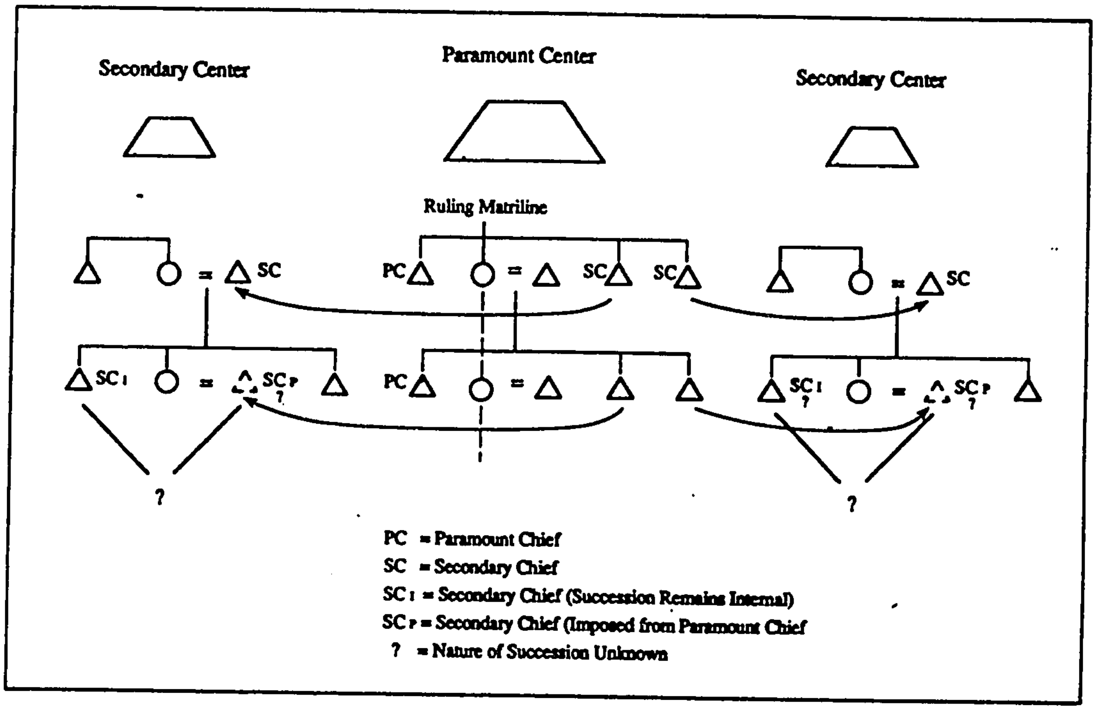


Figure 12. Dispersion of Chiefly Elites in Southeastern Mississippian Chiefdoms: Sources of Instability in Later Generations.

matrilineal succession coupled with matrilocal residence comprised a structurally ingrained, potentially destabilizing characteristic of Southeastern Mississippian society.

Fortunately, other effective mechanisms existed to keep an heir at the former paramount's center or to relocate him there upon the death of the former chief. The presence of ceremonial facilities, notably temple/mortuary complexes requiring the presence of the chief at the central town, was one method of ensuring such a relocation. The maintenance of temple/mortuary complexes would ideologically predispose an elite succeeding to the chiefdomship to remain near or relocate to the central community. Where succession was interrupted, specifically when a rival seized power, this same ideological predisposition could prompt the relocation of the center to the community where the new chief's ancestral temple/mortuary complex was located.

Another problem with matrilocal post-marital residence systems is that it tends to create groups of males with no vested interest in working together within individual communities (Divale 1984). That is, males linked by propinquity rather than kinship tend not to cooperate with one another (Turner 1957:76-77). In a society with matrilineal descent and matrilocal post-marital residence this has advantages and disadvantages for a chief. His core male kinsmen tend to outmarry, reducing his primary support base, while males marrying in, being unrelated, may raise challenges to his position. Given their numerical minority, this is unlikely, although a wise chief would undoubtedly try to either co-opt or eliminate potential rivals. As a Yao chief expressed this situation to a newly installed headman "Beware how you treat the men who have married into the village. They have it in their power to break the village" (Mitchell 1951:328). Opposed arcs of structures or discrete clusters of structures within a community may indicate groups of people with allied interests, who may be potential fission groups (Turner 1957:80). Community reorganization to accommodate increasing social tension may occur prior to actual disruption or fissioning. Such reorganization should be detectable archaeologically, although delimiting its cause is likely to be considerably more difficult.

The kinds of problems besetting matrilineal kin groupings in general have been aptly summarized by Turner:

> Male members of such a sibling group are opposed to their own children who belong to a different sibling group, belong potentially to a different village, and belong actually to a different genealogical generation. ...Female members of a uterine sibling group are opposed through marriage to their brothers. ...They are opposed to their brother's children if they live in the same village; for their brothers tend to favor their own children with food and attention rather than sisters' children, who will ultimately oust brother's children from the village. Sisters are united with their brothers as members of the same genealogical generation, and with their other male and female classificatory matrilineal kin, against all members of the adjacent generations [Turner 1957:225].

Matrilineal succession thus emphasizes the bond between brothers and sisters at the expense of the bond between husbands and wives (Radcliffe-Brown 1952:42). Opposing all of this, matrilineal principles of descent coupled with matrilocal post-marital residence patterns do tend to result in the development of lineages with considerable residential stability and time depth.

Williams and Shapiro (1986a, 1987) have noted that several Mississippian centers in central Georgia were characterized by alternate periods of occupation and abandonment, in some cases up to several generations. While ecological reasons for such abandonment, such as soil or firewood depletion have been advanced, from the argument just developed it is equally probable that social mechanisms delimiting inheritance and land tenure may have been a factor (something they acknowledge). The occupation, abandonment, and relocation of centers in the late prehistoric Southeast, it is suggested, was probably related as much to social as to ecological factors.

The Identification of Territories and Boundaries

In the South Appalachian area there is increasing evidence to suggest that the evolutionary behavior of Mississippian societies can be addressed, at least in part, by examining changes over time in the spatial extent and contexts of archaeologically identified Mississippian phases. Given the success that Hudson and his colleagues have had equating 16th century archaeological phases with ethnohistorically documented aboriginal polities, equation of prehistoric Mississippian phases with similar kinds of sociopolitical entities appears to be a viable research option, albeit one that should be approached with great caution (Boyd and Schroedl 1987; DePratter 1989; Hally and Langford 1988; Hally and Rudolph 1986; Hally et al. 1985; Hudson et al. 1984, 1985). Following just such a strategy, the existence and developmental trajectories of a number of probable local prehistoric Mississippian societies have been examined (Anderson 1990, Anderson et al. 1986; Hally 1986a, 1987; Hally et al. 1985, 1989; Rudolph and Blanton 1980; Shapiro 1983; Smith and Kowalewski 1980). Evidence for cycling behavior, specifically the movement of paramount centers over the landscape, has been noted by several authors (Anderson 1986, 1990; Hally and Rudolph 1986; Hally et al. 1989; Williams and Shapiro 1987).

Contacts between major polities in the South Appalachian area, which tended to be widely separated from one another, appear to have been minimal in the 16th century. In the Central Mississippi Valley during the same period, in contrast, polities appear to have been more closely packed together, and in greater competition with one another. The central towns of the three principal polities of Ocute, Cofitachequi, and Coosa were separated by distances on the order of 250 kilometers, and even the outlying communities on the margins of these chiefdoms were isolated from the towns in the next major polity by appreciable distances. These distributions are unquestionably caused by regional physiographic structure, specifically the wide stretches separating major river systems in the South Appalachian area (Chapter II). A result of this geographic separation, perhaps in combination with Mississippian hunting and warfare patterns, was the creation of extensive buffer zones between these polities.

DePratter (1983:34-36), who has conducted the most intensive examination of these features to date, compiled references for 27 "deserts" or probable buffer zones encountered by the De Soto entrada as it passed through the Southeast. These ranged in size from between two and ten days travel time, tended to be linguistic as well as cultural or political boundaries, and were frequently characterized by fortified settlements at their peripheries. DePratter (1983:32-33, 37-38) noted the relationship between skirmish warfare and the maintenance of these buffer zones, and argued that the process was a deliberate effort to produce well-defined boundaries between polities in areas where natural boundaries such as extensive upland areas between major rivers were absent. He made the further important point that because the De Soto expedition continually caught native societies unaware, the permeability of these buffers was minimal:

> For Soto and his large force to arrive unannounced anywhere in the Southeast, it means that the isolation brought about by the combination of warring political units, linguistic differences, and separation of chiefdoms by uninhabited buffers must have been extreme [DePratter 1983:39-42].

Interaction between some of these societies thus appears to have been minimal. Long-distance trade is known to have existed, but appears to have been comparatively uncommon and infrequent (Swanton 1946:736-742). Upon reaching Apalachee the De Soto expedition met a youth who had visited Cofitachequi in the company of traders, but this was some years previously (Vega in Varner and Varner 1951:253). The infrequency of trade is suggested by the fact that this youth proceeded to get the expedition lost once it passed beyond Ocute (see below). Production of salt for exchange is documented from several areas, although the dynamics of exchange are not well understood (Brown 1980). No other accounts from the early historic period exist documenting traders operating over comparable distances, suggesting long-distance trade was uncommon. This may reflect political conditions within the region at and shortly before European contact, since there is some evidence to suggest that trade was more widespread, and polities more open, in the centuries immediately prior to approximately A.D. 1400 (Chapter IV).

Actual contact between members of the differing Mississippian polities occupying the South Appalachian area in the middle 16th century appears to have been minimal. In Patofa, one of the lesser chiefdoms near Ocute, the chief knew that to the northwest "there was a province called Coca, a plentiful country with very large towns (Elvas in Bourne 1904:I:60), and he offered De Soto guides and bearers if he wished to go there. The tenor of the Patofa chief's description of Coosa suggests his knowledge of Coosa was vague, and that contact was infrequent. Although the Indians of Ocute and Patofa were eager to make war on their apparent enemies in Cofitachequi, and hence accompanied De Soto as he marched there, it became obvious that they had little direct contact:

> [the *caciques* of] Ocute and Cofaqui... said that if we were going to make war on the Lady of Cofitachequi, they would give us all we should desire for the way; but we should understand that there was no road over which to pass; that they had no intercourse, because of their enmity, except when they made war on each other, which was carried on through intricate parts, out of which no one would be expected to issue [Biedma in Bourne 1904:I:11].

Between Ocute and Cofitachequi the Spanish army passed "through a desert country some nine or ten days march" (Ranjel in Bourne 1904:II:91; this appears to be a mistranslation, since *desierto* in Spanish can also mean wilderness). The De Soto entrada, including several hundred bearers from Ocute and Patofa, became thoroughly lost in this wilderness attempting to find Cofitachequi.

Upon leaving the town of Cofaqui in central Georgia, the entrada moved eastward through "that great wilderness which lies between the provinces of Cofaqui and Cofitachequi" (Vega in Varner and Varner 1951:283). The expedition followed a major pathway for the first seven days of their journey, a trail that Hudson and his colleagues have interpreted as following the later, 18th century "Hightower Trail" (Hudson et al. 1984:71). The countryside was described as "pleasant, and... the mountains and forests encountered were not rough and dense but such as could be traversed with ease" (Vega in Varner and Varner 1951:283). The entrada apparently crossed the Savannah River on the fifth day, and the Congaree two days later, apparently near the confluence of the Broad and Saluda rivers at Columbia (Hudson et al. 1984:72). It was here that both the:

> Spaniards and Indians found themselves in utter confusion, for the road which they had taken up to that point and which appeared to be a broad highway came to an end; and when they proceeded along the many narrow paths through the woods, they very soon lost sight of them. Thus it was that having made many efforts, they found themselves enclosed in a wilderness with no knowledge whatsoever as how to escape. Moreover the forests were different from previous ones, for they were more lofty and dense, and could be passed through only with difficulty [Vega in Varner and Varner 1951:283-284].

At this point the entrada, having run out of food, was in real trouble, and endured considerable hardship for several days until food was found in an outlying town of Cofitachequi. These accounts, coupled with archaeological analyses like those presented herein, have led to the recent recognition that the central Savannah was an unoccupied buffer zone in 1540 (Anderson et al. 1986; Baker 1974:144; Hudson et al. 1984:71-72, 1987:846).

Ethnohistoric evidence thus suggests that Mississippian buffer zones not only existed but were aggressively maintained throughout the region (DePratter 1983:20-43). Individuals from other polities found in these areas were typically subject to attack. Patofa, a war leader from Ocute, described the nature of this interaction in the Georgia-South Carolina area to De Soto during the Spanish army's march to Cofitachequi in 1540:

> the wars waged by these two provinces had never assumed the nature of pitched battles in which one of the two powers invaded enemy territory, but had simply occurred while each hunted and fished in the forests and streams through which the Spaniards had just passed. Meeting thus, they as enemies had slain and captured one another; but since the Indians of Cofachiqui were superior and had always enjoyed many advantages in battle, his own Indians had become intimidated, and like defeated people had not dared expand or go beyond their own boundaries [Vega in Varner and Varner 1951:284].

Although from much later in time, this same kind of warfare was also documented among the Natchez in the early 18th century:

> It sometimes happens that two hostile parties en route with the reciprocal intention of attacking each other discover each other. Then they do not take pains to march against each other and come to blows. On the contrary, they go away, and in order to prevent mistakes which might occasion an action between them, as soon as night has come, while some sleep, others watch, shooting their guns from time to time, loaded only with powder, in order to let it be known that they are on their guard. In a word, the object of these savages is less to kill many men among the enemy than to bring away marks which, on return to their nation, may be certain proofs of their bravery — that is to say, to take some scalps [Dumont in Swanton 1911:127].
>
> I shall say nothing of their sieges of places or of their pitched battles. They are unacquainted with such things. All the damage which they do to each other is confined to surprise and to skirmishing [Du Pratz in Swanton 1911:133].

DePratter (1983:44-67) has provided convincing evidence that small-scale skirmishing was not the only form of warfare practiced during the initial contact era. During the De Soto entrada, for example, the expedition was repeatedly attacked by large, well-organized and coordinated groups of Indians, indicating both small-scale skirmishing and more extensive warfare were practiced. Group territories, while perhaps most commonly maintained by indirect or small-scale warfare, could also have been more aggressively defended or expanded.

The operation of these buffer zones was forcefully illustrated during the Pardo expeditions, when the leaders of mountain Cherokee groups were described as studiously avoiding any contact with towns or individuals aligned with Coosa (Hudson 1990:97, 102). The absence of readily identifiable chiefs among the mountain Cherokee at the time of Pardo's visit is taken by Hudson (1990:101) to indicate these were relatively simple societies compared to the chiefdoms around them. It is thus evident that at least some contact-era Southeastern Mississippian polities occupied fairly fixed territories that were maintained primarily through patterns of indirect warfare. Territories and territorial boundaries, while indistinct, did exist and were maintained through hunting activity, with skirmishes occurring when groups strayed too far from their own territories.

Information Management and Decision-Making Hierarchies

The presence of three levels of administrative or decision-making hierarchy in the 16th century chiefdoms of the South Appalachian area has been documented by Hudson (1990:61), based on his work with the Pardo documents. These levels corresponded to village headmen responsible for one or a few small communities (*oratas*), chiefs over a fairly appreciable number of subsidiary communities (*micos*), and paramount chiefs ruling over extensive territories (*caciques grandes*). There is a strong possibility that other administrative/leadership groups were also present in these societies, since the same accounts also specify the existence of war leaders, village magistrate-like figures. At a number of sites, in fact, the accounts report large numbers of elites, presumably more than would be required to handle routine decision-making. These individuals — members of what Cordy (1981) described as a rank echelon — could, however, help those actually wielding power to maintain their position. The presence of a single decision-making or administrative level in simple chiefdoms, corresponding to the presence of officials at villages and centers, and a two-level hierarchy in complex chiefdoms, corresponding to officials at the villages, secondary centers, and the primary center, is clearly documented in the contact-era Mississippian Southeast.

Oratas typically administered activities in one community, although in a few cases *oratas* holding authority over several towns were described (Hudson 1990:63). These were lesser elites acting on behalf of the chief, supervising the production and mobilization of tribute and the organization of corvee labor as required. While Pardo met a great many *oratas*, with at least one apparently present at every community he encountered, he met only three *micos*, who ruled over the chiefdoms of Guatari, Joara, and Chiaha, and he heard of only one *cacique grande*, at Coosa. Hudson (1990:62-63) notes that there was no specific term for the position of the paramount, suggesting that the institution was either new in the region, or else was so strongly identified with the chief that held it that additional formal terminology was unnecessary. It is also possible that the institution was not perceived as sufficiently different from the chiefdoms ruled by *micos* (which may have been perceived as differing only in scale) to warrant the creation of additional titles. The absence of precise terminology describing leadership positions in these complex Southeastern chiefdoms may help to explain the fragility of these entities.

The Bandara II account gives the numbers, names and social position (i.e., *orata, mico, cacique grande*) of many of the chiefly elite Pardo met in each town (Table 1). Many of these were visitors from subsidiary or nearby communities. This level of historical detail permitted Hudson (1990), using linguistic evidence, to reconstruct the location of many of these communities and their probable importance in the regional settlement hierarchy. The kinds of status positions represented in a given town and the number of elites residing or visiting there was seen as a possible measure of that community's relative position in the administrative hierarchy. Thus, when Pardo visited Canos, Ysa, Juada, and Guatari, to cite a few examples, he encountered many chiefs, suggesting that these towns were extensive and probably powerful, while at other communities such as Tagaya the Lessor and one "whose name I do not remember" only a single chief (*orata*) was mentioned (Pardo in Ketchem 1954:70-71). Care must be taken, however, to avoid reading too much into the Pardo accounts. Some of the elites Pardo identified in certain towns were visitors who had traveled there to meet with him. Except when relationships between communities were specified, all that is really known for certain is that the elites were able to meet peacefully in the specified communities, suggesting they were allied in some way, or at least at relative peace with one another.

Comparison of the De Soto and Pardo documents indicates the kinds of political changes that had occurred over the region in the roughly 25 years separating these two expeditions (Hudson 1990:64ff). Collapse of administrative hierarchy is evident in some societies, while it appears to have been expanding or increasing in others. The paramount or complex chiefdom of Cofitachequi, for example, may have fragmented into a number of autonomous lesser simple chiefdoms, of which Joara and Guatari were the most prominent, a view held by Hudson (cf., DePratter 1989, Hudson 1990 for alternative interpretations about a post-De Soto disintegration of Cofitachequi). There is some indication from the Pardo documents, in fact, that Joara and Guatari were expanding and competing with each other, probably in hopes of attaining the status of a paramount chiefdom (Hudson 1990:89-90). The absence of archaeological reports of mounds in the area of these Guatari towns on the upper Yadkin led Hudson (1990:93) to suggest that either it was a relatively young chiefdom, or that its ability to coerce labor from its subsidiary communities was still in doubt. Coosa, reported in steep decline during the De Luna expedition (see below), appears to have rebounded by the time of the Pardo expedition, since its ruler was described as a *cacique grande* (Figure 8).

Warfare

Early colonial fascination with Southeastern Indian warfare, prompted no doubt by a reasonable concern for defense from these indigenous groups, changed to speculation about their origins and demise as the region grew more settled and as native populations rapidly declined. As the early colonial era grew remote, so too did the memories of the complex, geographically extensive societies that once occupied the region, with their ranked elites living on and sometimes buried in mounds and engaged in intense rivalries with one another. These memories grew so dim that the "myth of the moundbuilders" that arose in the late eighteenth and early 19th century, and held sway in popular opinion for almost a century, had it that a race of civilized moundbuilders formerly occupied the region but had been swept away by the savage and warlike ancestors of the modern Indians (Silverberg 1968). One of the triumphs of late 19thcentury American archaeology was the demonstration, by Thomas (1894) and his colleagues at the Bureau of Ethnology, that ancestors of the native Indian populations living in the region had built the mounds.

In this section evidence from 16th century accounts about the relationship between warfare and political development in Southeastern chiefdoms is examined. Warfare, it is argued, played a role in the emergence, expansion, and cycling of Mississippian chiefdoms over the region, and in the rise and decline of individual societies. Two kinds of warfare are documented in the early historic accounts, an almost continual pattern of small-scale raiding and skirmishing and a more infrequent pattern of massive, well-coordinated campaigns closer to the traditional European view of warfare (DePratter 1983:44-67). Southeastern warfare is described in considerable detail in the accounts of the De Soto expedition, the first European penetration of the interior Southeast, and arguably the only reasonably undistorted picture of interior Southeastern chiefdoms prior to their disintegration under contact:

> almost all the provinces that these Spaniards traversed were at war with each other. ...One should know that this was not a conflict of force with an organized army or with pitched battles, except in rare instances, or a conflict instigated by the lust and ambition of some lords to seize the estates of others. Their struggle was one of ambushes and subtlety in which they attacked each other on fishing or hunting trips or in their fields and along their roads wherever they could find an enemy off guard. And those whom they seized on such occasions, they held as slaves, some in perpetual bondage with one foot maimed, as we have seen in certain provinces, and some as prisoners to be ransomed and exchanged. But the hostility among these Indians amounted to no more than the harm they inflicted upon their persons with deaths, wounds, or shackles, for they made no attempt to seize estates. If sometimes the battle were more heated, they went so far as to burn towns and devastate fields, but as soon as the conquerors had inflicted the desired damage, they regathered in their own lands without attempting to take possession of the lands of others. ...This warfare, they now look upon as the natural order of things and, as a result, regardless of where they are found, are always provided with arms, for in no place are they secure from enemies. ...a cacique [chief] does not carry on warfare with just one of his neighbors, but with all who share his boundaries... [Vega in Varner and Varner 1951:487-488].

While this statement is exaggerated - alliances were possible, ensuring relative peace within fairly large areas - the accounts do indicate considerable competition and conflict was occurring between elites. A pattern of continual warfare and hostility would promote group solidarity by promoting a concern for mutual self-interest and defense. It would also reinforce the position of the elite since, given the possibility of hostile reception elsewhere, commoner populations would have to stay in their place. Evidence for intense regional warfare during the Mississippian period has been documented archaeologically by the discovery of fortifications such as palisades, bastions, and ditches at many sites across the Southeast (DePratter 1983:48-49; Lafferty 1973; Larson 1972:384-388). Somewhat more direct evidence for warfare has also been recovered, such as evidence of burning at archaeological sites (Larson 1972:390), or skeletal trauma (Armelagos and Cohen 1984; Lahren and Barryman 1984; Milner et al. 1988; Milner and Smith 1989; Powell 1988:196)

Clear examples of military circumscription, the expansion of one chiefdom at the expense of another, are also documented in the early historic record. The rivalry between the chiefdoms of Capaha and Casqui in northeast Arkansas noted previously is described in detail in the accounts of the De Soto entrada. It is evident that Capaha was expanding at the expense of Casqui:

> For many centuries back this Cacique Casquin and his parents, grandparents, and more remote ancestors had waged war upon the lords of Capaha, a province bordering on their own. And since these lords were more powerful in both vassals and land, they had pushed and were still pushing Casquin into a corner and almost to the point of surrender, for he dared not take up arms lest he anger and irritate the Cacique Capaha, who as a more powerful person could and might do him harm. Hence Casquin had remained passive and had contented himself with guarding his boundaries, neither going beyond them nor affording his enemies an occasion to attack... [Vega in Varner and Varner 1951:434-435].

The same pattern is also noted in the South Appalachian region, where the province of Cofitachequi in central South Carolina appears to have been expanding at the expense of its neighbors to the west, as documented in the exchange between De Soto and Patofa cited previously (Vega in Varner and Varner 1951:284). The long-term effects of this kind of behavior would be the collapse of the losing chiefdom, with effects including possible population relocation, or their subjugation into tributary relationships. This appears to have occurred quite often during the Mississippian period in the Southeast.

Warfare may not have been as extreme in the area occupied by Ocute and Cofitachequi, which were separated by extensive buffers, as it was in other parts of the Southeast. It was not until the De Soto expedition arrived at Chiaha in eastern Tennessee in the province of Coosa, for example, that "the Spanish first found fenced villages" (Ranjel in Bourne 1904:II:108; see also Biedma in Bourne 1904:II:14). Mississippian chiefdoms in the South Appalachian area were typically widely separated from one another, a distribution that may have rendered hostilities difficult. Fortifications were infrequent in this area and contact between these societies appears to have been minimal. Chiefdoms in the Central Mississippi Valley encountered later in the De Soto entrada, in contrast, were more closely packed together, something that appears to have prompted increased conflict. The accounts indicate that towns were typically fortified in this area, and that warfare between neighboring chiefdoms was common (Dye 1989; Elvas in Bourne 1904:I:137-138; Vega in Varner and Varner 1951:434-436, 487).

The absence of obvious fortifications in the territories the Spanish encountered prior to reaching Chiaha does suggest a reduced level of hostilities or, alternatively, that these chiefdoms were secure without them. Towns in the central portions of complex chiefdoms throughout the Southeast were apparently more secure than those in outlying areas, particularly towns on borders facing rival polities, which were frequently described as strongly fortified (e.g., Ranjel in Bourne 1904:II:108; Vega in Varner and Varner 1951:346, 353, 436). Interestingly, the ethnohistoric accounts hint that the appearance of fortifications may actually be indicative of a chiefdom in a weakened state. Thus, among the Natchez "when a nation is too weak to sustain the war, it endeavors to build a fort in order to protect itself," with the fortifications "of a size proportional to the number of warriors and the remainder of the nation" (Du Pratz in Swanton 1911:133). The absence of major fortifications over much of the South Appalachian area, besides a manifestation of the great distance separating the polities occupying the area, may have also been due to the apparent absence of comparable complex societies to the east or northeast along the Atlantic seaboard. The native societies that were present in these areas simply may not have been perceived as threats.

Reasons for warfare between polities are sometimes provided in the early historic accounts. Elite competition for power and prestige appears to have been responsible for at least some of the observed conflict. In the case from Arkansas cited previously, for example, warfare occurred within a framework of a long-standing rivalry between the elites of adjoining polities. The hostilities between Casquin and Capaha, while ostensibly brought about by Capaha's territorial expansion, were explicitly couched in terms of a jockeying for status and prestige (Vega in Varner and Varner 1951:434-448). Casquin's desecration of Capaha's ancestral sepulchres, his wives, and his subjects, and his later insistence on a place of honor by De Soto when meeting with Capaha, were all tactics designed to reinforce his status relative to the other, and delegitimize the authority of his traditional enemy (Casquin was able to accomplish these victories against his more powerful neighbor by enlisting the aid of De Soto).

The same pattern of interpolity elite competition is also noted in the South Appalachian region, where the provinces of Ocute in central Georgia and Cofitachequi in central South Carolina were expanding at the expense of chiefdoms in between, in the Savannah River Valley (Anderson 1990; Anderson et al. 1986; DePratter 1989). The long-term effects of this kind of expansion could result in the death or relocation of the losing populations, or their subjugation into tributary relationships. De Soto was told that the low intensity conflict existing between the provinces of Ocute and Cofitachequi had existed from time immemorial, with little or no contact between the elites of these polities. No memory apparently remained of the Savannah River chiefdoms that had existed between these two chiefdoms only a century or so before. While no obvious reasons were given for the continuation of this conflict, the Indians of Ocute were reportedly intimidated and "dared not expand or go beyond their own boundaries" (Vega in Varner and Varner 1951:284).

While underlying ecological factors such as competition for hunting territory or agricultural land may have prompted Southeastern warfare (Gramly 1977; Larson 1972; Turner and Santley 1979), there is little actual documentary support for such an inference. Warfare may have occurred over the control of unusual resources or possibly trading networks. Laudonnière (Bennett 1975:77), for example, recorded an instance where warfare in the Florida area occurred over control of knappable stone sources. DePratter (1983:24-28) has cited ethnohistoric evidence to indicate that Southeastern chiefdoms grew by conquest, advantageous marital alliances, and because of shared needs by the cooperating communities, particularly defense. Investment in facilities, in the case of the Southeastern chiefdoms cleared floodplain agricultural fields, is also thought to have prompted the aggressive defense of these areas, although again documentary evidence for this is lacking (DePratter 1983:44; Larson 1972). Warfare also appears to have motivated by a desire to capture slaves. While men were sometimes killed outright or captured for subsequent torture, in most areas men as well as women and children were taken alive whenever possible. The economic importance of native Southeastern slavery was illustrated by the practice of hamstringing male captives put to work in the fields; this ensured their value over the long-term by preventing them from running away (Vega in Varner and Varner 1951:439, 488). The labor production of these individuals, both in agriculture and the manufacture of tributary goods, would have increased the wealth of their elite owners (DePratter 1983:61).

Warfare as a mechanism for establishing and enforcing tributary relationships is well documented in the 16th century Southeast (Anderson 1987a; DePratter 1983; Dye 1989). When the De Luna expedition visited Coosa in 1560 they were enlisted in a military expedition to exact restitution from the rival town of Napochies that had refused to submit tribute (DePratter 1983:57-58, 173-174; Hudson 1988, 1990:13, 104). The Napochies, apparently a subsidiary polity in the Coosa province 20 years earlier when De Soto came through, had taken advantage of the weakened state of the paramount following European contact to break away. The process of the decline of Coosa at the expense of its rival, Napochies, is clearly outlined in the De Luna accounts, offering information valuable to the study of chiefly cycling:

> In ancient times the Napochies were tributaries of the Coza people, because this place (Coza) was always recognized as head of the kingdom and its lord was considered to stand above the one of the Napochies. Then the people from Coza began to decrease while the Napochies were increasing until they refuse to be their vassals, finding themselves strong enough to maintain their liberty which they abused. Then those of Coza took to arms to reduce the rebels to their former servitude, but the most victories were on the side of the Napochies. Those from Coza remained greatly affronted as well from seeing their ancient tribute broken off, as because they found themselves without strength to restore it. On that account they had lately stopped their fights...[and] had not gone into the battlefield, for fear lest they return vanquished, as before [Padilla in Swanton 1922:231-239].

The Spanish were enlisted on the side of Coza and quickly defeated the Napochies. This appears to have reversed the fortunes of this particular chiefdom, for by the time of the Pardo expeditions in 1566 and 1567 Coosa was again reported to be a powerful chiefdom. The second Pardo expedition, in fact, turned back towards Santa Elena when word came that a powerful alliance headed by the chief of Coosa was waiting for the Spanish once they crossed the mountains (DePratter et al. 1983:148).

The 1560 Coosa-Napochies rivalry documents the cycling process in operation, detailing specific events that could have ultimately led to the replacement of one regional center/complex chiefdom by another. Population decline at a paramount center, perhaps brought about through reverses in warfare, famine, or emigration could lead to the loss of the numerical advantage in manpower (i.e., warriors) held by that community over its neighbors. As the strength of neighboring societies relative to that of the paramount grew, challenges to leadership would arise. Refusal to acknowledge or submit to the authority of the paramount would be the first step in this process, and would typically take the form of an indirect challenge rather than outright warfare, although this often quickly followed. Refusal to submit tribute, actively hampering the formation of alliances by the paramount with other communities, or refusal to cooperate in communal ceremonial or construction activities were the means by which such a challenge was raised, and are documented in the Southeastern ethnohistoric record. Archaeological correlates for this process that should be amenable to detection include evidence for population decline, a change in the regional flow of luxury/prestige goods and, of course, evidence for the decline, destruction, or abandonment of one center at the same time another in the area was expanding.

Factional Competition

Early 16th-century European explorers in the Southeast, such as Cabeza de Vaca, Hernando de Soto, Tristan de Luna, Juan Pardo, René Laudonnière, and John White, and others like them, saw complex Mississippian chiefdoms before they disintegrated under contact. These early explorers were certainly familiar with the processes and effects of factional competition. Many of the great nation states of the day had themselves only just emerged from intense periods of factional competition, as exemplified by struggles such as the War of the Roses in England or the events leading to the political unification of the Iberian peninsula. Well-schooled in these processes — this was the period, after all, when Machiavelli wrote his classic work *The Prince* — these early explorers made use of them in their conquests. Native factions were pitted against each other whenever possible, and descriptions of this process survive in the ethnohistoric record.

Factional competition within local Mississippian societies is described in some detail in the accounts of the De Soto expedition. Internecine warfare, commonly over succession to chiefly office, appears to have been rife. In the example cited previously detailing the rivalry of Pacaha and Casqui in Arkansas, factional competition occurred within a framework of long standing sparring for absolute power between two adjoining polities. Sometimes rivalries between polities were for the loyalties of elites in subject communities, as documented during the De Soto entrada, when the expedition reached the town of Talise (or Talisi) at the southwestern margin of Coosa:

> Now the people of Talise were not very obedient to the lord Coza because of the double dealing of another lord called Tascaluza, whose state bordered upon that of Coza, and who was both an unsafe neighbor and an untrustworthy friend. It is true that the two Caciques did not wage open warfare, but Tascaluza was an arrogant and bellicose person who displayed much artfulness and trickery... and, being such a person, had disquieted this town so that it was somewhat rebellious [Vega in Varner and Varner 1951:346].

Communities near the boundaries of a chiefdom, given their distance from the center, probably exercised considerable autonomy. The activities of rival factions in these communities would, accordingly, have been difficult for a paramount to address.

Accounts of revolts by subsidiary elites within particular societies also exist from the early Southeast, such as the Napochies rebellion described by the De Luna expedition in 1560. The Napochies example illustrates one mechanism by which chiefly authority might be challenged by a rival faction, specifically the withholding of tribute. This would only occur as part of a bid for local autonomy, since warfare was an almost certain outcome of such a refusal.

The effects of factional competition may thus be seen in the circumscription of chiefly polities, and in the relocation of political centers over the Southeastern landscape, typified in the archaeological record by the abandonment of sites or areas, often with evidence of destruction. This process, brought on by competition between elites within a given polity, or between nearby polities, is well documented in the 16th century ethnohistoric record. The examples cited here illustrate the dependent and often fragile nature of the relationships between a paramount and the local and regional ruling elite in Southeastern chiefdoms. Outright threats or actual violence, refusal to pay tribute or obey commands, and the appropriation of a chief's stores or personnel (including his allies or wives) were all reported methods by which chiefly authority was challenged.

Conclusions: The Importance of Early Southeastern Accounts to the Study of Mississippian Political Development

From this brief review a number of generalizations can be made about the nature and operation of the chiefdom societies present in the Southeast and in the South Appalachian area at the time of initial European contact and, by inference, during the century or so immediately prior to this time. First, it is evident that these societies were true chiefdoms characterized by a "pervasive inequality of persons and groups" (Service 1971:145) and widely varying levels of size and complexity — from simple chiefdoms occupying small areas and controlling a few towns to complex chiefdoms covering massive areas and incorporating many subsidiary communities and chiefdoms. Some of the largest of these paramount chiefdoms exerted sway over tens of thousands of square kilometers, and over appreciable numbers of lesser chiefdoms, the elites of which were either replaced or forced into subsidiary roles.

Within complex Southeastern chiefdoms three institutionalized social rank-echelons were present, consisting of the chief and his associates, lesser elites and their associates, and commoners. The first two groups constituted the decision-making hierarchy; in simple chiefdoms only one decision-making level, consisting of the ruling elite, was present. Commoners had little political influence or power, although it is probable that some care had to be taken by the elite to avoid their alienation. Elite power in Southeastern chiefdoms was derived from both sanctified and secular sources such as genealogical proximity to chiefly lineages, public acceptance of their sacred position and abilities, and real or implied coercive powers. In the more complex Southeastern chiefdoms the ruling elite were set apart from the great mass of people by distinctive modes of dress and compulsory sumptuary and ritualistic behavior. A physical separation was also enforced, with the elite occupying special (i.e., larger, better quality) residential areas. This separation included mortuary behavior, with "the noble dead... isolated in death, as they were in life, close to the areas of major ritual display" (Wright 1984:44). This separation was evident at all levels of the settlement hierarchy above the level of the individual household. Members of the ruling elite were present at primary and secondary centers in some numbers, with smaller numbers in outlying villages where they administered tribute collection and the maintenance public granaries.

The chiefly elite was a geographically extensive group linked through marriage and other, predominantly kin-based alliances. This elite had the responsibility for coordinating collective ritual behavior as well as directing the polity-wide tributary economy, in which goods inevitably flowed from lower to higher levels in the status and settlement hierarchy. This tributary economy operated on two levels, one concerned with subsistence items and the other with luxury goods. Foodstuffs tended to be stored at or near to where they were produced, although their use was under the control of the elite. Storage facilities thus tended to be widely scattered in these societies, with concentrations expected at primary centers. Luxury goods, many of which were produced in the smaller communities (i.e, blankets, skins, river pearls), in contrast, invariably gravitated towards the centers, into the hands of the chiefly elite, who had undoubtedly encouraged and, where necessary, coerced their production.

In simple chiefdoms one decision-making level was present, and society was essentially subdivided into two classes or rank echelons, elites and commoners. In complex chiefdoms an additional administrative level was present, with three rank echelons consisting of elites, lesser elites, and commoners. Secondary centers were occupied by lesser elites allied with, related to, or under the control of elites at the paramount center. These secondary communities may have had considerable autonomy, but ultimate allegiance to the paramount was required and was demonstrated through the periodic submission of tribute. Food may or may not have been periodically submitted to the paramount center, depending upon the distances between the centers and whether bulk transportation using watercraft was feasible. The paramount would, however, have been able to call upon the resources of the secondary center at any time.

The attention of the elite in complex Southeastern chiefdoms in the eastern part of the Southeast was directed inward for the most part, towards intrapolity political, social, and ceremonial matters. There is little evidence for regular contact between distinct polities, at least in the South Appalachian area, where these were widely separated. In the Central Mississippi Valley, in contrast, given the seemingly greater packing of the landscape, more attention to external affairs appears to have been required of the elite (see Chapter IV). All across the region, warfare appears to have been rigorously controlled and directed against groups outside the chiefdom. Conflict typically took the form of isolated skirmishes and sneak attacks on small parties or settlements, although larger attacks sometimes occurred as well. The enhancement of personal status, the recovery of captives (particularly women), and the maintenance of territorial boundaries all figured into warfare. Over time this would have contributed, of course, to the redisposition of people and polities over the landscape.

The present study makes use of early contact period accounts to work backward into the past, toward the reconstruction of the record and causes of political change in prehistoric Mississippian chiefdoms. Critical to such an analysis, of course, is the reliability of the descriptions of native life provided by these early accounts. Do they indeed describe pristine societies, or had significant changes already occurred by the time the first explorers entered the interior? When De Soto arrived at Cofitachequi in 1540, for example, he found artifacts presumably from the 1526 Ayllón colony in the temples, and was told that there had been disease in the land, depopulating whole towns and villages (Elvas in Bourne 1904:I:66). When the De Luna expedition reached Coosa in 1560, as noted previously, the powerful chiefdom De Soto had encountered was much reduced in size, and was having trouble exacting tribute from its neighbors.

The effects of contact and particularly introduced diseases on native populations in the Southeast has received considerable attention in recent years (Dobyns 1983; Milner 1980; Ramenofsky 1987; Smith 1987). That marked social and demographic change occurred following contact is widely accepted, although the rate at which this change occurred remains the subject of contentious debate. Smith (1987143-147) has shown that pronounced depopulation and organizational change was occurring among the Mississippian chiefdoms of the interior Southeast as early as A.D. 1540 to 1565, although the greatest changes, including the collapse of chiefdom-level political structures, appear to have occurred from A.D. 1565 to 1600 and certainly by A.D. 1600 to 1630. Even the accounts of the region's chiefdoms provided by the De Soto expedition, particularly of societies near coastal areas like Cofitachequi and Apalachee, thus undoubtedly reflect, to some unknown extent, the effects of contact. These effects do not appear to have been as pronounced the interior Southeast at this time, however, suggesting the descriptions of polities like Coosa and Casquin made during the De Soto expedition may reflect near-pristine conditions. By the time of the subsequent De Luna and Pardo expeditions, however, it is clear that marked changes had occurred throughout the region, and accounts from this part of the century must be regarded as more suspect.

In spite of these difficulties, early historic accounts of chiefdoms in the Southeastern United States can, when interpreted with care, tell us a great deal about life in these societies, as well as provide clues to patterns and processes of change. The ethnohistoric record, above all, shows that our theoretical expectations about both the existence and causes of cycling are sustained. These early historic records contain observations that can be used to help refine and evaluate models of chiefdom development. While providing rich detail about life in these societies, however, the ethnohistoric record also highlights the importance of archaeological research. This is because the existing accounts of political structures are, with few exceptions, essentially synchronic. While the foundations of political authority are indicated, and individual episodes of change sometimes described in graphic detail, long-term processes and consequences are not.

Only a few temporal benchmarks exist from the 16th century from which the analysis of long-term change in these societies may be examined (Figure 8). The utility of even some of the 16th century accounts for reconstructing prehistoric developmental processes, as we have indicated, may be suspect since profound changes occurred within the native Southeastern cultures during this period (Smith 1987). The examination of cycling must, accordingly, proceed using both ethnohistoric <u>and</u> archaeological evidence, a strategy that comprises the remainder of this study. The clues to understanding the concept of cycling derived from ethnohistoric research warrant consideration, however, as we turn to the archaeological record to evaluate evidence for political change and cycling in the late prehistoric Mississippian period Southeastern United States.

CHAPTER IV.

MISSISSIPPIAN POLITICAL DEVELOPMENT IN THE EASTERN WOODLANDS: EVIDENCE FROM ARCHAEOLOGICAL RESEARCH

Introduction

During the interval from approximately A.D. 900 to A.D. 1600 a complex and changing constellation of chiefdom-level societies occupied much of the Southeastern United States. Called the Mississippian culture, after the central Mississippi Alluvial Valley, where extensive remains from this culture were identified in the 19th century, this way of life is characterized by sedentary communities, intensive maize agriculture, platform mounds, and a ranked hierarchical society. The subsistence economy was based on the intensive utilization of both cultigens and wild plant and animal resources, and major settlements were located, for the most part, on the terraces and levees of major drainages.

The story of the emergence and evolution of these societies has fascinated North American archaeologists for over a century. Research emphases have changed during this time, from concerns about the origin of these "mound builders," to interest in material cultural and chronology and, most recently, to questions about the organization, operation and evolution of these societies. As archaeological research in the Southeast has progressed during the 20th century, a tremendous amount of information has been collected. Literally tens of thousands of Mississippian sites have been recorded over the region, and hundreds have been extensively excavated. In some areas chronological resolution on the order of 100-year intervals or less is now possible. This has given researchers the opportunity to examine political and organizational change in these societies at a fine level of chronological control.

The Mississippian archaeological record is replete with examples of the emergence, expansion, and decline of chiefly polities, in a complex mosaic of shifting power relationships. As a result, the late prehistoric and early historic archaeological record from the region thus forms, as one researcher has put it, "one of the world's major observational laboratories for the study of pristine evolution... of complex societies" (House 1982:37). In this chapter archaeological evidence for cycling in Mississippian societies is examined, together with the procedures by which the process may be investigated. Critical to such research is understanding how chiefdom societies, and patterns of organizational change in these societies, are recognized archaeologically.

Definitions of Mississippian Culture

In recent years definitions of Mississippian culture have appeared that have come to be widely accepted by researchers working with these societies. According to Griffin (1967:189), Mississippian "is used to refer to the wide variety of adaptations made by societies which developed a dependence upon agriculture for their basic, storable food supply." While the degree of dependence upon agriculture varies markedly over the region, there is little doubt that intensive, agriculturally based food production was present in most of the societies identified as Mississippian. The emphasis on subsistence that characterizes this definition, however, was soon found to be unsatisfactory (Griffin 1978). A number of societies were present in the Eastern Woodlands during the late prehistoric period that had intensive agriculture, such as the Iroquois, yet lacked many of the attributes traditionally assigned to the Mississippian, such as evidence for social stratification, mound building, or (in some cases) the use of shell-tempered pottery.

Other societies with these Mississippian attributes, in contrast, produced little evidence for a reliance on intensive agriculture. This was particularly true of the late prehistoric societies in the South Appalachian area and in some coastal settings, where wild food resources appear to have been quite important (Ferguson 1971:11-12; Pearson 1978).

In an attempt to address these concerns, Smith (1978:486, 488) proposed a somewhat more specific definition of Mississippian, encompassing populations with:

> A ranked form of social organization, and [who] had developed a specific complex adaptation to linear, environmentally circumscribed floodplain habitat zones... The location of almost any Mississippian settlement within a floodplain habitat zone can, to a great extent, be generally explained as a result of two energy-capture factors:
>
> 1. The availability of well-drained, easily tilled, energy-subsidized natural levee soils suitable for horticultural garden plots.
>
> 2. Easy access to the rich protein resources of fish and waterfowl in channel-remnant oxbow lakes [Smith 1978:486, 488].

While less monolithic a definition than Griffin's, the definition was again directed primarily to subsistence concerns, excepting only the qualification that these societies were characterized by a rank form of social organization (after Fried 1967:109ff). More seriously, objections were raised by researchers working with what appeared to be Mississippian societies occupying areas outside of circumscribed ox-bow floodplain microenvironments, such as the Apalachee, some of the Caddo, and many of the societies along the lower Atlantic and Gulf coasts (Figure 13) (Shapiro 1986)

To accommodate this problem, and in recognition of the considerable variability that existed within these societies, Griffin (1985:63) revised and considerably expanded his definition of Mississippian to encompass those societies within the Eastern Woodlands that:

> Developed many cultural innovations over much of the culturally defined Southeast between A.D. 700 and 900.
>
> Added these disparate innovations to local cultural inventories by contact between neighboring and distant groups.
>
> Increased in population, resulting from an augmented energy input

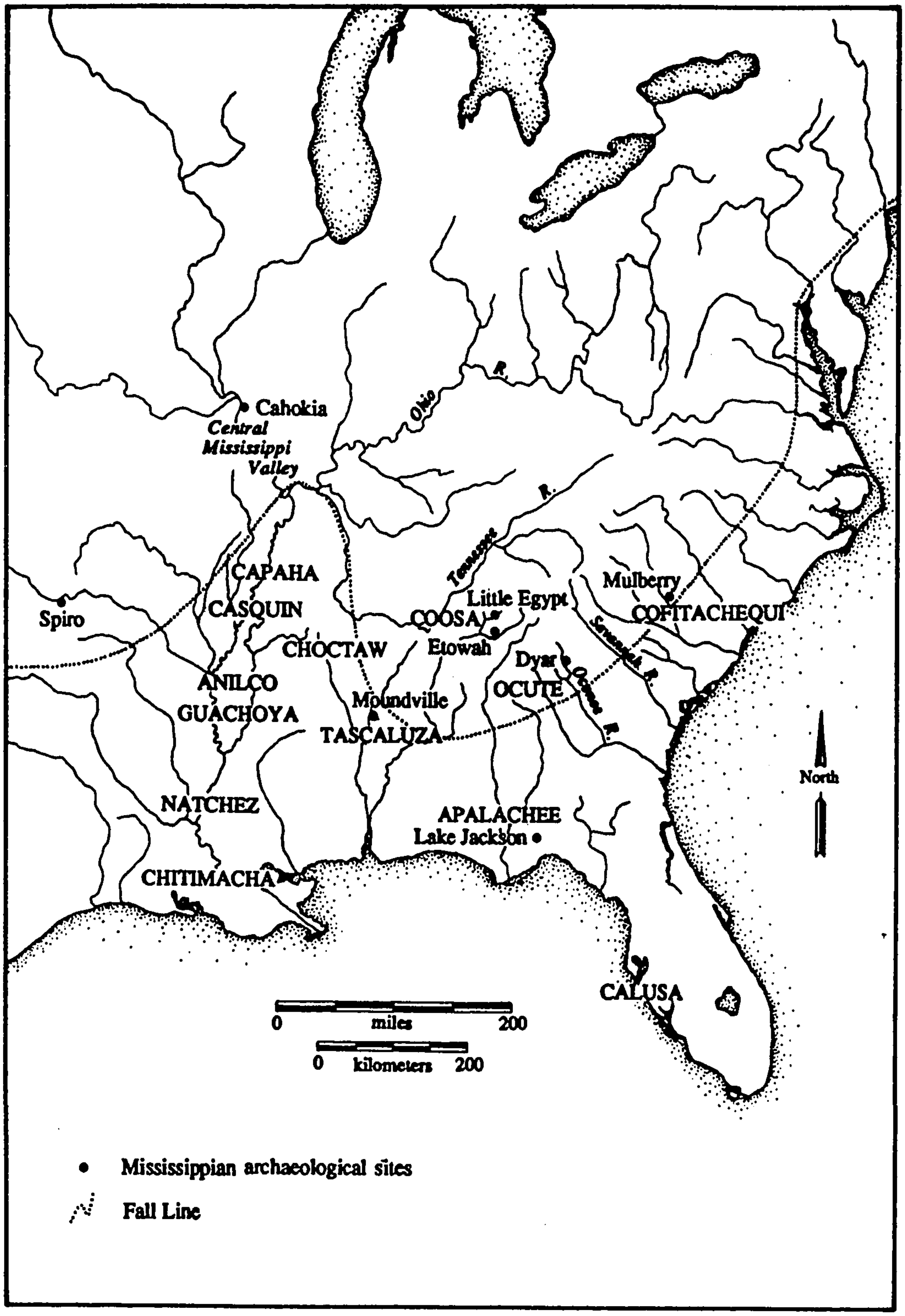


Figure 13. Mississippian Archaeological Sites in the Southeastern United States.

> from a more efficient agronomy.
>
> Constructed planned permanent towns and ceremonial centers, villages, and subsidiary support hamlets, farmsteads, and other extractive camps.
>
> Had regional and temporal variations of a hierarchical social, political, and religious structure.
>
> Participated in an area-wide belief system that integrated and emphasized the complex interaction of the spirit world and man, and ritualized these concepts in an elaborate symbolic iconography on marine shells, copper, ceramics, and stone.
>
> Had an extensive trade network, of rivers and trails, over which manufactured symbolic and mundane items and raw materials were moved either to neighboring or distant societies.
>
> Reached an area-wide cultural crest between A.D. 1200 and 1500, and slowly receded to less formally organized and controlled groups of the post-A.D. 1700 colonial period [Griffin 1985:63].

While minor disagreement may exist on specific points, such as the prevalence of long distance trade or the importance of shared religious beliefs (Knight 1986:685; Muller 1989; herein), Griffin's definition reflects a consensus among scholars working within the region about what constitutes Mississippian culture. This definition, while certainly accurate and appropriate, is quite general in scope. To accommodate the interests of the current research, which focuses on the organizational properties of these systems, some reformulation and narrowing of the definition is proposed. Accepting its regional context, and subsuming the criteria advanced by Griffin, therefore, Mississippian here refers to multi-community polities characterized by one or two decision-making levels above the local community, and administered by hereditary elites. This also serves as a useful definition of chiefdom societies in general.

The Archaeological Recognition of Chiefdoms

In order to examine cycling in chiefdoms archaeologically, the methods by which these kinds of societies are identified warrant consideration. This is because many of the attributes used to identify chiefdoms are also those that must be considered when studying organizational change. A number of authors have advanced specific attributes and archaeological correlates of chiefdoms (Creamer and Haas 1985:742-743; Earle 1987; Peebles and Kus 1977; Renfrew 1973; Wright 1984). How these criteria have been used in the Southeastern United States is instructive. Peebles and Kus (1977:431-433), for example, have proposed five attributes of chiefdoms, which they examined using data from the Moundville chiefdom of west-central Alabama. These attributes, encompassing aspects of mortuary behavior, settlement hierarchy, subsistence production, craft specialization, long-distance prestige-goods exchange, and organizational responses to external stimuli, are each described in turn, together with a brief discussion of methods Peebles and Kus advanced for their investigation.

The presence of ascribed social ranking. This is identified by differentiating ascribed or superordinate status dimensions from achieved or subordinate status. The former is social position that is genealogically determined and the latter social position earned through personal accomplishment, and generally dependent upon age, sex, and individual capabilities. These status dimensions are resolvable through analyses of mortuary behavior, Peebles and Kus (1977:431) argued, with specific archaeological correlates for the presence of a system of social ranking including (a) markedly different and distinctive energy expenditures associated with interments of different ranks, (b) overlap in the occurrence of items marking achieved status, but little or no overlap in the occurrence of markers of ascribed status, and (c) a marked drop in the number of individuals occupying successively higher social ranks.

The presence of "a hierarchy of settlement types and sizes," with the corollary that "the position of settlements in the hierarchy should reflect their position in the regulatory and ritual network" (Peebles and Kus 1977:431-432). Resolution of settlement hierarchies would entail analyses of site type, and site size, geographic dispersion, and relation to ceremonial facilities. Specific archaeological correlates advanced included the presence of a multi-level site hierarchy, with clusters of lower-order sites located within fixed territories around higher-order civic/ceremonial centers.

The location of settlements "in areas which assure a high degree of local subsistence autonomy," ostensibly to reduce administrative burden (Peebles and Kus 1977:432). Choice of this attribute followed from Peebles and Kus's rejection of Service's hypothesis that extensive redistribution of subsistence goods was a hallmark of chiefdoms. This necessitated revision of the perspective that individual communities within chiefdoms were highly interdependent. The resolution of subsistence autonomy, it was suggested, could be addressed through the careful examination of the resource potential of both sites and territories. No specific archaeological correlates were advanced, although tabulating the number and diversity of resource zones within individual site territories was one method suggested to indicate how the subject might be approached (e.g., Renfrew 1973; Sanders and Marino 1970; Sanders and Price 1968).

The presence of "organized productive activities which transcend the basic household group," specifically monumental construction and "part-time craft specialization, usually coupled with intersocietal trade" (Peebles and Kus 1977:432). Specific archaeological correlates advanced included the presence of monumental architecture and evidence for the manufacture and distribution of craft goods from a limited number of locations, and on an interhousehold or intercommunity level rather than at the level of an individual household or craftsperson.

Evidence for a direct relationship between chiefly organizational complexity and the strength and variety of environmental (cultural and natural) perturbations requiring administrative attention. Specific archeological correlates included evidence for society-wide change in social organization, settlement pattern, trading relationships, warfare, or food production and storage that could be associated with changes in climate, regional political structure, or regional trade networks. The greater the frequency, amplitude, and duration of the perturbation, the greater the response (Peebles and Kus 1977:433).

To accommodate research directed to resolving organizational properties of chiefdoms, particularly the recognition of decision-making apparatus in the more complex of these social forms, something incompletely developed by Peebles and Kus, Wright (1984:43-44) proposed three major archaeological correlates of complex chiefdoms:

> (1) Settlement hierarchy: the center of each polity in a network of interacting complex chiefdoms, usually the seat of the paramount, will become both larger than and architecturally differentiated from ordinary chiefly centers, both physically accommodating the paramount's following and providing a focus for major social rituals. There will thus be two levels of settlement hierarchy above the level of producer communities...
>
> (2) Residential segregation: While architecturally differentiated housing, albeit without vastly greater labor inputs, characterizes all societies with ascriptively higher-ranking domestic units, in complex chiefdoms with a discrete noble class there will be segregation by neighborhoods or in special communities of elite residences. We do not, however, expect palaces, built with mass labor inputs and providing spaces for specialized administrative activity.
>
> (3). Mortuary segregation: In addition to the more complex burial programs afforded ascriptively ranked individuals in simpler chiefdoms, we can expect that the noble dead will be isolated in death, as they were in life, close to areas of major ritual display [Wright 1984:43-44].

Although Wright's associated analyses were directed to the complex pre-state polities of the Deh Luran and Susiana plains of southwestern Iran, his emphasis on the archaeological recognition of decision-making levels has been adopted in the Southeast (Anderson 1990; Steponaitis 1978; Welch 1986).

The Archaeological Analysis of Political Change in the Prehistoric Southeast

Once chiefdoms are recognized in the archaeological record, the next step in the study of cycling is the analysis of change in their organizational structures over time. As described in Chapter III, recent ethnohistoric research has documented the existence of a number of geographically extensive, complex chiefdoms in the Southeast at the time of initial European contact in the 16th century. An extensive body of ethnohistoric data exists documenting events and conditions at specific sites in the region, that serves as a benchmark for analyses of earlier, precontact Mississippian societies in the region, a procedure much like the direct historical approach used by earlier generations of anthropologists (Steward 1942). As a result, archaeological investigation of how the region's chiefdoms were organized, interacted with one another, and changed over time is increasingly occupying the attention of researchers. In the following sections methods by which political organization and long-term change have been examined in the late prehistoric Southeast are reviewed, with particular attention to work in the South Appalachian Mississippian area.

Regional Political Structure

In the South Appalachian area attempts to delimit regional cultural and political structure using archaeological data date back to the turn of the century, when Holmes (1903:130-133) first defined the South Appalachian tradition. Throughout the 1880s and 1890s Holmes examined the artifacts recovered from the excavations of the Mound Division, and in 1903 his monumental synthesis of these remains *Aboriginal Pottery of the Eastern United States* appeared as the 20th Annual Report of the Bureau of American Ethnology. Holmes appraised the ceramics from the general Georgia-South Carolina area with those recovered from elsewhere in the Southeast. His major contribution to the archaeology of South Appalachian area was the recognition that many of the ceramics were characterized by a distinctive, stamped exterior finish:

> A culture of somewhat greater marked characteristics comprises the states of Georgia, South Carolina, and contiguous portions of Alabama, Florida, North Carolina, and Tennessee. ...the ceramic phenomena of this province include one great group of products to which has been given the name South Appalachian stamped ware. ...this stamped pottery is obtained from mounds, graves of several classes, village sites, and shell heaps. ...the remarkable style of decoration, more than other features, characterizes this pottery. Elaborately figured stamps were rarely used elsewhere... [Holmes 1903:130-133].

In his 1967 synthesis of Eastern North American prehistory Griffin (1967:185) formally noted the existence of a South Appalachian geographic variant of Mississippian. In 1971 Ferguson's doctoral dissertation provided a synthesis of Mississippian research undertaken to that time in the South Appalachian area, and again similarities in assemblages were noted. In recent years it has been recognized that these similarities reflect a long history of interaction between the societies of the region (albeit at varying levels of intensity), and that events in individual societies sometimes had ramifications throughout the province. Holmes' recognition of a South Appalachian province characterized by a distinctive ceramic tradition thus stands to this day as a major step toward understanding of the later prehistory of the region.

Recognition of geographic and temporal variants within the South Appalachian Mississippian tradition dates from the WPA-sponsored work of the late 1930s, when site/ceramic complexes such as Etowah, Savannah, and Lamar were recognized in Georgia, assemblages corresponding roughly in time with the Early, Middle, and Late Mississippian periods (Caldwell and Waring 1939a, 1939b; Fairbanks 1950; Wauchope 1948, 1950). Soon after researchers began to notice major differences in the Mississippian assemblages located in the eastern and western portions of the South Appalachian area. In the early 1950s Caldwell (1974a:88), in a discussion of ceramics from the Mulberry Mound Group near Camden, South Carolina, which had been partially examined by Caldwell and Kelly in 1952, noted that "the Lamaroid sequence in South Carolina is sufficiently different from the various Lamar sequences of Georgia to be considered a separate ceramic tradition." In the 1960s Reid (1965, 1967) noted close similarities in Mississippian ceramic assemblages over the South Carolina area, based on an inspection of materials from the widely separated Town Creek, Hollywood, and Irene sites. This tradition was equated with the Pee Dee series, originally defined at Town Creek site in Piedmont North Carolina (Coe 1952; Reid 1967).

Efforts directed to the interpretation of these subregional variants was given impetus in 1969, when extensive excavations were undertaken at the Charles Towne

Landing site on the central South Carolina coast by Stanley A. South (1970, n.d.). Two stockaded, squared Mississippian enclosures, one 63 by 60 m in extent, and the other roughly half this size were found and mapped, as well as the outline of an earlier, Wilmington period house. The presence of numerous burials and several unusual structures inside the enclosures indicated that the compound was used for non-domestic, mortuary-ceremonial activities. This "moundless ceremonial center" was occupied in the 15th and early 16th centuries, an inference supported by the associated ceramics and two radiocarbon dates (South 1973). The Charles Towne work prompted South (1973, n.d.), with Leland Ferguson, to examine late prehistoric ceramic assemblages from throughout the South Appalachian area, specifically the occurrence (presence/absence) of specific decorative attributes on sites in central Georgia and the Carolinas. Assemblages from the South Carolina area were found to differ from those in central Georgia, and distinct cultural traditions were inferred in the two areas. South (1973) proceeded to posit the existence of a distinctive Chicora ceramic horizon encompassing Mississippian ceremonial centers in the Carolinas and extreme eastern Georgia, including Town Creek, Charles Town Landing, Fort Watson, Hollywood, Mulberry, and Irene. Reed punctations, nodes and pellets placed below the vessel lip, classic Pee Dee series rim decorations, were the key ceramic attributes defining this horizon (see Chapter V). Mississippian assemblages from central Georgia lacked these attributes and instead had a higher incidence of folded rims. The stylistic differences that occur in late prehistoric assemblages over the South Appalachian area are sometimes thought to reflect the extent or influence of the successive complex chiefdoms that occupied these areas, of which the 16th century provinces of Coosa, Ocute, and Cofitachequi were merely the latest examples (Anderson 1989; Hudson 1990:60). Documenting such inferences, however, will require extensive comparative analyses employing collections from across the region.

Locational analyses have proven an effective alternative means of examining regional political structure. The distribution of Mississippian mound centers over the region has been extensively examined, and these sites are commonly found to occur in particular settings, and at regular distances from one another. Ferguson (1975) examined the distances between Mississippian mound sites in eastern Georgia and the Carolinas and found several clusters of equidistant centers, suggesting discrete polities (Figure 14). Clusters of centers were observed along the Santee-Wateree, the Savannah, and the Oconee rivers. Interestingly, ties between the mound sites in the central Oconee and central Savannah rivers, which were fairly close together, were suggested by this analysis (see Chapter VII). A subsequent locational analysis of the mound centers along the upper Oconee River in Georgia, by Smith and Kowalewski (1980), found that all were between 41 and 47 km apart. This striking distributional patterning was used to infer the existence of a complex Mississippian chiefdom or province in this area. In the mid-16th century this was where De Soto found Ocute (DePratter et al. 1983; Hudson et al. 1984). Although the mound centers themselves have since been shown to have been occupied during different periods, this differential occupation appears to reflect shifting power relationships within a larger, province-level settlement and political system (Williams and Shapiro 1987). Most recently, Hally (1987; Hally and Langford 1988; Hally et al. 1989) has shown that Mississippian centers in northwest Georgia were separated from one another by fairly regular intervals, and that subsidiary communities around the centers themselves were typically within no more than 10 to 15 km (see discussion of the Coosa polity, below).

Perhaps the most exciting work directed to the resolution of regional political structure has come from the linkage of ethnohistory and archaeology. As noted in Chapter III, in recent years a concerted effort has been made in the South Appalachian area to equate archaeological sites and assemblages with locations and events described in early historic accounts, notably those of the De Soto, Luna, and Pardo expeditions.

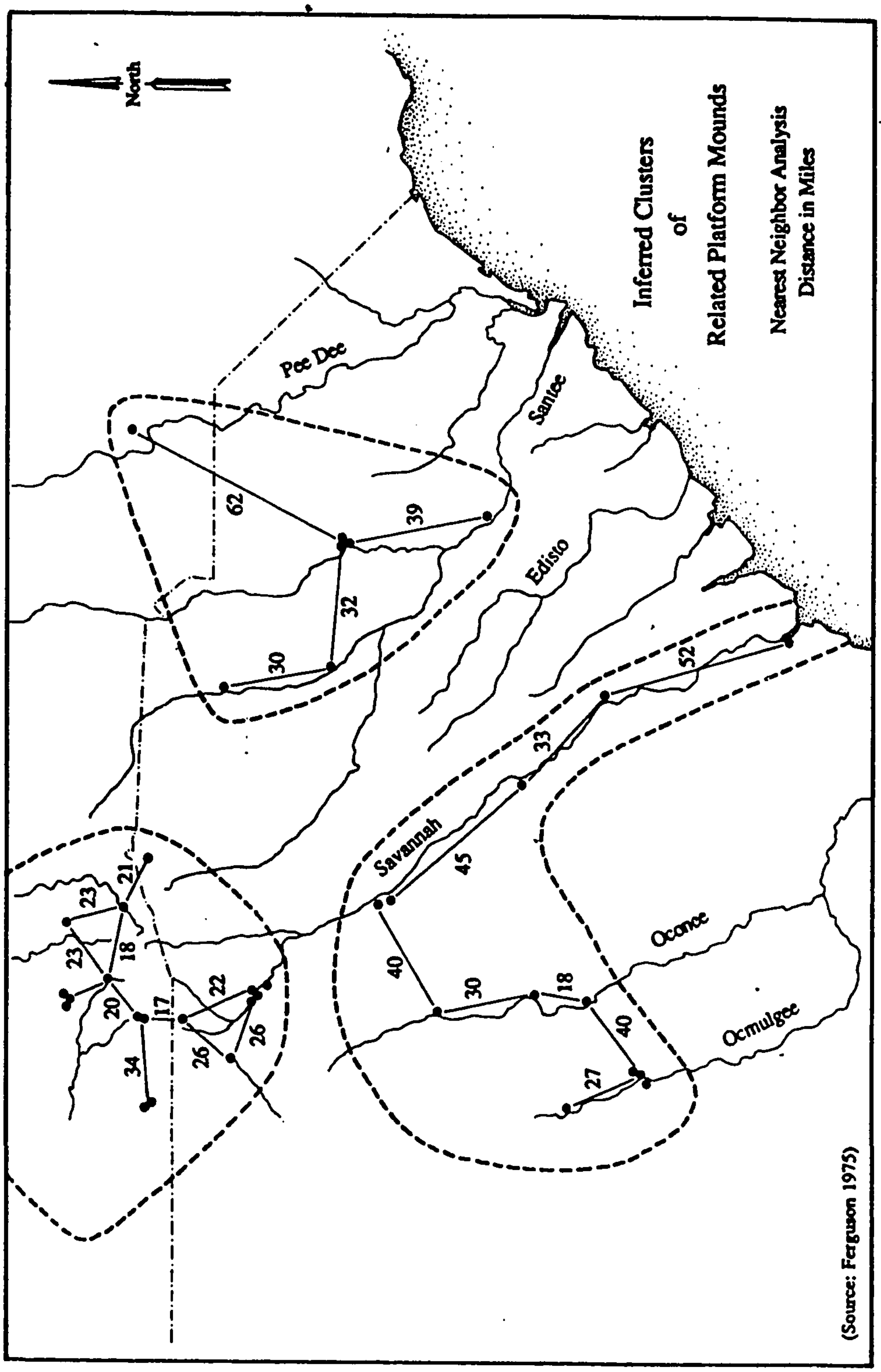


Figure 14. Nearest Neighbor Analysis of Mississippian Mound Centers in Eastern Georgia and the Carolinas.

Hally, for example, has attempted to delimit the range of ceramic variation within the province of Coosa (in Hally and Rudolph 1986:77-78; Hudson et al. 1985:726-732), while DePratter and Judge (1989; DePratter 1989) have made a similar effort using materials from sites linked to Cofitachequi. Research of this kind has been initiated with a number of local prehistoric Mississippian societies (DePratter 1989; Hally and Langford 1988; Hally et al. 1989; Williams and Shapiro 1987).

Settlement and Decision-Making Hierarchies

The resolution of Mississippian settlement patterns has been a major focus for research across the Eastern Woodlands (Smith 1978), a subject that has seen renewed attention in recent years due to the identification of archaeological sites across the region with towns and provinces identified in early historic accounts. Much of this effort has been directed to the creation of settlement hierarchies based on measures of site size or complexity, such as site surface area, number and size of mounds, or assemblage density or diversity. Locational and environmental analyses sometimes accompany these efforts, in an attempt to predict site occurrence in the landscape (Brose and Percy 1978; Pearson 1978). The existence of settlement hierarchies is sometimes then used to infer political relationships, such as primary and secondary centers in complex chiefdoms, and the status and relative contribution of individual sites in tributary economies (Peebles 1978; Steponaitis 1978, 1981).

The most common methods used by Mississippian researchers to demonstrate the presence of settlement hierarchies typically focus on the overall incidence and geographic distribution of sites by size class. When sites areas are plotted using rank size analyses, marked changes or points of inflection in the curve may indicate differing functional categories of settlements. Site categories, once defined, may then be illustrated using simple histograms giving the number of sites per defined size class (Johnson 1977, 1980;

Lundmark 1984; Morse 1981). In an early analysis from the upper Oconee River Valley, Lee (1977, 1978) used surface scatter size estimates to infer the existence of a three-level settlement hierarchy during the Mississippian period, consisting of large centers, villages, and hamlets. Using similar data Pearson (1978) examined Mississippian settlement on Ossabaw Island, located at the mouth of the Ogeechee River in coastal Georgia, to infer the existence of a four-level hierarchy. Pearson's hierarchy was essentially identical to Lee's, differing only by the addition of a fourth and smallest special activity site class.

The use of surface data has fallen somewhat out of favor in the South Appalachian area in recent years, however. Since Lee's (1977) original analysis, extensive excavations were conducted at a number of Mississippian sites in the upper Oconee Valley, much of it in conjunction with the construction of the Wallace Reservoir (Fish and Hally 1983). This work, and comparable work in the nearby Russell Reservoir, showed that a range of small special activity site types were present, and that surface data were an unreliable indicator of both site size and function (Anderson and Joseph 1988; Shapiro 1983). Beside demonstrating the need for caution in the use of surface data, and the importance of detailed analyses of site function, another lesson learned from these modeling exercises was the critical importance of having accurate, fine-grained chronologies capable of precisely dating components and, hence, delimiting approximately contemporaneous assemblages.

Recent settlement analyses undertaken in the South Appalachian area have been directed to resolving clusters of sites that can be equated with early contact era chiefdoms and, when comparable clusters of prehistoric sites are found, inferring the existence of similar polities. The most detailed work of this kind has been conducted in northwest Georgia, where Hally and his colleagues have been documenting sites associated with the province of Coosa, and presumed earlier polities centered on sites like Etowah (Hally 1989; Hally and Langford 1988; Hally et al. 1989). Thanks to this research, the Coosa polity and its precursors in northwest Georgia, described in additional detail in a subsequent section, are among the most thoroughly delimited prehistoric Mississippian settlement systems in the Eastern Woodlands.

Analyses directed to the resolution of decision-making hierarchies employing settlement data, as noted, typically equate site size classes with administrative levels. In analyses of political structures in prehistoric Southeastern chiefdoms, paramount elites (*caciques grandes* or *micos*) are assumed to reside at the largest centers, that is, sites with the largest or greatest number of mounds or the largest surface extent. Lesser elites (*micos* or *oratas*) are assumed to have occupied the smaller, outlying centers and communities. Finally, each village is assumed to have had one or more representatives of the ruling elite present (*oratas*). Burial/mortuary analyses directed to resolving status differences among the population is one method of determining whether or not individuals from superordinate decision-making groups were present at a site (Brown 1971; Milner 1984a; O'Shea 1984; Saxe 1970). Yet another way of determining the existence and nature of decision-making levels is to examine the occurrence of prestige goods on sites, under the assumption that the occurrence and amount of these items was proportional to the rank and importance of the elites in the regional political hierarchy. Prestige goods flowing from a primary center in a Mississippian settlement system would presumably devolve upon lesser elites in outlying settlements (Welch 1986). Other goods presumably flowed upward to the center from these sites.

Analyses of both domestic and ceremonial architecture can also shed light on the nature of a decision-making hierarchy. If elites occupied larger structures that were spatially somewhat isolated from the commoner population, this would be evident in an examination of house size and location within and between communities. One trend that has been noted at a number of sites in the South Appalachian area is the replacement of earthlodges (actually earthen embanked structures that appear to have been council houses of some kind) by structures on platform mounds early in the Mississippian period. Rudolph (1984), in an examination of submound earthlodge construction in the South Appalachian area, has suggested that the replacement of earthlodges by platform/temple mound complexes reflects broad changes in socio-political organization, specifically in the composition of groups permitted access to ceremonial facilities, and hence to involvement in the decision-making process itself. Platform mounds, as physically and symbolically elevated administrative/ceremonial centers, served to separate the elites that made use of them from the rest of the population, while simultaneously reinforcing their superior, sacred status. As social stratification developed during the period of Mississippian emergence presumed communal decision-making activity, once conducted in quasi-public forums in the earthlodge/council houses, was replaced by decision-making by a much smaller group of elites resident in or with restricted access to structures on mounds.

DePratter (1983:205-210) has made the argument that the presence of council houses in Southeastern societies reflect consensus-based decision-making characteristic of tribal-level groups, or simple chiefdoms, and their absence on Mississippian sites may indicate highly centralized authority structures. His argument, simply stated, is that

> ...as centralization developed in each area, there was a shift from control by councils (such as one might expect during the early stages of unification of kin-linked autonomous villages) toward more powerful chiefs deserving of mound residence, temple burials, and greatly increased social status. ...By the time the Soto expedition passed through the Southeast in the 1540's, there were few if any councils or council houses operating in the chiefdoms visited. Instead, descriptions of or even mention of councils are rare and description of council houses are almost totally lacking. ...By the eighteenth century, all of the Southeastern chiefdoms had suffered periods of decline, and only tribal level groups, sometimes organized into loose confederacies, were present (Swanton 1928a, 1928b, Hudson 1976). Detailed descriptions of council houses are provided for this time period by numerous writers... This pattern of council house presence, disappearance, and later reappearance in the Southeast corresponds to the pattern of the rise, existence, and decline of chiefdoms being proposed here [DePratter 1983:207, 209].

This argument is persuasive in broad outline. Many elite mound complexes in the South

Appalachian area arose over presumed communal social/ceremonial facilities, so-called submound 'earthlodges' (Rudolph 1984). The few 16th century accounts that do contain descriptions of council houses come from relatively simple coastal groups, where elite power appears to have been fairly limited. Finally, council houses are undeniably widespread during the later historic period, following the collapse of chiefdom organization over much of the region, among the Cherokee, Creek, and other groups.

How commoners fit into the administrative and political life of Southeastern Mississippian society has received little investigation. Typically assumed to be pawns of the elite, with little say or influence, their actual power may have been much greater, particularly in local matters. Some form of communal decision-making almost certainly had to characterize every Mississippian community, if for no other reason than to provide assent to the decisions of the elite. Village level administration locally, even in complex Mississippian chiefdoms, may have had to incorporate the rank-and-file in decision-making in some fashion, perhaps under an *orata*, to conduct everyday life in an orderly fashion. The presence of communal decision-making bodies may have helped alleviate tensions and jealousies arising from the marked patterns of social inequality that characterized the more stratified chiefdoms. Local autonomy was probably greater in villages located at some distance away from major centers, and hence out from under immediate control of the elites at those sites. The communal buildings so well documented in the later historic era may thus have been an aspect of ordinary Mississippian village life all along, rather than evidence of degeneration from a more complex organizational form. The nature of South Appalachian Mississippian archaeological research, which has largely focused on mound sites with large area excavations in adjoining village areas only rarely undertaken, means resolution of this problem will have to await the completion of great deal more fieldwork in village contexts.

Tributary Networks

The analysis of political economy, and specifically tributary networks, has received a great deal of attention in the Southeast in recent years. The most extensive and innovative of this work has been conducted with data from the Moundville chiefdom of west-central Alabama, and has focused on relationships between site size, location, and surrounding agricultural productivity to patterns of tribute flow (Bozeman 1982; Peebles 1978, 1986, 1987a, 1987b; Steponaitis 1978, n.d.; Welch 1986). During the initial development of the Moundville chiefdom, settlement size was closely correlated with the agricultural productivity of the surrounding terrain, measured using the occurrence of prime agricultural soils in catchment increments around each site in the settlement hierarchy (Bozeman 1982; Peebles 1978:400-410). As the chiefdom expanded, the population at Moundville rapidly exceeded its local catchment productivity, necessitating provisioning from surrounding, subsidiary communities. The extent of this provisioning, or subsistence goods produced by an outlying site that were submitted as tribute, could be calculated by comparing the size of the Moundville center's population with the size that could be supported by its local catchment. All personnel beyond the figure that could be provisioned locally had to be supported through external tribute (Steponaitis 1978, 1981). The agricultural production of outlying communities thus had to go to maintaining the Moundville center. Production of surplus was thus absolutely essential to the continued operation of this society.

How the tributary/political economy shaped settlement size and distribution has also been examined at Moundville. Steponaitis (1978:440-449) demonstrated that secondary centers in the chiefdom were strategically located to maximize the collection and flow of tribute. As Moundville grew in power, in fact, other centers in the Black Warrior Valley may have been relocated to increase the efficiency of this operation. The Moundville case also indicates that the size of outlying centers in a complex chiefdom may be directly related to the proximity of the paramount center. Mounds at secondary centers closest to Moundville were appreciably smaller than mounds in centers at greater distances. This pattern was interpreted in terms of the logistics of operating a tributary economy. Centers closest to the paramount center were under more direct control and had the greatest tributary demands placed upon them, reducing the amount of surplus available to maintain local ceremonial facilities and elites. Populations at centers at a greater distance had greater control over their surplus and, exercising greater autonomy, were able to devote more effort to the construction of ceremonial or other site facilities. The number of elites and size of facilities at outlying centers was also unquestionably related to the extent to which the primary center co-opted these ceremonial and administrative functions.

Not only was the regular production of agricultural surplus essential to the maintenance of an elite, who had to be supported together with their families and retinues, but also means had to have been available for the efficient use of this surplus. Elite control of storage was thus as important as control of production. The kinds of crops or other subsistence goods that are available for storage, their periodicity of availability, and storage preservation technology itself will place constraints on how surplus is defined (Burns 1983). The number, size, and efficiency of storage facilities may thus have placed constraints on decision-making hierarchies. Comparing storage area to living area is one means that has been employed by archaeologists to delimit the existence of a managerial hierarchy controlling surplus production (D'Altroy and Earle 1985; Lightfoot 1987:50).

Patterns of tribute flow can also be measured through the analysis of paleosubsistence evidence. Several important studies have shown that the health status of individuals in chiefdoms is directly related to food consumption patterns, specifically the amounts and kinds of food commoners had, or the elite appropriated for their own use

(Blakely and Beck 1981; Hatch 1987; Milner 1990a; Powell 1988). The study of human skeletal remains can provide evidence about past diet, although in some cases this evidence may be ambiguous or open to multiple interpretation, requiring care in its use (Huss-Ashmore et al. 1982; Kleppinger 1984; Wing and Brown 1979). Trace element and stable carbon isotope analyses, for example, offer the potential for identifying fairly specific dietary constituents. Stable carbon isotope analysis has been used in a number of areas of Eastern North America, and has shown that maize did not become an important source of food until the Early Mississippian period (Bender et al. 1981; Buikstra et al. 1989; Lynott et al. 1986; Van der Merwe and Vogel 1978).

Stable carbon isotope analysis proceeds by examining how differing plant types incorporate differing isotopes of carbon into their system (Huss-Ashmore et al. 1982:452-455). Two photosynthetic pathways are important with regard to the archaeological evaluation of maize in prehistoric diet, called C3 and C4. Most of the plant species in temperate North America are C3 plants, while maize, a tropical cultigen, is a C4 plant. Skeletal series showing a heavy utilization of C4 sources may thus indicate regular maize or other tropical plant consumption. Distinctive stable carbon isotope ratios also occur in marine and terrestrial resources, and can indicate a reliance on one or the other, although again caution must be used (Seally and van der Merwe 1985).

Trace element analyses provide a more general indicator of diet, albeit one highly susceptible to the confounding effects of diagenesis. Zinc and copper values tend to be higher in skeletal populations where meat intake was high in life, while strontium, manganese, and magnesium are higher in populations where vegetable foods were important (Huss-Ashmore et al. 1982:450-452). Strontium values are higher in marine molluscs, crustaceans, and vertebrates (and in human populations that eat them) than in terrestrial animals, so like stable carbon isotope analysis, trace element analyses can also indicate extent of marine/terrestrial resource utilization. Trace element analyses have been used in a number of areas within the Eastern Woodlands to investigate sex- and status-related differences in diet, as well as changes in dietary patterns (Cohen and Armelagos 1984; Gilbert 1985; Lambert et al. 1979; Larsen 1987) (see Chapter VII).

Trace element analyses suggested that high-status individuals in the Moundville II-III chiefdom had more meat in their diet than commoners (Peebles and Schoeninger 1981; Powell 1988), although little evidence for dietary stress was observed in any social segment (Peebles 1987a:29-31). The general health of the succeeding largely egalitarian Alabama River Phase populations, following the collapse of the Moundville chiefdom, was in marked contrast, with approximately half the individuals evincing evidence for severe dietary stress (Hill 1979, 1981; Peebles 1987a:31). The collapse of effective regional political integration, which reduced local populations' ability to dampen resource fluctuations through the allocation of resources from over a large area, thus had as an immediate consequence the emergence of a much poorer standard of living.

Somewhat more general indicators of diet and the relative effectiveness of prehistoric provisioning strategies may also be obtained from skeletal remains. A measure of the incidence and severity of dietary stress during an individual's life can be approximated through examination of Harris lines, enamel hypoplasia, Wilson bands, evidence for porotic hyperostosis, dental attrition or decay, infectious lesions, osteoporosis, evidence for delayed growth or maturation, dental asymmetry, dental malocclusion and crowding, and metacarpal notching (Huss-Ashmore et al. 1982). Measures of skeletal robusticity and trauma can indicate the workload and insults an individual was exposed to in life. Mortality patterns within skeletal population samples, such as life expectancy curves, can also provide a general indicator of subsistence or other stress. Goodman et al. (1984) used many of these measures, as well as indicators of the severity of infection at age of death, and mortality information, to examine changing patterns of stress in Late Woodland, initial Mississippian and later Mississippian populations at Dickson Mounds, Illinois. A pattern of increasing stress was documented and was linked to the subservient position of the site in a tributary hierarchy. Similar results were obtained from the upper Savannah River, in analyses of skeletal remains from the Beaverdam Creek Mound and Rucker's Bottom sites, a small Mississippian ceremonial center and a nearby tributary village, respectively (Chapter VII).

Chiefdoms are centralized risk-management organizations, that Hatch (1987:10) has described as "complex, problem-solving cultural systems that, in evolutionary terms, have a selective advantage [over less rigidly structured societies] through their ability to dampen internal and external stress" (see also Peebles 1987a:31; Peebles and Kus 1977). How successful they were may be reflected in the skeletal health of their constituent populations. Hatch (1974, 1976, 1987) demonstrated the utility of skeletal analysis to the study of Mississippian political economy using 1284 burials from 19 sites of the Late Mississippian Dallas culture of eastern Tennessee. The Dallas chiefdoms were small and simple societies for the most part, located on the margins of the Mississippian area. Dallas mound interments were characterized by nonutilitarian prestige goods, described as "copper earspools and headresses, ceremonial axes, painted and modeled pottery forms, and imported shell ornaments" (Hatch 1987:11). Adult males were the most common interments in the mounds, although individuals of all ages and both sexes were present, suggesting an ascribed social class. Burials with utilitarian grave goods, in contrast, tended to occur in village areas. Adult females and subadults were found in or near houses, commonly buried with simple shell jewelry and utilitarian ceramics, while adult males in village areas were interred with personal or utilitarian items, typically pipes, woodworking tools, and flintknapping tools (Hatch 1987:10-11).

Dallas mound populations tended to be taller, on the average, than villagers, suggesting a better diet (Hatch and Willey 1974). Analyses of tibia and femur cortical thickness, which are thought to reflect the amount of work-related stress an individual underwent in life, indicated that villagers were more physically active than individuals interred in mounds (Hatch et al. 1983). This suggested that the elite stratum of Dallas society was exempted from arduous activity, such as farming or corvee labor, that is, communal construction projects such as erecting mounds, fortification ditches, or community buildings. An analysis of childhood (defined as individuals from 0 to 8 years in age) growth arrest or Harris lines in Dallas populations indicated they occurred with greater prevalence among village children than in comparable mound populations, further evidence that higher status individuals probably enjoyed a better or more regular diet. Surprisingly, however, high-status males interred in the mound had a higher incidence of growth arrest lines incurred during adolescence (defined as individuals from 8 to 16 years in age) than their village counterparts, a finding equated with participation in an arduous, probably ritually based training regime to prepare them for positions of high status (Hatch 1987:13) Dietary differences between elites and commoners in Dallas society, specifically in patterns of meat and vegetable consumption, were also documented through trace element analyses. Hatch and Geidel (1985) observed:

> statistically significant concentrations of those trace elements associated with a vegetable-rich diet in the village burial population, especially among subadults. Mound associated burials showed evidence of a more well-rounded diet [Hatch 1987:13].

Even within the Dallas elite subsample dietary differences may have been occurring, since the tallest burials tended to occur in the center of mounds (Hatch 1987:12). All of these findings suggest that diet improved with status in the simple chiefdoms comprising Dallas society.

Population health in Mississippian chiefdoms also appears to have been related to the degree of regional political centralization. At both Etowah (Blakely 1981) and Moundville (Powell 1988) only minimal health differences were observed between higher and lower status groups. Hatch (1987:14), in a comparative analysis of Etowah, Moundville, and Dallas skeletal populations, has concluded that the Moundville and Etowah chiefdoms

> provisioned their populations with a uniformly more adequate diet than did Dallas communities. One of the virtues of greater organizational complexity in Mississippian times appears to have been the ability to satisfy the basic needs of its members - be they related to diet, external resources, or protection from competing neighbors. Dallas villages, being smaller and organizationally less sophisticated, were likely to have been more susceptible to the predations of outsiders and interruptions in external supplies, as well as more frequently faced with the problem of how to allocate scarce but nutritionally significant food supplies. The answer here was predictable — let the lower ranks suffer first [Hatch 1987:14].

These observations are important to the study of political change in Mississippian chiefdoms, since they indicate that the relative health of an archaeological skeletal population may provide clues about regional political organization.

Analyses of paleobotanical and zooarchaeological remains from archaeological sites can also indicate probable provisioning patterns, and from these the position of sites and individuals in tributary networks and administrative hierarchies. The incidence of specific animal body parts, measured using skeletal elements, within and between sites can indicate how meat was distributed and consumed by various segments of the population. In some Southeastern Mississippian societies, evidence has been found to indicate that elites were requisitioning prime cuts of meat, or specific species, for their own use (Scott 1982, 1983). At the late prehistoric/early historic Toqua site in eastern Tennessee, for example, faunal analyses by Bogan (1980) demonstrated that higher status residential precincts received better cuts and a greater variety of meat. At the same site Parnham and Scott (1980) found that village (i.e., commoner) subadults suffered from porotic hyperostosis, a condition probably due to a meat-poor diet. Such a diet might also explain the greater frequency of Harris lines noted in Toqua village as opposed to mound populations (Hatch 1987:13).

The presence of possible food remains in the archaeological record does not unequivocally indicate human consumption (barring coprolite evidence), however, since some species may have been used for purposes other than subsistence. Care must always be taken in the analysis of paleosubsistence data to eliminate possible sources of analytical error, by controlling for formation processes, including taphonomic factors, and to resolve through independent means whether and how recovered species were utilized.

A most recent and innovative examination of Mississippian political economy has focused of ceramic vessel form and function, something quite different from the more traditional use of these kinds of artifacts for purposes of chronology. In a series of recent papers, Hally (1983a, 1983b, 1984, 1986b) and Shapiro (1983, 1985a, 1985b) have explored the uses to which Mississippian vessels were put at mound, village, hamlet, and special activity sites in the central and northern Georgia area. This work is proving valuable, both for the resolution of intrasite activity areas, and for determining the range of activities that occurred on these site types. In an important illustration of the utility of this approach, Shapiro (1985a) has shown that large jars – possible communal or tribute storage vessels – were disproportionately represented in mound as opposed to village contexts at the Dyar site on the upper Oconee River in the central Georgia Piedmont. Elite control of surplus production may be indicated by this pattern (see also Blitz 1989).

Succession and Post-Marital Residence

How Southeastern Mississippian societies dealt with problems of chiefly succession remains incompletely explored, although it is possible to draw inferences from both the ethnohistoric and the archaeological record. Perhaps the most widely utilized method of exploring chiefly succession archaeologically has been to examine the occurrence of public works, such as episodes of monumental construction, or mortuary practices associated with the interment of particular individuals (Brown 1971; Renfrew 1973, 1984). These analyses proceed under the assumption that a primary purpose of such public renewal/construction behavior was the sanctification of the elite, the linking of successors with predecessors, through the building or rededication of the symbols of their power, such as their ancestral temples or places of residence. This activity served to legitimize the power of the former chief, and demonstrate that of his successor. In Southeastern Mississippian society, as documented in Chapter III, mound stage construction appears to have been associated with successional events, serving to demonstrate the power and sanctity of both the deceased and his replacement.

A traditional method of examining succession in Southeastern Mississippian society has been to examine the frequency of construction stages and burials in temple mounds. These kinds of studies usually proceed by assuming that each new mound stage reflects a successional event, most probably the death of a chief and the literal elevation of his replacement to a place above society. Such an interpretation is supported by ethnohistoric accounts and from the archaeological record itself (DePratter 1983:179; Hally 1987; Schnell et al. 1981:126-145; Waring 1968a:58-62,66). If one divides the number of mound stages by the length of time the mound is assumed to have been in use, stage construction every 15-25 years or so is indicated at a number of sites in the South Appalachian area (Table 2). This, probably not coincidentally, is about the duration of a generation, and may indicate the average tenure of local chiefs or paramounts.

Knight has argued that mound building was a product of communal/fertility cults, reflecting:

> a purely expressive act... a mortuary rite for the mound itself rather than for any individual... the symbolism of the earthen platform is that of an icon representative of earth, manipulated by periodic burial as a temporary means of achieving purification in the context of a communal rite of intensification [Knight 1986:678].

While Knight's interpretation may be correct, the comparatively infrequent occurrence of mound stage construction, on the order of once a generation or so at some sites, indicates that this activity was uncommon. Instead, while mound construction was indeed an

Table 2. Number of Mound Stages and Estimated Occupation Spans at Selected Mississippian Sites in the South Appalachian Mississippian Area.

Site Number	Mound Group	Number of Stages	Period in Use	Years/ Stage	Phases of Occupation	Duration of Phase	References
9Mu102	Little Egypt, Mound A	4	150	37.5	Little Egypt Phase	1350-1500	Hally 1987:Figure 5; Hally and Langford 1988:68
40Mg31	Hiwassee Island	4	200	50	Dallas	1250-1450	Lewis and Kneberg 1946:Table 19
9Br1	Etowah, Mound C	5	150	30	Late Etowah-Wilbanks	1200-1350	
9Mu100	Sixtoe	2	100?	50?	Early Etowah (I/II)	1000-1100	Kelly et al. 1965; Hally 1987:Figure 5; Hally and Langford 1988:51
9Mu101	Bell Field	5/6?	150	25-30	(unnamed)	1300-1450?	Kelly 1970, 1972; Hally 1987:Figure 5; Hally and Langford 1988:62-63.
9Fl13	Plant Hammond	3	100	33.3	Wilbanks	1200-1350	Wauchope 1966; Hally 1987:Figure 5; Hally and Langford 1988:63
9Br3	Two Run Creek	10	200?	20	Wilbanks	1200-1350	Wauchope 1966; Hally and Langford 1988:63
9Cl62	Cemochechobee, Mound B	10	450	45	Rood	900-1350	Schnell et al. 1981:145
9Cl62	Cemochechobee, Mound A	5	450	90	Rood	900-1350	Schnell et al. 1981:145
9Ch1	Irene, Primary Mound	7	150	22.5	Savannah II/III	1150-1300	Moore 1898:168; Caldwell and McCann 1941
9Ri1	Hollywood	2	100	50	Hollywood	1250-1350	Thomas 1894:317-326; DeBaillou 1965
9Eb85	Beaverdam Creek	6	100	16.7	Beaverdam	1200-1300	Rudolph and Hally 1985
9St1	Tugalo Tugalo	4 - 5 4	100 100	22.5 25	Jarrett Tugalo	1100-1200 1450-1550	Thomas 1984:314-315; Caldwell 1956 Thomas 1984:314-315; Caldwell 1956
9St3	Estatoe	5	100	20	Tugalo	1450-1550	Kelly and De Baillou 1960
38Oc47	Chauga Chauga	6 4	100 100	16.7 25	Jarrett Tugalo	1100-1200 1450-1550	Kelly and Neitzel 1959, 1961 Kelly and Neitzel 1959, 1961

intensification rite, at least in some cases, it occurred irregularly and only as warranted by circumstances, specifically when the replacement of chiefly elites occurred. Mound stage construction unquestionably had an ideological component, specifically directed to effacing evidence of the former chief, while simultaneously demonstrating and legitimizing the power of his successor. As the strength or necessity for legitimizing ideologies declined over the course of the Mississippian, however, if the argument about the rise of increasingly power-based authority structures noted in Chapter II is correct, this would explain the diminished role of moundbuilding observed in later Mississippian times.

The nature of chiefly succession can also be determined from other material remains, such as the quantity of prestige goods in circulation, or the location of chiefly residences in relation to other symbols of elite power. The relationship between prestige-goods circulation and chiefly stability has been noted previously. Basically, when the flow of these kind of goods declines or is interrupted, the position of the elite may grow precarious. As Peebles has noted, in prestige goods economies:

> In such systems the "value" of goods is created in both geographic and social distance. The exchanges link elites in different societies, and the act of exchange validates their relationship as equals and at the same time reinforces their superior status within their respective societies [Peebles 1987a:34].

The collapse of a number of Southeastern chiefdoms, including Moundville and Spiro, has been attributed, in part, to interruptions in prestige-goods networks (Peebles 1987a:30; Rogers 1987).

Blake (n.d.) has recently argued that where succession is poorly defined or the subject of intense competition (i.e., Goldman's Open societies), chiefly residences will be in close proximity to other major symbols validating the chief's position, such as mortuary temples, storage facilities, or meeting houses. Where chiefly succession is more secure, or where the position of the chief is not the subject of intense rivalry (as in Goldman's Stratified and Traditional societies, respectively), greater spatial separation of these facilities is likely, as validation of authority through proximity to legitimizing symbols is less critical. Brumfiel (1987) has offered a similar approach using the presence of more mundane artifact categories, notably serving vessels, to measure the extent of elite feasting and display-based public competition. Where public competition was extensive, leadership positions were probably widely coveted, and hence likely to be unstable.

Analyses of post-marital residence patterns is less well developed archaeologically in the Southeast. Matrilineal succession coupled with matrilocal residence, something documented in the ethnohistoric accounts, appears to be assumed rather than viewed as an inference to be tested. Some support for the validity of this assumption has come from physical anthropological analyses, notably the occurrence of greater variability on male as opposed to female skeletal samples from some sites, suggesting males married into the community (Hulse 1941). Artifact analyses directed to the resolution of post-marital residence patterns have not seen much consideration in the Southeast, perhaps reflecting the criticism such work has engendered in the Southwest (Plog 1976, 1980; Schiffer 1989).

Environmental Factors

Analyses of Mississippian settlement patterning and political organization in the South Appalachian area that have focused on the environmental associations of sites include Ward's (1965:45) correlation of major Mississippian settlement with "soils with a high degree of fertility and a highly friable texture" and Larson's (1971a, 1986) observation that major centers such as Etowah tended to occur at the boundaries of two or more major physiographic zones (see also Hally 1989). Ferguson (1971:245-247), in a similar but more broadly based analysis, noted that the locations of Mississippian ceremonial centers throughout the South Appalachian area were along major drainages and at macro-ecotones, at or near the junction of major physiographic provinces and hence in areas suited to the exploitation of several different environmental zones. Centers were almost invariably found in areas of hardwood vegetation and on or near highly fertile soils, potentially rich agricultural and game/nut mast zones. More recently Williams and Shapiro (1986a) have argued that some Mississippian populations in the region moved back and forth between closely spaced or 'paired' communities, to counter factors of soil or firewood depletion. All of these models emphasize a linkage of Mississippian sites with easily tilled, highly fertile floodplain soils, and factors influencing the spacing of centers and subsidiary sites across the region.

Environmental factors are unquestionably linked to the occurrence of territorial behavior, specifically the active defense of certain areas or resources (Dyson-Hudson and Smith 1978). The difficulty of clearing Southeastern river terrace vegetational communities, which were typically occupied by massive hardwood stands, for example, would have prompted some concern for their defense and maintenance. Fields in early stages of succession, which were far easier to clear than virgin forests, would have been viewed as facilities to be controlled (Gilman 1980; Vayda 1961). Mississippian societies across the region were separated from their neighbors by empty, uninhabited areas. The size of these buffer zones may have been related to the hide and protein requirements of individual societies, and the need to ensure adequate supplies of these resources (Gramly 1977; Hickerson 1965; Turner and Santley 1979). If this view is correct, group population levels and territorial extent in the prehistoric Southeast were directly linked, with hunting territory or buffer zone size and permeability determined, in part, by resource needs of the population.

Cycling entails the emergence and decline of complex chiefdoms. The emergence of complex societies is widely thought to have been facilitated in ecologically rich areas, an argument that has also been applied to the Mississippian (Smith 1978). A range of ecological arguments have been proposed over the years linking the demise of particular Mississippian chiefdoms to the over-exploitation of local resources, such as soil, firewood, or game, or to changing environmental conditions such as drought or a reduction in the growing season, bringing about a failure of the agricultural support system (Fowler 1975:100-101; Griffin 1962; Williams and Shapiro 1986a). The collapse of Cahokia and a number of other Mississippian societies after ca. A.D. 1450, in fact, has been attributed to global patterns of climate change, notably the onset of the Little Ice Age (Barreis and Bryson 1965; Griffin 1962:710-711; Peebles 1987b:31; Penman 1988). Major changes at this time have also been noted among Plains village agriculturalists (Wedel 1941) and in the Southwest (Cordell 1984).

Other environmental explanations for chiefdom collapse in the Southeast address themselves to the focused nature of the Mississippian adaptation itself, that is, to its great reliance on intensive agriculture and, in some cases, on a few key prey species (Speth and Scott 1985). Societies exploiting intentionally simplified ecosystems, such as those characteristic of intensive agriculturalists (i.e., with a focused economy directed to one or a few crop and game animal species), are particularly sensitive to environmental perturbations, particularly fluctuations in rainfall, hail, or growing season duration, or to population crashes in game animal species (Brown et al. 1978; Chmurny 1973; Ford 1974). Catastrophic failure of the sociopolitical system can follow continued subsistence production failures, although it must be stressed that a primary purpose of chiefdom organization is to dampen and hence overcome the effects of such failures. As a result, localized and comparatively short-duration subsistence failures are unlikely to affect the stability of these systems, and the ability of their ruling elites to maintain both power and organizational control. Widespread, long term resource failures, in contrast, undoubtedly severely challenged these systems. Examining patterns of crop productivity, as inferred from annual rainfall data covering much of the Mississippian period from the vicinity of the Savannah River Valley, is one of the primary methods used in this study to examine the effects of resource stress (Chapter VI).

The Identification of Territories and Boundaries

Earle (1987:289) has described methods used to infer the territorial extent of chiefdom societies. Perhaps the most simple and traditional method involves the examination of site or artifact distributions. Areas with large numbers of sites or artifacts dating to a particular period are interpreted as territorial cores, while areas of low density are interpreted as peripheries or buffers. In the Savannah River Valley, the distribution of Mississippian ceramics and projectile points appears to successfully document areas used for settlement as opposed to those used for hunting (Chapter VI). Artifact distributions, particularly the occurrence of prestige goods, may provide clues about the kinds of political relations that existed between societies over large areas. Some kind of barrier to direct contact and exchange, for example, appears to have been in place separating the chiefdoms of western Alabama and northwest Georgia during the Mississippian period, since both mundane and elite artifacts from the two areas were distinctive and non-overlapping (Welch 1986:178-184). Moundville prestige-goods and raw material exchange "extended several hundred miles to the north, west, and south of Moundville, but it never extended to the northeast, east, or southeast" (Peebles 1987a:33). The minimal evidence for contact between these areas suggests that a major buffer zone, perhaps comparable to the "desert" separating Ocute and Cofitachequi in the 16th century, lay between the Wilbanks phase Etowah and Moundville II/III chiefdoms.

The relative placement of settlements with respect to each other can also be used to infer the territorial extent of prehistoric chiefdoms. One method involves drawing Thiessen polygons around major sites or centers (Renfrew 1973, 1976). This type of analysis assumes each center controlled the terrain around it out to some distance between it and surrounding centers; calculation of this distance entails weighting each site according to its size and location in the overall regional hierarchy. In northwest Georgia the size and spacing of sites have been used to great effect to delimit the territorial extent of the constituent chiefdoms of the paramount chiefdom of Coosa (Hally et al. 1989), as discussed in a subsequent section. When even spacing of settlement clusters is observed, it is commonly attributed to competition for the land in the intervening areas. Upham (1982:73-105), although working with Southwestern data, has argued that the spacing of centers may delimit region-wide alliance patterns.

Warfare

The emergence and decline of complex chiefdoms has been variously linked to warfare by some authorities, and military might and prowess appears to have played a role in the maintenance of elite authority in many chiefdom societies. Archaeological and ethnohistoric evidence for Southeastern warfare has been discussed at length by a number of scholars (Chapter III; see also DePratter 1983:44-67; Dye 1989; Larson 1972; Milner et al. 1988, 1989). Architectural and skeletal data comprise the bulk of the archaeological evidence for warfare from the region (i.e., evidence for fortifications, the burning of communities, the presence of probable trophy skulls, or bodies with embedded arrows, parry fractures, signs of scalping, or other inflicted wounds). Several explanations for Mississippian warfare have appeared in recent years that warrant examination here, since the process appears intimately linked to the larger problem at hand, namely the resolution of cycling, and the causes of cycling, archaeologically.

Perhaps the most widely accepted view about the causes of Mississippian warfare, advanced by Larson (1972), is that it was a result of competition between societies for arable land, and ultimately brought about by population pressure. Southeastern warfare thus served as a mechanism by which population growth was both fostered (for victorious societies) and checked (for losing societies). Larson (1972:389) argued that the land best suited for intensive Mississippian agriculture, sandy and silt loams in close proximity to rivers, was so restricted in distribution that its control was of critical importance. Warfare focused on the control of this land:

> ...perhaps the primary cultural objective of warfare was the seizure of a town and, hence, the territory it controlled. This territory was of critical economic importance because of its rich, but restricted, agricultural land and its environmental diversity. ...warfare seems to have been essentially an adaptive mechanism whereby the pressure generated by an increasing population was relieved either by predatory expansion or a relatively large number of deaths [Larson 1972:389].

A strong correlation between Mississippian site location and floodplain terrace settings has been noted by a number of scholars working in the South Appalachian area (Anderson 1975; Ferguson 1971; Murphy and Hudson 1967; Ward 1965), providing some support for this argument.

Except in areas like Polynesia, where land of any kind was limited, however, there is little evidence to suggest that pressure on agricultural land was a particularly critical factor constraining settlement or population growth in chiefdoms on continental land masses (Fallers 1973; Goody 1971; Taylor 1975:41, 81). Motives for warfare in the ethnohistoric accounts from the Southeast, for example, do not mention control of agricultural land (Gibson 1974). Instead, warfare appears to have been over power, mainly the control of people and the surplus they could could produce, and for personal prestige. The primary assumption in Larson's model, that floodplain soils were the only soils that could be intensively utilized by Mississippian populations, is no longer tenable. It is evident from the regional archaeological and ethnohistoric record that Mississippian populations made use of a range of microenvironmental zones and soil types. The argument that farming was restricted to floodplain areas, in fact, is directly controverted by the evidence for upland farmsteads that is observed in some areas (Kowalewski and

Hatch 1988; Rudolph and Blanton 1980; Shapiro 1983:68-74, 1985).

An alternative "resource control" argument that has appeared in recent years has focused on the control of animal protein and hide resources rather than of arable floodplain soils (Gramly 1977; Smith 1975; Turner and Santley 1979). As Smith (1975, 1978) has demonstrated, Mississippian occupation of floodplain environments was directed not only to the agricultural potential of this area, but also to its rich wild plant and animal resources. The dense, predictable subsistence resources in this zone, coupled with their somewhat restricted occurrence, does favor the development of territorial behavior, defined as the active defense of valued resources (Dickson 1981:912; Dyson-Hudson and Smith 1978). A good argument can also be made that it was not the soils themselves that were actively defended but the fields cleared on these soils, which represented a considerable labor investment (Gilman 1980). In these respects, Larson's original argument appears viable: floodplain resources and facilities may have prompted territorial behavior, including overt warfare.

Unfortunately, these arguments, while plausible, are not well supported by the Southeastern archaeological record. The most telling evidence against any of the ecologically based "resource control" arguments that have been advanced is the fact that while large areas of the Southeast underwent depopulation and abandonment at one time or another over the course of the Mississippian, these areas were not immediately or in some cases ever occupied again, even though chiefdoms continued to occupy neighboring areas. Much of the Central Mississippi Valley, for example, was abandoned around A.D. 1400, when it became the "Vacant Quarter" (Williams 1982). Complex chiefdoms such as the Nodena phase of northeast Arkansas continued to the south, as did the Caborn-Wellborn and Madisonville societies along the Ohio River. The abandonment of the central Tennessee River Valley after ca. A.D. 1300 is another example of a large area that was precipitously abandoned without reoccupation. Complex chiefdoms continued to exist, however, in the nearby Black Warrior Valley to the south and the

Coosa River Valley to the southeast. While environmental degradation may be responsible for population decline in parts of the Southeast, it does not explain patterns of large-scale abandonment, or why some areas were not reoccupied for centuries.

The entire lower course of the Savannah River was abandoned after A.D. 1400 or so, and remained unoccupied for over two centuries during both favorable and unfavorable climatic conditions (see Chapter VI). Given the rivalry observed at the time of contact between elites in many Southeastern chiefdoms, sociopolitical concerns, rather than or in addition to ecological factors, appear to have played a major role in at least some of these depopulations. That is, some patterns of territorial abandonment within the region appear to have been politically motivated or instigated, reflecting the relocation of populations from less successful to more successful elites, either by choice or through the threat or use of force. Given the absence of evidence for large-scale population reduction due to warfare in either the ethnohistoric literature or the archaeological record, furthermore, it is debatable whether warfare had much of an effect on regional population levels. Region, in this case, refers to the Mississippian cultural area. Chronic conflict would, of course, result in considerable population movement and relocation within this area, as alliance networks and political entities (i.e., complex chiefdoms) formed and collapsed.

Turning from ecological arguments about the causes and consequences of Mississippian warfare, Gibson (1974) has suggested that it served as a psychological safety valve. In his view, Mississippian warfare helped to bleed off tensions created by the inegalitarian status hierarchy, by allowing commoners demonstrating prowess in warfare to achieve honored status and enhanced social position. This appears to have carried over to success in subsistence pursuits, notably the hunting of large game. A linkage between hunting, masculinity, and warfare is evident in many Southeastern Mississippian societies. This appears to be because to be a hunter one was also be forced to be a warrior, due to the possibility of hostile encounters with members of rival polities the farther one traveled from the central communities of a polity. Higher social status, accordingly, accrued to those who ranged far from settlements in the hunt, than on those who remained near fields and communities. These status distinctions were, of course, related in part to the degree of interpolity competition present in a given region. As noted in Chapter III, Brown has suggested that a major military cult was in existence, symbolized by the falcon impersonator and dominated by the elite, but also in all probability co-opting effective warriors among the commoner population. Peaceful conditions may have thus been undesirable for purely social reasons, since aggression might be channeled inward against the elite rather than outward against members of other societies. Sustained aggression between the polities occupying a region would ultimately support the elite's position, since it would reduce the likelihood that dissatisfied populations could relocate into the territory of another elite. It would also tend to strengthen what might otherwise be unstable alliance ties among separate sociopolitical units, specifically those bound together in defensive arrangements.

Dickson (1981), in a reasoned synthesis, argued that both the ecological and sociological explanations advanced for Mississippian warfare were correct. While Southeastern warfare was, in his view, undoubtedly triggered by ecological concerns, notably the need to defend the highly circumscribed floodplain resource zones, there were also sociological reasons for its prevalence, notably the mediation of social tensions. To this a much broader array of factors must be considered, including the legitimization of elite position, the maintenance of a status and administrative hierarchy, and the elimination of rivals.

The role of warfare in the emergence and expansion of the Mississippian adaptation has received considerable attention by archaeological scholars. Smith (1984) has recently discredited the long-held view (Willey et al. 1956) that the Mississippian adaptation spread through the Southeast as the result of direct movements of people out of the Central Mississippi Valley, conquering and replacing indigenous groups as they expanded. In most cases where the archaeological record has been examined closely, Mississippian emergence has been shown to be an indigenous development (Smith 1990). Given the evidence for large-scale population movements within ethnographic chiefdoms documented in Chapter III, however, it would be inaccurate to rule out population movement completely during the Mississippian period.

In particular, localized and more widespread population movement appears characteristic of chiefdoms, as communities relocate once firewood or game are exhausted, or as support populations respond to shifts in power over the landscape. While long-distance colonization thus appears an increasingly improbable mechanism behind the spread of Mississippian, researchers must recognize that some degree of population movement is inevitable in chiefdom societies. Communities are abandoned and new communities occupied to accommodate localized shortages of firewood, game, or tillable soil. Populations follow leaders, and as power shifts from one chiefly center to another some degree of population relocation is inevitable. While no evidence exists for population movements covering thousands of kilometers during the Mississippian, there is appreciable evidence for more localized movements, particularly of centers of power, of up to a few tens or hundreds of kilometers (Anderson 1990; Milner 1990b; Morse 1977; Morse and Morse 1980; Williams and Shapiro 1987; Williams and Smith 1989).

In the South Appalachian area the role of warfare and population movement in the emergence of Mississippian societies is uncertain. The origin of Macon Plateau, one of the earliest Mississippian cultures in the region, and its affects on other groups has attracted considerable attention and appears related to this question (cf., Willey et al. 1956; Smith 1984). Archaeologists are still uncertain about the temporal range and cultural affinities of Macon Plateau, although it bears so little relationship to presumed local antecedents that it may well reflect population movement into the area (Williams 1986). If it is an example of an intrusion or migration, could this have triggered a wave of secondary chiefdom formation over the surrounding region? The appearance of fortifications at other local Early Mississippian sites such as Woodstock Fort, although over 185 kilometers away to the northwest, may reflect a defensive reaction and social reorganization by indigenous groups in response to the appearance of powerful neighbors (Carneiro 1981:66; Sanders and Price 1968:132).

The complex chiefdom that arose at Etowah in the 11th through 13th centuries appears to have had a similar effect on societies over the surrounding region. Some of the earliest Mississippian ceramics in the Oconee and the Savannah River valleys, well to the east of Etowah, are characterized by Etowah design motifs and suggest possible trade, colonization, conquest, imposition of outside elites, or tributary relationships. Minimally they indicate interaction and influence occurred over considerable distances, although the precise mechanisms remain to be determined. The time-transgressive spread of Mississippian culture over the South Appalachian area, with centers in west Georgia appearing some 200 years earlier than those in central South Carolina (Anderson 1989; Anderson et al. 1986; DePratter and Judge 1986; Ferguson 1971; Ferguson and Green 1984), may have been furthered by warfare, and been characterized by both primary and secondary chiefdom development. Some form of movement was apparently occurring, although whether this process was prompted by warfare, or included the movement of ideas or people, or both, remains unknown.

Factional Competition

Resolving correlates of factional competition and related historical factors that prompted sociocultural change in Mississippian society is a particularly exciting challenge facing Southeastern archaeologists, one directly relevant to the study of chiefly cycling (Brumfiel and Fox n.d.; Marquardt 1988). What we are attempting is the development of measures and linking arguments by which processes such as alliance formation and maintenance, elite legitimizing strategies, and political competition may be examined in prehistory. Such measures are critical to the study of sociopolitical change in chiefdom societies. One procedure employed to measure factional competition involves the examination of elite goods. Brumfiel (1987:667) has recently argued that elite consumption (i.e., prestige goods production, exchange, and use) "was the means by which status, power, and alliance were affirmed, contested, and changed" and that it served as "an idiom of political negotiation."

Elite goods exchange is one way this process may be monitored. It has been variously suggested that the volume of elite goods in circulation, and their quality (measured in terms of the labor investment in their production), is a direct reflection of the the overall health or political stability of a chiefdom (Peebles and Kus 1977; Welch 1986). Marked changes in prestige goods flow, in this view, signal changes in organizational stability and complexity. That is, when leadership positions were stable, elite goods production and distribution would likewise be stable. Leaders in trouble, in contrast, might step up the flow of goods, increasing the kind of activity designed to reinforce and legitimize their position. If attempts to reestablish a power base proved unsuccessful a decline in the flow of prestige goods might soon follow, since the elites would no longer control the kinds of resources (i.e., labor surplus) necessary to maintain the flow.

A decline in the flow of prestige goods within and between chiefdoms does not always mean these systems are in trouble, however. It may instead mean they are becoming increasingly powerful and centralized. In systems with strong authority structures, particularly those based on secular power (i.e., coercion) rather than ideologically based legitimizing strategies, less effort may have been required to maintain subordinates in their position. Loyalty, in this view, was maintained by force rather than purchased or coopted. Archaeological examples from the Southeast illustrate both processes. A decline in elite goods, as reflected in mortuary offerings, has been observed prior to the abandonment of several centers in the region, notably at Cahokia and Spiro (Milner 1987a, 1990b; Rogers 1987), and in several small chiefdoms along the Savannah River (Chapter VII), to cite a few examples. At Cahokia elite goods exchange and mound building were certainly maintained and may even have increased for a time as the chiefdom declined, in what has been interpreted as a futile attempt by the elite to perpetuate their position (Milner 1990b). Finally, as discussed below, a low level of inter and intrapolity prestige goods exchange was particularly characteristic of the late prehistoric/initial contact era Southeast, even though strong centralized chiefdoms were present in many areas.

Competition between rival factions among elites is widely recognized as a primary factor contributing to the instability of chiefdom political structures (Goldman 1970; Helms 1979:24; Sahlins 1958:176-196; Wright 1984). As competition between factions increased, prestige-goods design complexity and quality has also been shown to increase in a number of cases (Brumfiel 1987; Feinman 1980; Gero 1985). Measuring levels of competition through analyses of elite goods occurrence and quality, however, is difficult in the Southeast. Contact period ceramic assemblages in many areas known to have been dynamic chiefdoms often seem fairly drab, such as the Barnett and Mulberry phase ceramics from the 16th century polities of Coosa and Cofitachequi, respectively, suggesting prestige-based elite display and exchange was either reduced compared with earlier periods, or was in other, more perishable commodities (DePratter 1987b; Hally 1984, 1986b; Hally et al. 1989; Hudson et al. 1985; Judge 1987). The latter interpretation is suggested by the ethnohistoric accounts, which repeatedly describe the gifts given to Spanish explorers as consisting of perishables such as food, bark and deerskin blankets, and furred and feathered capes. Lists of locally valued commodities from this period, such as the description of the content of the mortuary temple at Talimeco, in fact, tend to be dominated by perishable items. Unfortunately for archaeologists ceramics, carved shell, and ground stone artifacts, which dominate assemblages of presumed elite goods, are rarely mentioned in the accounts. Ceramics, while occasionally illustrated or described, go unmentioned as a valued commodity.

This does not mean that the situation is hopeless, however. Elaborate incised, engraved, or painted wares were present in some areas of the Southeast at various times during the Mississippian period. When these wares are geographically widespread, they send a strong signal that elite exchange was occurring. The contrast these wares provide when compared with most Mississippian ceramics from the region has prompted discussion about the existence of 'sacred' as opposed to 'secular' ceramic assemblages in these societies (Sears 1961, 1973). The differences between elaborate and mundane ceramics are usually expressed in terms of use in mortuary or ceremonial as opposed to domestic contexts, or use by elites as opposed to commoners. Building upon arguments raised here, it is probable that elaborate Mississippian ceramics saw considerable use in elite consumption rituals, a form of factional competition centered on feasting and the public display of wealth, as expressed through food-serving behavior (Brumfiel 1987). Elaborate wares are found in mortuary contexts in some areas, and their use was restricted to the elite throughout the region.

Detailed functional analyses within even seemingly mundane vessel assemblages from the Southeast, specifically from sites within the area occupied by the provinces of Ocute and Coosa in the 16th century, have revealed patterns of apparent status signaling and elite consumption behavior. Shapiro (1985a), for example, working with ceramics from the Dyar site, a mound center in the area of Ocute in central Georgia, has shown that large storage jars tended to occur in disproportionate numbers in mound as opposed to village contexts, suggesting elite storage and control of commodities. Hally's (1983a, 1983b, 1984, 1986; Rudolph and Hally 1985) work (albeit on small and temporally varied samples) with ceramics from domestic contexts in several Georgia chiefdoms suggests that greater diversity in vessel form characterizes Mississippian assemblages in the more complex societies. This may in turn reflect greater local interest in public consumption rituals.

Factional competition in the Southeast can be examined using settlement as well as artifactual data. Both centralizing and dispersing population may have been methods by which Mississippian elites sought to reduce or dissipate factional competition. The emergence of complex chiefly centers in some areas of the Southeast occurred at the expense of other nearby villages or centers, which frequently underwent a reduction in size and importance, or saw outright abandonment. This strategy would operate by reducing the likelihood of successful challenges to chiefly authority from factions in other communities, by reducing the immediate population base (i.e., labor force) these potential rivals could draw on. Potential rivals would be forced to operate in direct view of the paramount at the center, where they could be more readily controlled. This strategy would operate two ways. First, it would concentrate elites around the position and person of the chief, where they could provide direct support of and reinforce chiefly authority by sheer weight of numbers. Second, it would reduce the likelihood of successful challenges to chiefly authority from factions in other communities, by downgrading the sacred/ceremonial role of these centers, as well as the immediate population base these potential rivals could draw on. Potential rivals would be forced to operate in direct view of the paramount at the center, where they could be more readily controlled. Major episodes of moundbuilding and population increase at a primary center coupled with the reduction in importance or abandonment of nearby secondary villages and centers have been documented in the Moundville chiefdom during the Middle Mississippi period and in the American Bottom around Cahokia during the Early Mississippian Lohmann phase (Milner 1987, 1990b; Peebles 1987a; Steponaitis 1978,

1983) and, as we shall see, in the Savannah River Valley (Chapters V-VII)

At Cahokia and probably at Moundville, the emergence of a strong central community was also marked by the appearance of large numbers of small, widely scattered hamlets, a pattern noted in other areas of the Southeast as well (Morse and Morse 1983; Smith 1978; Williams and Shapiro 1987). Some scholars have argued that dispersed settlement was facilitated by the emergence of strong centralized authority and maximal regional political integration, which presumably meant populations could be scattered without fear of attack (Earle 1987:283; Steponaitis n.d.). Nucleated settlements, in contrast, would be expected during periods of minimal integration. While this argument seems to provide a rationale for population dispersal in some cases, notably when a chiefdom is so powerful its people have little to fear from its neighbors, it does not tell us *why* dispersal occurred. The most common explanations advanced see it as reflecting population increase or the need to ensure the production of an adequate food supply (Kowalewski and Hatch 1988; Rudolph and Blanton 1980). In the former view, a dispersed settlement system may emerge when population levels become too great to be efficiently maintained within village-sized or larger communities. Dispersing populations would reduce the stress on local resources such as firewood and game. In the latter view, dispersing populations and hence agricultural fields is considered a risk minimization strategy in regions where rainfall can be highly localized and varied, depending on the vagaries of summer thunderstorm patterns (Anderson 1989; Chmurny 1973). In the American Bottom dispersing fields also appears to have been a response to topographic conditions in the well-watered floodplain environment, specifically areas where crops could be grown (Milner 1990b). Dispersing fields would help ensure adequate harvests by overcoming the effects of localized droughts, hail, flooding, or excessive rainfall.

Population dispersal and degree of regional political integration, the archaeological and ethnographic record indicate, are not invariably related. Dispersed settlements occur not only in strongly centralized Mississippian polities, during periods of presumed maximal regional integration, but also when the regional political landscape was minimally integrated. The period of greatest population dispersal in the Mississippian occupations of the upper Oconee Valley, for example, occurred after the complex chiefdoms in the locality and throughout the general South Appalachian region had collapsed (Kowalewski and Hatch 1988). Dispersed settlements are also reported later in the historic period over the same general area, when little political structure remained (Milling 1940; Waddell 1980). While the landscape may have been secure due to an absence of competing polities in these cases, it was hardly maximally integrated.

Population dispersal appears to have been one way of dealing with external threats, particularly if populations realized that even if they nucleated they would be no match for aggressors. Among the early 20th century Ndembu of southeast Africa, for example, dispersion was a strategy employed to minimize potential losses, and reduce the likelihood that they would be perceived as a threat or even a prestigious or worthy opponent (Turner 1957:40). This is admittedly a poor example, however, since larger villages were reported among the Ndembu and neighboring groups during the preceding century, during the period of the slave trade, when conflict was rife (Turner 1957:40-41, 50). There are reports from this time, in fact, of autonomous villages merging into larger fortified communities in self-defense (Turner 1957:50). What this example does indicate is the need to examine historical trajectories when determining the causes of settlement patterns, since population nucleation and dispersal appears brought about by any number of factors.

Dispersing households has been considered a highly effective defensive measure by some societies. Each household, in this view, is a polity's front line of defense, serving as something of a tripwire, capable of raising the hue and cry in the event of raids, and giving the general population time to rally or retreat (Yengoyan 1985:164). It may have been deliberately implemented to help reduce social tension, by dispersing possible contenders to power, or their potential supporters. That is, one of the best ways to deal with a potentially dangerous rival would be to exile him from his powerbase or faction, or better still, to break up and disperse this faction. Elites in rival factions could thus have been either drawn into a single center, where they could be kept under tight control, or dispersed in small numbers over the landscape, and hence away from possible power bases.

In the later historic period Southeast, the dispersal of commoner households appears to have been a strategem of commoner resistance to elite rule. Speaking of the Natchez, Charlevoix noted:

> the savages, from whom the great chief has a right to take all they have, get as far from him as they can; and therefore many villages of this nation have been formed at some distance [Charlevoix in French 1851:159].

Settlement patterning may have thus be motivated as much by political as ecological conditions. Nucleation may thus have been a strategy implemented by elites to maintain followers. The use of settlement patterning in the pursuit of political goals in the late prehistoric Southeast has been described as a "sophisticated means of regional control and concomitant reduction in intergroup competition" (Milner 1987a:3).

The intensity of factional competition in various parts of the Southeast also appears to be related to physiography. As Blake and Clark (n.d.) have demonstrated, variation in interaction potential, measured in terms of the number of communities or polities with which a given community is in regular interaction, is directly linked to regional physiographic structure. Interaction potential is greatest in open, homogeneous, or otherwise unrestricted environments, and lowest in circumscribed, patchy, and restricted environments. The emergence and maintenance of social complexity, they argue, is directly related to the shape of the interaction networks that can form in a given area, and the ease by which these interactions occur. Paramounts should be able to exercise greater control over elites in subsidiary communities or polities when they are situated in fairly uniform or homogeneous landscapes. Few natural barriers would exist to interaction between centers, and social systems could develop optimal distributions (i.e., hexagonal matrices; Wright and Johnson 1975). Such a situation appears to characterize developments within the Apalachee province in north Florida and, possibly, within the American Bottom (Porter 1974; Scarry 1987, 1989; Shapiro 1986).

Less control over outlying populations, resulting in a greater likelihood of factional competition, would be likely in more irregular or patchy environments. Throughout most of the Southeast, Mississippian populations occur along widely separated linear river systems, a settlement patterning hindering efficient information flow and hence the development of large-scale polities. In most areas information flow between communities located in differing river systems would have been difficult, restricting political development primarily to within individual drainages. Such environmental structure fosters local autonomy and hence a greater likelihood of factional competition in complex chiefdoms that may arise. The fragile nature of Southeastern Mississippian polities, particularly the region's complex chiefdoms, thus appears to be linked to regional physiography, specifically the occurrence of settlements in linear, typically widely dispersed river valleys.

The intensity of factional competition in the Southeast was also linked to the ability of potential rivals to access elite goods exchange networks. Where a paramount was able to maintain rigid control over elite goods, such control would likely stifle rivals, and ensure the paramount's stability. Where access to exchange networks was easy or unrestricted, in contrast, rival factions might emerge fairly readily. The centers of some Southeastern chiefdoms were located at the interface of major physiographic zones (Ferguson 1971; Larson 1971a; Ward 1965). The central towns of the 13th century

Etowah and 16th century Coosa polities, at the Etowah and Little Egypt sites in northwest Georgia, respectively, were at the interface of the Ridge and Valley and Piedmont provinces. Major Mississippian centers also occur on the Fall Line throughout the region, another major physiographic boundary, separating the Coastal Plain and Piedmont provinces. This pattern may have been part of a deliberate strategy by the ruling elite to control the flow of prestige-goods from one region to another as to take advantage of the environmental diversity and natural productivity of these areas, the traditional explanation for the occurrence of centers in these settings. The location of centers at major communications and transportation nodes would undoubtedly have had a stifling effect on elites in centers displaced from these nodes.

The archaeological record can be expected to vary depending on the course factional competition took. Subordinant elites in chiefdoms can either go along with the paramount, acknowledging their dependency, or they can develop their own factions, and challenge the leader (Paynter 1981; Scarry 1987). The assassination of a chief and his replacement by a close relative, particularly one from the same community, would be unlikely to leave major traces, although the construction of a new mound stage or temple would probably take place. Such a process would probably occur fairly abruptly, and would be unlikely to be preceded by a period of overt public competition (i.e., entertaining and feasting, gift-giving, and the formation of marriage alliances) directed toward building a powerbase, since the usurpers, as tolerated and possibly trusted members of the paramount's community, would already be close in status and position (as well as physically close) to the leader they planned to depose.

Competition between individuals or elites in a number of differing centers, such as between subsidiary or tributary polities of a complex chiefdom, in contrast, would probably occur gradually and initially take the form of a competition for followers, who would be attracted by prestige goods distribution as well as other consumption/gift-giving rituals. As elites jockeyed for power, however, and overt competition increased, evidence for warfare might appear in the archaeological record. Threats of rebellion and assassination in historic period Southeastern chiefdoms were usually dealt with quickly and harshly, as the Calusa example cited in Chapter III illustrates. Leaders of unsuccessful factions were often killed when chiefly rule was secure. These events would be more likely to leave archaeological traces.

The archaeological record of complex chiefdoms in the Southeast illustrates their fragility and with few exceptions their rather ephemeral nature. Hally (1987), in an examination of mound stage construction at 24 Mississippian ceremonial centers in northern Georgia, found that few centers were occupied longer than 100 to 150 years, and many were probably in use for much shorter intervals. In some areas where centers occurred, notably within the Oconee and Savannah River valleys of eastern Georgia (as documented by Anderson et al. 1986, Williams and Shapiro 1987), centers were occupied and abandoned with such frequency that one investigator has described the political landscape as like a series of blinking Christmas tree lights (Mark Williams: personal communication 1988). Shifts in centers of power may have occurred for ecological reasons, such as firewood or soils depletion, but it is probable that many cases reflect changing power relationships, as first one faction and then another within a chiefdom or group of chiefdoms gained ascendancy.

Ideological and Secular Authority Structures

Brumfiel (1987) has recently argued that elite goods consumption patterns varied in response to changing political conditions in the late prehispanic Valley of Mexico. It may be suggested that elite goods production, distribution, and consumption patterns in the Southeast during the Mississippian period varied in response to changing regional political structure and the nature of interpolity relations, as well as to changes in the mechanisms by which elites within individual chiefdoms maintained power. The discussion that follows focuses on a major change that occurs in the regional archaeological record around A.D. 1350 to 1400 that corresponds to the Middle to Late Mississippian transition.

In the Southeast, elite goods production and interregional exchange seems to peak about A.D. 1200 to 1300, at the height of the occurrence and distribution of the elaborate iconography and mortuary ceremonialism of the Southeastern Ceremonial Complex (SCC) (Galloway 1989; Muller 1989:15). Religious symbolism pervades the region at this time, and is expressed on a wide range of materials, including marine shell, copper, and pottery. This period and immediately before saw the greatest monumental construction in the region, with extensive moundbuilding and elaborate mortuary ritual documented at centers such as Cahokia, Etowah, Lake Jackson, Moundville, and Spiro. Far flung alliance, exchange, and ritual/ceremonial networks were apparently operating throughout the region. The incidence of extralocal prestige markers such as marine shell and copper peaks at sites such as Spiro in Oklahoma (Rogers 1987). Elaborate ceramics such as Ramey Incised pottery from Stirling phase Cahokia and engraved pottery from the Moundville site in western Alabama are found over large areas, suggesting elaborate exchange relationships between the highest tier of elites (Kelly 1980; Milner 1987a, 1990b; Steponaitis 1983; Welch 1986). Warfare, while undoubtedly common if not endemic (i.e, witness the elaborate fortifications at Moundville and Etowah), does not appear to have constrained inter-polity elite interaction and intra-polity monumental construction.

This pattern of elite goods exchange, monumental construction, and warfare changes dramatically in the Southeast after ca. A.D. 1350 to 1400. Moundbuilding diminishes in many areas, while evidence for settlement nucleation and large-scale warfare increases markedly, the former apparently in response to the latter. Interregional elite goods exchange falls off, as the widespread exchange of icons and other artifacts between elites characteristic of the SCC is replaced by localized, intrapolity exchange (Muller 1989:16). These trends have been documented in many areas of the Southeast, including in the American Bottom early in this interval (Milner 1987b, 1990b), in the Central Mississippi Valley of northeast Arkansas and southeast Missouri (Morse and Morse 1983:247-250, 255, 281-284), at Moundville (Welch 1986), and in northwest Georgia (Hally and Rudolph 1986). During the Jackson/Velda phase transition in northern Florida, occurring ca. A.D. 1450, a marked decline in both SCC iconography and extralocal trade has been documented (Scarry 1987). Rogers (1987) has suggested that the decline and eventual abandonment of the Mississippian polity centered at Spiro may have been brought about by the decline in elite-goods exchange. Spiro, located in eastern Oklahoma, was at an end point in the regional exchange network, and when it dried up a source of chiefly legitimization dried up as well, leading to societal collapse (Rogers 1987). All of these events are probably interrelated, and may reflect increasing regional population and greater competition between elites for control over people and resources.

The Late Mississippian has sometimes been referred to as a period of cultural decline because of the dimunition in moundbuilding and interregional exchange of elaborate iconography (Peebles 1986). This change is mirrored in the reduction in scale of elite exchange from a regional to a local level, as the flow of such goods is increasingly directed within rather than between polities. Elite exchange in this latter period appears directed more towards developing and maintaining alliances between the elites of local and proximate communities, than with the elites in comparable positions at widely scattered centers throughout the region. This may be attributed, in part, to a rise in warfare throughout the region, and the need to devote greater energy to defense than to ceremonialism. Massive mound construction and sumptuary interment rituals no longer occupied a seemingly predominant role or focus for social energy. While ritual and mound building continued to occur, and undoubtedly played a major role in life, less emphasis was placed on the reification of ideology serving to legitimize and sanctify elite rule. The energy invested in these efforts is markedly diminished. Monumental construction efforts comparable to those producing the mound complexes at Cahokia, Etowah, or Moundville are nonexistent, and the kind of elaborate mortuary behavior seen at Mound 72, Cahokia, at Mound C at Etowah, or in the Craig Mound at Spiro, centers that were in marked decline or gone by A.D. 1400, is certainly not evident.

This patterning may be related to changes in the nature of authority structures within Mississippian societies, following the argument developed previously from the work of Goldman and Sahlins. Elite appeal to ideology to legitimize their right to power apparently gave way, over time, to more secular structures, employing overt use of force. That is, over the course of the Mississippian, the strategy by which elites legitimized their privileged position and authority changed dramatically. The sacred position of the elite during the Middle Mississippian is indicated by their participation in region-wide ceremonial and exchange networks. This participation would emphasize their control over events and materials at great distances, what Helms (1979) has called "esoteric knowledge". In the Late Mississippian, as regional populations grew, competition and warfare rather than cooperation and exchange came to dominate interpolity relationships. The cooperation of local, rather than more distant allies increasingly came to be required to maintain social prerogatives, and goods exchange tended in this direction, to develop and maintain local alliances. The arena of elite competition thus changed in both scale and scope. While the interregional elite goods exchange network characteristic of the Middle Mississippian helped reinforce local authority, in part through direct or indirect appeals to sacred authority, the Late Mississippian pattern of localized exchange was directed towards maintaining more secular cooperative or coercive mechanisms.

These changing regional patterns of warfare, elite goods exchange, and settlement patterning, and political structure from the Middle to Late Mississippian should not be considered indicative of cultural decline, but instead reflect a natural, evolutionary response to changing conditions in the social landscape. The complex chiefdoms encountered by the Spanish explorers penetrating the Southeast in the early 16th century were densely populated, complex, and geographically extensive, and were probably equal in scale to anything that came before. Where they differed was in emphasis, specifically in the means of maintaining and exercising power, areas of endeavor where surplus labor and societal energy were channeled.

Chiefly Cycling in the Prehistoric Southeastern United States: Case Studies

Introduction

In the pages that follow, cycling in chiefdom society is examined using three Southeastern archaeological examples, the complex Mississippian chiefdoms centered at Cahokia, Moundville, and Coosa. Two of these polities, Cahokia and Moundville, were complex chiefdoms that had collapsed before European contact, while the Coosa polity was apparently at or near its height at the time of initial contact. These societies are perhaps the best documented complex chiefdoms in the region, with dramatic developmental histories. The evidence accumulated to date about the emergence, expansion, and collapse or other changes that took place in these societies illustrate how and why chiefly cycling proceeds. While much of the research to date has been from the perspective of single sites or localities, the effects of events in these polities on the developmental histories of other chiefdoms in the region will need to be examined.

The Cahokia Polity

The American Bottom of the Central Mississippi Valley was occupied by the most complex chiefdom society to emerge during the Mississippian period in the Eastern Woodlands. A series of single and multi-mound centers arose throughout this ca. 3172 square kilometer area after A.D. 800, the largest of which, the site of Cahokia, covered close to 13 sq. km in extent at its height around A.D. 1250 (Figure 15). Over 100 earthen mounds were built at Cahokia, the largest of which, Monks Mound, measured 300 by 212 m at the base and stood 30 m high. This mound was the largest earthen structure erected in the New World, and was exceeded in size only by the Pyramid of the Sun and the great pyramid at Cholula in Mexico (Fowler 1975, 1978). By 1400, however, a few centuries after its peak, Cahokia and many of the other centers in the American Bottom had been largely abandoned. The decline of Cahokia is perhaps the most dramatic example of chiefdom collapse that exists anywhere in the world.

Milner (1987a, 1987b, 1990b) has recently summarized developments over the course of the Mississippian period in the American Bottom, using four descriptive stages (coalescence, florescence, maintenance, and social fissioning), corresponding to developments during the Emergent Mississippian period, and the Mississippian period Lohmann/Stirling, Moorehead, and Sand Prairie phases. Milner's synthesis forms the basis for much of the discussion presented here. During the Emergent Mississippian period (A.D. 800 to 1000; see also Kelly 1987, Kelly et al. 1984) intensive maize agriculture was first adopted, and numerous small, nucleated communities oriented around central plazas appear on the bottomland ridges. Many of the area's mound centers, especially Cahokia, Lohmann, and Lunsford-Pulcher have extensive Emergent Mississippian components, although whether mound construction was occurring, and the details of the political landscape (i.e., with a hierarchy existed among these settlements) remains unknown (Milner 1990b). Local ceramic traditions occur in several areas, suggesting societies characterized by a fair degree of autonomy (Kelly et al. 1984). While simple chiefdoms probably emerged in a number of areas within the American Bottom at this time, how they did so remains poorly examined.

Dramatic change is evident in the archaeological record after A.D. 1000, during

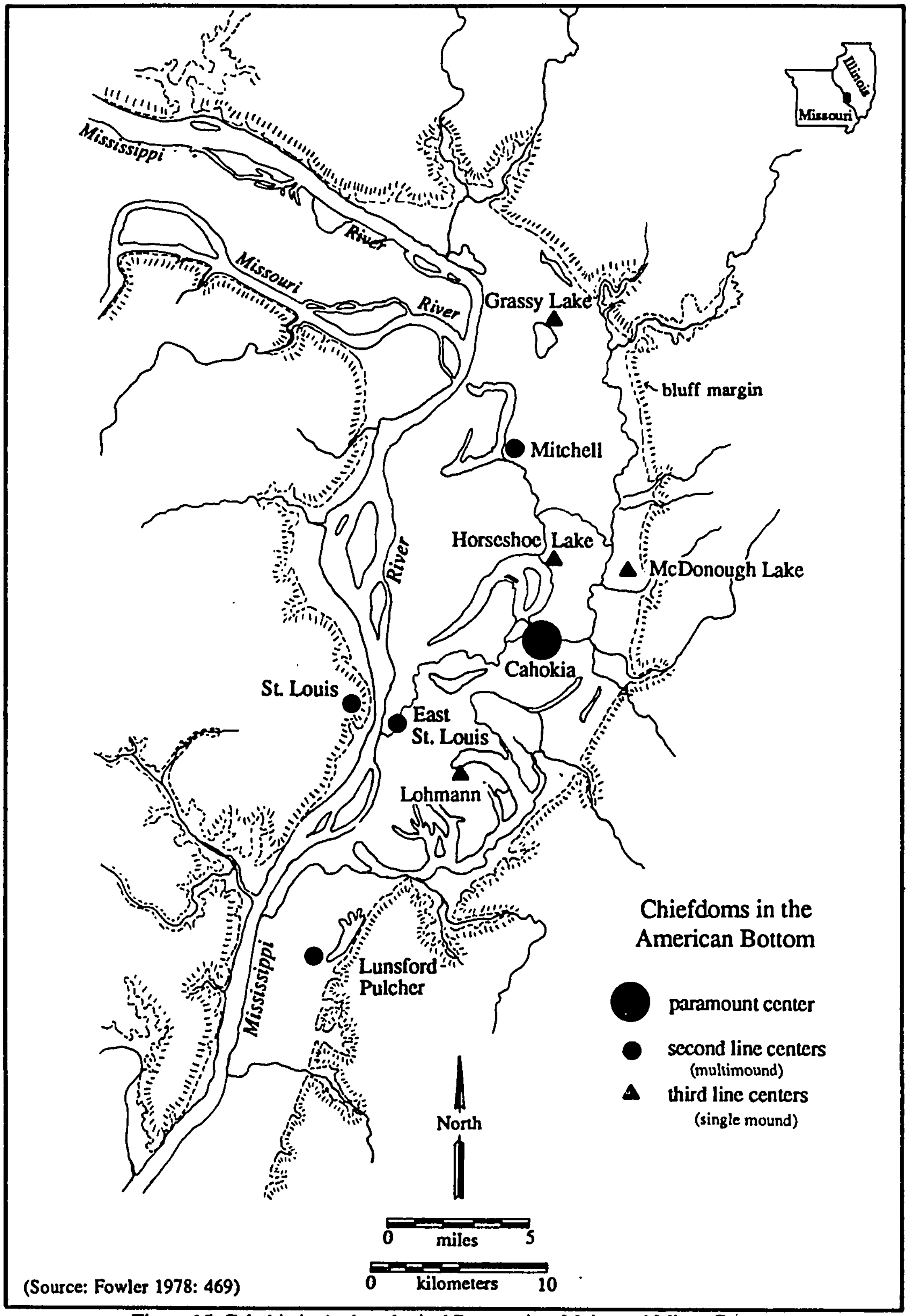


Figure 15 Cahokia in Archaeological Perspective: Major and Minor Centers in the American Bottom During the Stirling Phase.

the Lohmann (A.D. 1000 to 1050) and Stirling (A.D. 1050 to 1150) phases. Population grew rapidly within the region and mound construction is documented at many centers, some of which increase markedly in size (Fowler 1974; Gregg 1975; Milner 1986, 1990b). The emergence of a superordinate elite social stratum is evident from mortuary data, notably the occurrence of segregated burial areas and facilities for elite and commoner elements of society (Milner 1984a). This is most spectacularly represented by the Lohmann phase burials within Mound 72 at the Cahokia site, which were accompanied by lavish grave goods and numerous retainer sacrifices (Fowler 1974). The larger centers were internally differentiated, with mortuary, residential, and temple/ceremonial areas present. Evidence for interaction with societies over large areas of the the midcontinent increases throughout the Emergent Mississippian and Lohmann phases, and peaks during the Stirling phase. A wide range of extralocal raw materials are documented at Cahokia, while distinctive Ramey Incised and Powell Plain Stirling phase vessels are found at sites from the Yazoo basin of northeast Mississippi to Aztalan in Wisconsin (Kelly 1980; Milner 1987a, 1990b)

The small outlying nucleated villages characteristic of the Emergent Mississippian were replaced by a larger number of dispersed farmsteads during the Lohmann phase, a settlement pattern that continued throughout the remainder of the Mississippian occupation of the area. Public structures such as sweatlodges and possible men's houses, probably accompanied by a few domestic buildings, have been identified at some of these outlying sites, suggesting some form of communal integration among these presumed commoner populations (Mehrer 1982; Milner 1984b:44, 1990). Larger-scale integration, however, was coordinated through ceremonial centers, replacing the village-level integration present previously.

The adoption of a dispersed settlement pattern has been attributed to the emergence of greater regional integration and a concomitant reduction in intergroup conflict, reducing the need for populations to aggregate for defensive purposes. Additionally, it has been suggested that dispersing the farming population would have greatly increased agricultural production, by ensuring that most tillable areas within the patchy bottomland habitat could be efficiently brought under cultivation, and at the same time minimizing the risk of crop failure brought about by varied rainfall and flooding patterns (Chmurny 1973:95; Milner 1987a, 1990b). Given the rapid population growth occurring during this interval, such innovations are not altogether unexpected.

Complex chiefdoms are assumed to have been present in the American Bottom during the Lohmann and Stirling phases, with one unquestionably centered on Cahokia. The relationship of outlying centers to Cahokia at this time, specifically their degree of autonomy, has been the subject of some debate. Fowler (1974, 1975) saw Cahokia as the paramount center in the region, at the apex of an inferred three-level decision-making hierarchy (over a four-level settlement hierarchy), and exercising direct control over all the other centers in the American Bottom. Milner (1987a, 1990b), in contrast, finds it unlikely that any chiefdom society, given their fragile kin-based administrative structures, could be so highly organized, rigidly hierarchical, and internally differentiated. Instead, Milner views Cahokia as something of a *primes inter pares*, the dominant political entity among a number of organizationally similar if less complex chiefdoms. These other chiefdoms were quasi-autonomous entities exercising considerable control over events in their own territories, creating what Milner (1990b) has described as an organizationally and politically "redundant" landscape. While Cahokia dominated these other societies, and got them to operate in its interest, this control was indirect. That is, as long as the position of Cahokia was acknowledged and its interests maintained, perhaps through the periodic submission of tribute or corvee labor, or through support in warfare, practices observed in paramount chiefdoms in the region during the 16th century, the other chiefdoms were more or less allowed to go their own way.

Cahokia's dominance within the American Bottom has been various attributed to its central location within and immediately proximate to extensive floodplain habitats (Fowler 1974, 1978; Milner 1990b), which makes sense following the arguments about environmental restrictedness and interaction potential developed by Blake and Clark, and discussed in Chapter II. Cahokia is geographically admirably situated to control the flow of information and goods throughout the American Bottom. Its rise in importance was undoubtedly related to its position at the center of this flow, regardless of the degree of actual control it exercised over events in outlying centers.

Whether the relationships between the elite at Cahokia at its height and the elite in other centers were based on force, ideology, or kinship is something that is currently unknown. As Milner has observed:

> It is not known how formerly separate and initially more-or-less equivalent sociopolitical groups were integrated as part of a single Cahokia-dominated regional system. Previously unrelated elite lineages may have been incorporated into an expanding Cahokia superordinate social stratum. Alternatively, individuals from Cahokia may have replaced previously important personages in affiliated town-and-mound centers. ...Linkages among members of the superordinate strata at major sites presumably facilitated the movement of exotic raw materials and artifacts used by elite groups in rituals to reinforce the aura of authority and to emphasize their close association with a regional social order dominated by Cahokia. ...Once the political centralization process was initiated, it may have progressed at an ever-escalating rate as once roughly equivalent polities became dwarfed by the manpower mobilization potential of a Cahokia dominated system. Expansion must have been played out against an existing background of antagonistic and alliance relationships among the social groups of the region. The Cahokia regional system would not have been able to expand infinitely without a major structural reorganization of society. Eventually it would have been limited by the capacity of members of the principal lineage(s) to project their authority and to control effectively a number of geographically dispersed subsidiary sociopolitical units featuring locally influential leaders who were busy pursuing their own potentially divisive interests [Milner 1990b:34-35].

Thus, there were very real limits to growth in the Cahokia system, limits placed there by the nature of chiefdom political organization.

During the Moorehead Phase (A.D. 1150 to 1250) Mississippian occupations in the American Bottom began to go into a state of decline, or what Milner (1987a) has described as, at best, an attempt at system maintenance. The number of outlying communities that were occupied decreased, something attributed, in part, to environmental degradation, specifically a reduction in the amount of bottomland consistently available for cultivation (Brown et al. 1988; Milner 1987b, 1990b). Occupation of progressively higher portions of the floodplain is observed, a pattern that may well reflect increases in erosion, runoff, and flooding brought on by overcutting. Overexploitation of firewood, game, and agricultural soils have all been explanations advanced for the Moorehead phase population decline (Fowler 1975:100-101).

Mound construction at Cahokia continued during the Moorehead phase, however. The pattern of continued or expanded monumental construction activity has been interpreted as an attempt on the part of the elites to maintain their position, through legitimizing enterprises, in the face of increasing problems (Milner 1987a, 1990b). A bastioned palisade was erected around the central portion of the site, suggesting intra- or intersocietal conflict was on the increase. Long-distance exchange continued, although apparently on a diminished scale. Cahokia Cordmarked and Wells Incised vessels occur over a wide but more restricted area than Stirling phase ceramics. Interestingly, during both the Moorehead and Sand Prairie phases analyses of skeletal samples indicates that the general population remained in good health, indicating that the decline of the system did not immediately "translate into measurable health-related problems" (Milner 1990b:37).

During the ensuing Sand Prairie phase (A.D. 1250 to 1400), complex chiefdom organization collapsed throughout the American Bottom. Population decline continued in outlying areas, but now many of the large centers were themselves abandoned, or minimally occupied. At Cahokia residential structures were erected in former ceremonial precincts, intrusive burials were placed in a range of mound types, and the bluff-crest cemeteries characteristic of the preceding Lohmann through Moorehead phases were replaced by scattered graves near residential areas in the floodplain (Milner 1984a, 1987a; 1990a). As the traditional centers of the American Bottom declined, however, at least two polities on the periphery of the region, thought to have been simple chiefdoms, appear to have expanded in size and influence, one in the vicinity of the Emerald Mound some 25 km to the east, and another centered on the Common Field site ca. 100 km to the south (Milner 1990b). While these societies were small when compared to Cahokia at its height, their presence indicates that power and organization may have been in the process of shifting, rather than disappearing entirely from the general region. While these or other centers in the Central Mississippi Valley, or elsewhere in the Southeast, may have eventually come to rival Cahokia, the effects of European contact precluded this possibility (see Chapter VIII).

Although Mississippian chiefdoms were present in the American Bottom for several hundred years, the period of florescence was comparatively brief, on the order of a century or so, during the Lohmann and Stirling phases. The decline of Cahokia was extended, however, lasting as long as its period of florescence, if not longer. Milner (1986, 1990b), based on counts of structures in extensive excavations in outlying areas, has noted that, given the population peak in the Stirling phase, population decline during the ensuing Moorehead phase could have been quite gradual, on the order of 1% or less per year, and still yield the dramatic cumulative effects observed archaeologically by the end of this phase. Organizational collapse in the case of Cahokia appears to have been gradual rather than precipitous.

The extent of Cahokia's influence on chiefdoms elsewhere in the Eastern Woodlands has been the subject of extensive investigation. Traditionally the American Bottom was viewed as something of a font from which all Mississippian arose, in some cases the source of invading waves of population (cf., Willey et al. 1956, Smith 1984). In recent years the extent to which migration played a role in the spread of Mississippian has been seriously questioned, to the point that Mississippian emergence from local Woodland traditions is believed to have occurred in most parts of the Southeast (Smith 1990). Cahokia's impact on Mississippian societies throughout the region is still, however, viewed as substantial by some investigators who envision its elites dictating tribute and production from societies over a large area of the Eastern Woodlands, including as far away as the New York Iroquois (Dincauze and Hasenstab 1989). Other investigators see its role as more passive, attracting goods and people, and rising to regional prominence by virtue of a favorable location and environment but, as appears to be the case with all chiefdoms, organizationally incapable of coordinating economic activities in societies hundreds of kilometers away (Harn 1978:260; Milner 1990b). While prestige goods exchange and even tribute extraction may have occurred between many of the societies contemporary with Cahokia, the volume probably declined rapidly with distance.

Within the American Bottom itself, over and above the long-term trend of emergence and decline, there is also clear evidence for shifts in power indicative of cycling behavior over the course of the Mississippian. Fowler (1978:462), for example, has noted that the intensity of occupation at the secondary centers in the American Bottom was linked, to some degree, to the direction of Cahokia's external relations. During the Lohmann phase, when appreciable evidence for contact with societies in the Lower Mississippi Valley and Caddoan area was evident, the Lunsford-Pulcher site in the southern part of the American Bottom appears to have been second only to Cahokia in importance. Later, during the Stirling and Moorehead phases, when contacts with the Plains are evident, the Mitchell site at the northern end of the Bottom near the mouth of the Missouri River assumed a prominent role. The occupational histories of the other centers within the locality also varied appreciably. Both Lunsford-Pulcher and Lohmann appear to have been abandoned or were only minimally occupied after the early part of the

Mississippian period (Esarey and Good 1981; Griffin 1977:487; Milner 1990b). At the Mitchell site, which was occupied for hundreds of years, there is evidence to suggest that much of the major construction occurred during a comparatively brief period (Porter 1974:151-154, 174-181, cited in Milner 1990b). Finally, as noted previously, as Cahokia itself declined, there is is some evidence to suggest that other centers were emerging. Thus, the chiefdoms in the American Bottom illustrate in microcosm developmental processes occurring throughout the Mississippian area. Chiefdoms emerged and declined, and power shifted over the landscape.

The Moundville Polity

The evolution of the Moundville chiefdom in west central Alabama, which at its height was one of the most powerful Mississippian chiefdoms in the Southeast, has been the focus of extended research in recent years, work that has been summarized by Peebles (1986, 1987a, 1987b). The process by which this chiefdom emerged, expanded, and declined provides a classic illustration of the process of cycling, not only by showing how organizational change occurred within the Moundville chiefdom itself, but also by showing how events at Moundville shaped the developmental trajectories of chiefdoms throughout the surrounding region.

The immediate precursors of the Moundville chiefdom were the Late Woodland West Jefferson phase peoples (ca. A.D. 850 to 1000), who lived in a series of scattered communities and practiced a hunting and gathering way of life supplemented by the cultivation of maize, with no evidence for hierarchical social organization. The Moundville community, the site of the later center, was a small village during this period, undistinguished from its neighbors. A series of simple Mississippian chiefdoms arose in the Black Warrior River Valley between A.D. 1000 and 1250, during the Moundville I phase (Figure 16). These were roughly equal in size and centered on small single mound

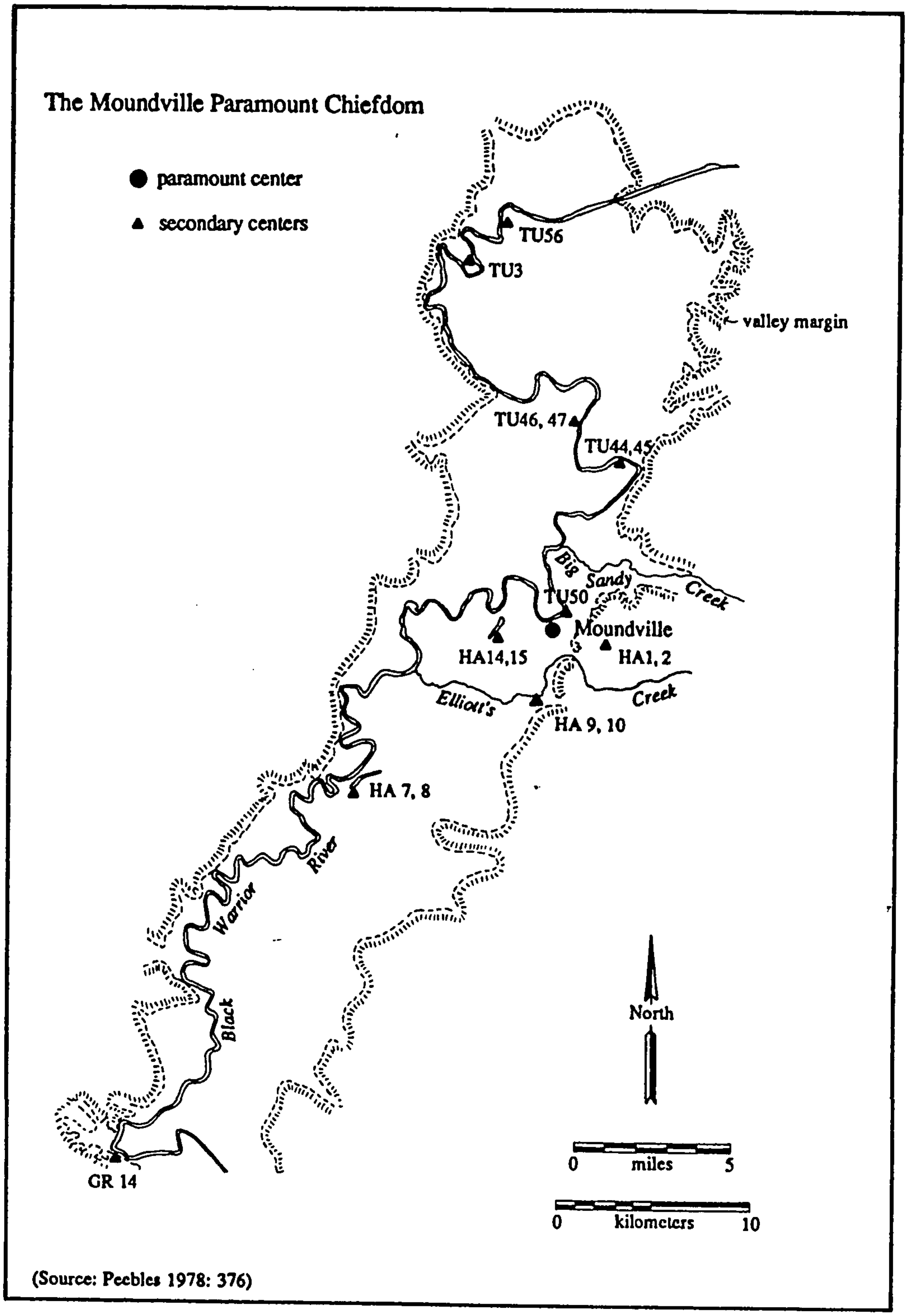


Figure 16. Moundville in Archaeological Perspective: Major and Minor Centers in the Black Warrior River Valley During Moundville III Period.

centers, one of which was Moundville, which covered approximately 2 ha. and was otherwise apparently undistinguished from the other centers (Steponaitis 1983:151-161). The vast majority of the population during this and succeeding periods are assumed to have lived in outlying smaller hamlets and villages, whose production was controlled, to some degree, by elites living at one of the centers. Intensive agriculture provided an important contribution to subsistence, and a hierarchical form of social organization is assumed to have emerged, although evidence in support of this remains minimal (Scarry 1986; Welch 1986).

By ca. A.D. 1200 the Moundville paramount chiefdom was beginning to emerge, a polity that expanded markedly in extent and influence during the Moundville II phase (A.D. 1250 to 1400), until by the Moundville III phase (A.D. 1400 to 1500) it was one of the major centers in the region. During the Moundville II phase the center at Moundville assumed dominance within the valley, growing in size from 2 to 50 ha, and from one mound to at least five (Peebles 1987b:9; Steponaitis 1983:157). Population throughout a ca. 50 km section of the Black Warrior Valley around Moundville was brought under the control of the paramount center. Other centers in this part of the valley continued to be occupied but were clearly subsidiary. Centers closest to Moundville were small and their locations were displaced towards Moundville, presumably to reduce transportation costs and facilitate administrative control (Bozeman 1982; Steponaitis 1978). Mound centers located farther away, in contrast, were larger and appear to have had greater autonomy. Settlements were positioned within the landscape in such a way as to "facilitate the flow of labor, goods, and information from the provinces to Moundville" (Peebles 1987a:27).

The emergence of the Moundville II paramount center was apparently coupled with a period of militaristic expansion. Chiefdoms in nearby drainages, notably in portions of the upper Black Warrior Valley, the central Cahaba, and the central Tennessee

River Valley disappeared during this time, and their defeat and incorporation into or relocation or movement away from the Moundville chiefdom is inferred. This rearrangement of regional population may have been the result of an intentional policy on the part of the Moundville elite to strengthen their position by eliminating potential threats from neighboring polities. Eliminating these societies' roles as middlemen would also ensure Moundville a more prominent place in regional prestige goods and alliance networks. At the same time that Moundville was expanding and nearby areas were being abandoned, the occurrence of extralocal prestige goods in mortuary contexts at Moundville, presumably brought in under the auspices of long distance exchange, declined markedly. Peebles has summarized the overall process:

> As Moundville achieved both local and regional dominance nearby polities were eliminated as exchange partners and potential rivals. In effect, Moundville insulated itself by eliminating proximate societies at a similar level of development and then instituted direct exchange relationships with polities to the north and northwest [Peebles 1987a:36].

Warfare may have taken resources formerly used for long distance exchange, but the rewards obtained from military action, Welch (1986:189) has suggested, probably more than offset the temporary decline in extralocal prestige goods.

The emergence of the Moundville paramount chiefdom thus brought about changes in the Mississippian societies throughout the surrounding region, changes that appear directly linked to events taking place in the Black Warrior River Valley. If neighboring societies were not eliminated altogether, it appears they were brought under some form of control. Fortifications, which were present in the Summerville I phase (A.D. 1000 to 1200) community at Lubbub Creek, a small Mississippian center on the Tombigbee River some 40 km west of Moundville, for example, disappeared during Summerville II/III times (A.D. 1200 to 1500). Only after A.D. 1500, when Moundville had collapsed, did they reappear. Fortifications were present at Lubbub Creek during periods of minimal regional integration, when the landscape was dominated by numerous small societies presumably in competition with one another for power, prestige, subsistence products, or other commodities. The disappearance of fortifications at Lubbub Creek, furthermore, occurred precisely when Moundville began to dominate the region, and in all probability reflects the emergence of fairly stable political landscape, under what Peebles (1987b:23) has called a "*Pax Moundvilliana.*" A subordination of elites in outlying centers and polities appears to have occurred in conjunction with this inferred military domination. The burials in the Summerville II/III and Summerville IV occupations at Lubbub Creek, unlike those in the earlier Summerville I phase, had only domestic ceramics in association. A disenfranchisement of local elites is indicated, although it should be noted that the samples are small (Peebles 1987b:14; Powell 1983).

The chiefdom reached its peak in power and influence during the Moundville III phase. The central town at Moundville grew in size from 50 to 120 ha, and from five to 20 mounds about a 40 ha plaza (Peebles 1987b:9; Steponaitis 1983:159-160). Burial and midden data from the site have been used to infer resident population levels, with differing results. Examining burial data by phase, Peebles (1987b:9-10) estimated that population grew ca. 400% between Moundville I and II and another 50% between Moundville II and III, when it peaked at ca. 3000 people. Over the same interval population within the overall chiefdom was estimated to have grown from 10,000 to 30,000, although these figures were, in the absence of reliable settlement data, largely speculative. Steponaitis (n.d.), in an analysis of midden debris from Moundville, noted that identifiable potsherds declined fourfold between the Moundville I and Moundville II and III phases. A decline in residential population was inferred, even as the site itself was seeing increased use as a ceremonial and burial center for people from across a large area, probably encompassing the entire chiefdom. If population growth actually occurred at the center, or at least within the chiefdom itself between the Moundville I and Moundville II and II phases, some of it may reflect the relocation of people from the chiefdoms to the north and east that collapsed about this time, an inference that could be tested through comparative skeletal analyses. The emergence of a complex chiefdom organization, capable of accommodating fluctuations in subsistence productivity that are likely to have occurred, may have permitted considerable internal population growth.

The burial data from Moundville suggest that elite population may have increased in proportion to total population over time. Elites, defined as individuals characterized by sumptuary mortuary ritual, comprised approximately 1% of the Moundville I population but rose to ca. 5% of the Moundville II and III phase populations. Reasons why this elite population growth occurred remain to be determined, although the increase in complexity of the chiefdom itself, in terms of size and constituent population, may have necessitated an increase in the number of elite decision-making personnel. Additionally, some of this growth may reflect the incorporation of defeated or coopted elites from the societies to the north and east that decline at this time. Alternatively, these figures may reflect changing use of the center itself, from a settlement with both elite and non-elite resident populations, to one increasingly occupied by elites. Whether elite population levels remained stable in relation to the rest of the population throughout the Moundville II and III phases is unknown. It would be interesting to see how elite population levels changed as the chiefdom declined toward the end of the Moundville III phase.

During the Moundville III phase the chiefdom was once again deeply involved in long distance exchange, with goods circulating to and from societies at considerable distances to the north, south, and west (Welch 1986:177-184). Interaction with contemporaneous societies in the Central Mississippi Valley is indicated, although, interestingly, no ceramic artifacts made in the South Appalachian area have been found in the Moundville chiefdom:

> Of the 153 imported ceramic vessels found thus far at Moundville, not one can be traced to a source due east of the Black Warrior River. There are vessels from the Nashville Basin and from southeast Missouri; there are vessels from Arkansas and from the Gulf Coast; but there is not a single

> example from the upper portions of the Coosa, Tallapoosa, and Chattahoochee Rivers [Peebles 1986:32].

The absence of interaction between these areas suggests that the enmity between the paramount elites of Coosa and Tastaluca observed by the Spanish in the 16th century (Chapter III) may have had considerable time depth, and markedly affected regional exchange patterns.

Sometime around or shortly after A.D. 1500, and prior to the time of European contact, the Moundville chiefdom collapsed. The succeeding Alabama River phase (A.D. 1500 to 1700) was characterized by small, egalitarian settlements evenly dispersed along the drainage. Population skeletal health in the western Alabama area declined markedly, as the organization that had previously buffered subsistence crises disappeared; Alabama River phase burials in the general region exhibit a much higher incidence of iron deficiency anemia than burials dating to the Moundville III period or its equivalent (Hill 1981; Powell 1988:189-191).

Peebles (1986:30, 1987a, 1987b) has argued that the collapse of the Moundville III chiefdom was brought on by population pressure. Growing population levels within the chiefdom led to a reduction in the agricultural surpluses necessary to maintain the elite prestige-goods economy (i.e, by feeding specialists, and providing wealth that could be used to purchase exotic materials). A decline in the occurrence of imported prestige goods in mortuary context, notably worked copper and marine shell, and extralocal ceramics, has been documented at Moundville over the course of the Moundville III phase (Peebles 1987b:14-15). With the collapse of the prestige goods economy the organizational system that was legitimized by and predicated upon it also collapsed. Once effective organizational controls over the subsistence economy went, a marked reduction in the population levels that could be maintained occurred.

The collapse of the Moundville III chiefdom thus is inferred to have occurred because increasing population pressure siphoned off resources that could otherwise have been directed toward maintaining the prestige goods network. As the flow of prestige goods diminished, the position of the elites was undermined; with the collapse of chiefly authority, the subsistence and settlement system based upon it likewise collapsed. Peebles (1987a:34) has noted that prestige goods economies can also be disrupted by competition for control of exchange relationships by competing groups within a society; by the cutting off or re-directing of exchange routes by outside groups, effectively isolating the original node; and through the decline of surpluses necessary to maintain elite participation in the network through the support of craft specialists, procurement expeditions, and other essential labor.

Elite population growth over the course of the Moundville chiefdom may have affected the stability of the tributary economy, by placing increasing demands on the system for prestige goods and other services. Localized participation in the prestige-goods exchange network diminished not only when the Moundville chiefdom was is in decline, however, but also when the center was consolidating its hold over the immediate region during the Moundville II phase. During the period of consolidation, it appears that local affairs took precedence over the maintenance of external connections and, as Welch has suggested, because successes in warfare were an accepted substitute for prestige goods. The Moundville case thus indicates that a decline in prestige goods in circulation cannot be invariably equated with a decline in organizational stability and complexity. Instead, the circumstances within which organizational change occur must be carefully evaluated.

The Coosa Polity

The 16th-century paramount chiefdom of Coosa, one of the largest and most complex Mississippian societies in the Southeastern United States at the time of European contact, has been the subject of extended archaeological and ethnohistoric investigation in recent years by a research team led by Charles M. Hudson and David J. Hally (Hally and Langford 1988; Hally et al. 1989; Hudson et al. 1985, 1987). Visited by the De Soto, De Luna, and Pardo expeditions in the middle third of the 16th century, the province of Coosa was a complex chiefdom, a series of linked polities stretching for ca. 400 km along the Coosa and Tennessee River valleys from northeast Alabama through northwest Georgia and into eastern Tennessee. A series of seven 16th-century Mississippian site clusters have been identified in this area by Hally, Langford, and Smith (1989:1) that they argue were "largely independent chiefdoms that were unified, perhaps only briefly, by Coosa, the chiefdom represented by the largest and geographically most central site cluster." The location of these site clusters, their archaeological phase designation, and the Spanish province each probably represents are illustrated in Figure 17. Procedures by which these clusters were recognized archaeologically, including information on survey methods and biases, site location and size, the number and size of associated mounds, each site or center's nearest neighbor, and estimated population for each site within individual clusters, have been published by Hally and his colleagues (Hally and Langford 1988; Hally et al. 1989). Much of the discussion that follows is drawn from these works.

The seven site clusters comprising the Coosa paramount chiefdom each had between four and seven sites larger than 1 ha, with an average of 5.3 large sites per cluster (Hally et al. 1989:8-9; these sites are presumed to have been contemporaneous, since they are identifiable at the phase level). In five of the site clusters for which adequate survey data existed, site size ranged between 1 and 5.6 ha, and averaged ca. 2.8 ha. Using data from excavated sites, Hally and his colleagues calculated the number of possible domestic structures at each site, and used these data in turn to develop population estimates. Individual towns within the clusters were found to have an average of 59 households (range = 21 to 119) and average populations of either 350 (range = 124

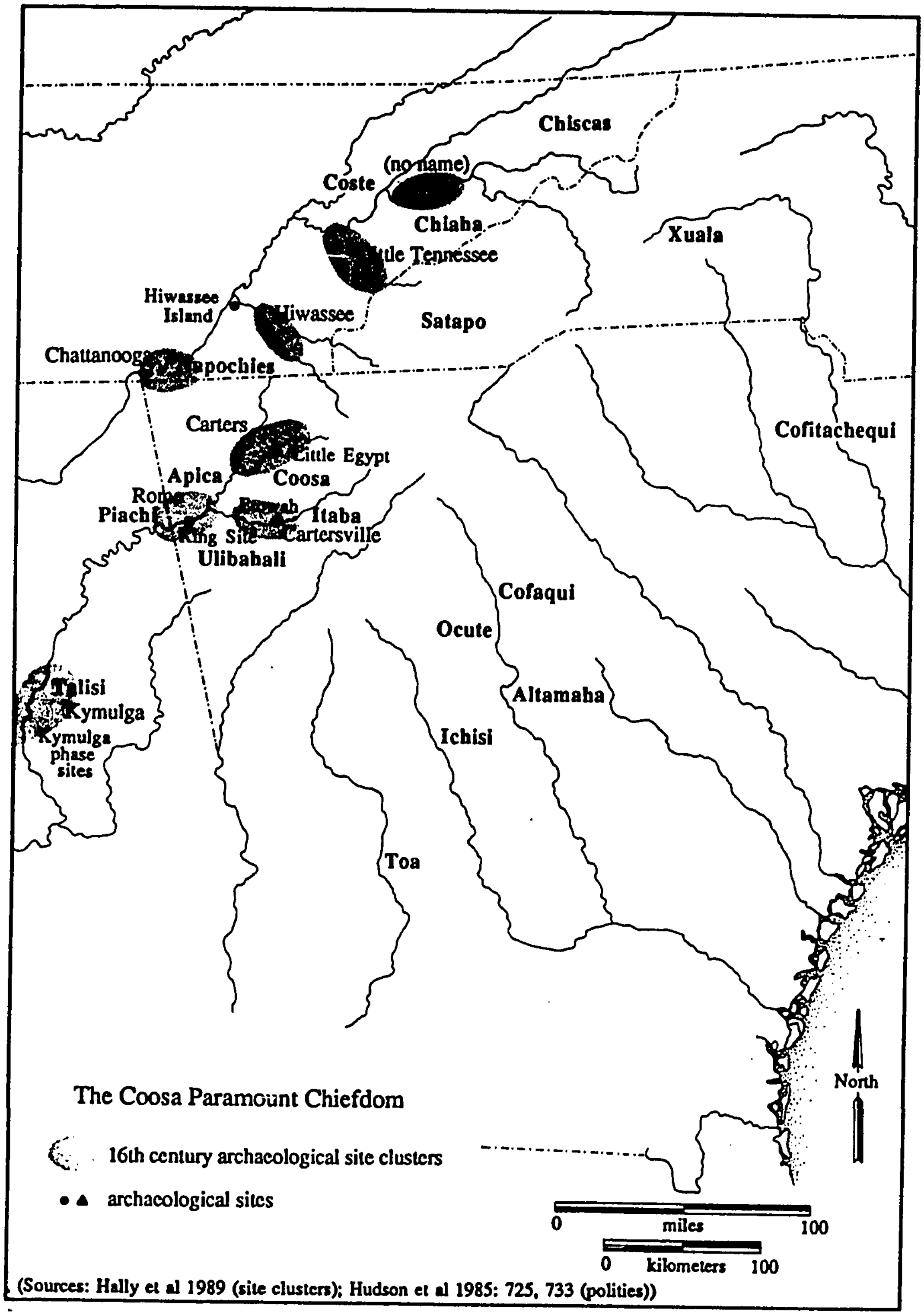


Figure 17. Coosa in Archaeological Perspective: Individual Sites and Centers in the Sixteenth Century Complex Chiefdom.

to 702) or 652 (range = 253 and 1309), depending on whether Naroll (1962) or Cook's (1972) formula for estimating population from dwelling size was used (Hally et al. 1989:9). The total population of the Carter's cluster, the presumed political center of the Coosa paramount chiefdom, was calculated to be either ca. 2850 or 5400 people, while the total population in all seven clusters was either ca. 12,000 or 22,400.

Platform mounds in use in the 16th century, with archaeologically documented construction episodes, are present on sites in four of the seven site clusters, and may have been present in the other three, although the periods of occupation at the mound sites in these clusters remain to be documented (Hally et al. 1989:10). Only in the Carter's cluster is there evidence for more than one mound group occupied simultaneously, however, at the Little Egypt site, which had two or three mounds, and at the Thompson site, which had one mound. The internal political organization of six of the seven site clusters thus appears to have been that of a simple chiefdom, with one central town coordinating activities in a number of outlying communities. The internal political organization of the seventh site cluster, the Carter's cluster, may have been that of a complex chiefdom, with a primary center at Little Egypt and a secondary center at Thompson. Not surprisingly, the Little Egypt site has been identified as the probable central town of Coosa (Hudson et al. 1985:726-727).

The size of the seven site clusters, which Hally and his colleagues determined using "the linear distance between the two most widely separated large sites" in each cluster, ranged between 10.8 and 23.5 km, and averaged 19.5 km (Hally et al. 1989:11). Large sites within these clusters ranged from 0.1 to 13.8 km apart, and averaged 5.5 km apart. The lowest average distance between large sites, 3.3 km, was observed in the Carter's cluster, something that may reflect the high degree of political organization of this polity, and its role in the regional political landscape. The clusters themselves were widely separated from one another, with mound centers an average 49 km apart (range =

29 to 69 km), and the cluster edges, defined in terms of the distance between non-mound sites in neighboring clusters, an average of 33 km apart (range = 16 to 50 km) (Hally et al. 1989:11). Areas between the clusters were unoccupied and presumably served as buffer zones/hunting territories.

Hally and his colleagues (1989:12-13) have interpreted the site clusters as politically more-or-less autonomous chiefdoms, with subsidiary communities under the direct control of an elite administrative hierarchy centered at the mound sites. The size of each cluster was small enough in terms of travel time to permit effective direct control of each community within it from the center, while the number of communities within each cluster, averaging under six, was low enough to preclude elite administrative overload, following scalar stress arguments advanced by Johnson (1978, 1982). The unoccupied buffer zones between these polities, they further argued, may have formed through processes of military competition between the leaders of each polity. Finally, the distance between each cluster was considered too great to permit leaders in one cluster to control activities directly in other nearby or more distant clusters.

How these site clusters were bound together to form the Coosa paramount chiefdom, and the political organization of this entity are less clear. The early accounts indicate that subsidiary polities were drawn under the control of a *cacique grande* at a paramount center through military conquest or its threat, or through a series of presumably defensive alliances (Hally at al. 1989:14-15). Elites at subsidiary polities acknowledged the paramount's position through the periodic submission of tribute, and in all probability received prestige and other goods from the paramount center, as well as support in times of crisis, in return. The De Luna expedition account of the raid on the Napochies by a combined force of Spaniards and Indians from Coosa, to rein in a subsidiary polity seeking autonomy, indicates competition between elites, ultimately leading to the exercise of military force, played a major role in the formation and maintenance of these chiefdoms (Chapter III).

Knowledge about the size and importance of Coosa comes almost exclusively from early Spanish sources. Archaeological evidence for the existence of the Coosa paramount chiefdom is minimal, to the point that Hally and his colleagues (1989:18) describe the polity as "essentially invisible." The Little Egypt site, assumed to be the central town of the complex chiefdom, is not particularly distinctive. While three mounds were present and apparently in use, more than at any other site in the chiefdom, these mounds were much smaller than those present at Citico, Etowah, and Toqua in the Chattanooga, Cartersville, and Little Tennessee site clusters, respectively. The impressive mounds at these other sites, however, had been built much earlier, and were no longer in use when Coosa was at its height.

Ceramics, an artifact category widely used to define the existence and extent of phases in the late prehistoric Southeast (e.g., Phillips 1970; Williams and Brain 1983), provide no clue to the extent of Coosa. The province boundaries not only crosscut two major ceramic traditions, the Dallas tradition of eastern Tennessee and the Lamar tradition of Georgia, but the pottery within each site cluster "for which ceramic counts are available, furthermore, can be distinguished at the phase level" (Hally et al. 1989:17). These phase assemblages would almost certainly be equated with distinct societies if ceramic analysis formed the primary method used to infer political relationships or ethnicity.

The only distinctive artifact found to be coextensive and contemporaneous with the historical province of Coosa to date, in fact, is the Citico style gorget (Hally et al. 1989:17-18). Found almost exclusively with adult female and adolescent interments, these gorgets have been interpreted as some kind of badge of office or affiliation "symbolically associated with some institutional order or status group within the chiefdom of Coosa" (Hudson et al. 1985:732-733). The association with females may point to the existence of a female leadership category within the chiefdom. The artifact style may additionally or alternatively document the geographic extent of marital alliance networks binding the chiefdom together.

Hally and his colleagues concluded by arguing that since there was little archaeological evidence for strong political ties binding polities into the paramount chiefdom of Coosa, that Southeastern paramount chiefdoms in general were probably fragile and short-lived. Relationships between paramount and subordinate elites are thought to have been primarily personal and symbolic in nature, and characterized by few overt demands for tribute or services (Hally et al. 1989:18). The rapid decline in the power of Coosa in the 20 years between the De Soto and De Luna expeditions, and the apparent resurgence in power within the chiefdom in the half dozen years between the Luna and Pardo expeditions, indicates how quickly dramatic organizational change may occur in these societies. The case of Coosa is unique, however, in that European contact unquestionably precipitated some of the observed changes.

While the recent work with Coosa indicates that Mississippian paramount chiefdoms may be very difficult to recognize archaeologically, it also illustrates a number of methods by which this may be accomplished. Extensive regional survey followed by locational analyses, for example, may permit the resolution of site clusters that represent individual chiefdoms. The analysis of settlement and administrative structures within site clusters may indicate which of them, if any, may have been the center of a larger, paramount chiefdom. The Carter's site cluster had the only two-level administrative hierarchy evident in the seven clusters comprising the Coosa paramount chiefdom, and had the largest and most closely spaced settlements, further evidence of a high degree of internal political organization. Analysis of the material assemblage within and between site clusters over a region may reveal distinctive categories of artifacts shared between large numbers of sites, something that in turn may indicate the existence and extent of alliance relationships. Comparative mortuary analyses may indicate status differences and hence political relationships between elites at differing centers. Finally, paleopathological analyses may yield similar results, by documenting relationships between political organization and subsistence stress. As noted in an earlier section, there is an appreciable body of evidence indicating that the health of the region's Mississippian populations was linked to the nature and complexity of the political system to which they were affiliated, with populations in more complex chiefdoms typically exhibiting much better health than those in simple chiefdoms.

Political Change in the Late Prehistoric Southeast: Phase Distribution Maps

Prehistoric archaeological phases in the Eastern United States at four times during the Mississippian era, at ca. A.D. 900 to 1100, A.D. 1250 to 1300, A.D. 1400 to 1450, and A.D. 1540, are illustrated in Figures 18 through 21. Detailed 17 x 24" versions of these maps with text identifying each phase have been published separately (Anderson n.d.a). These maps were produced in an attempt to delimit evidence for large-scale settlement change, specifically the expansion and collapse of complex societies, the abandonment of certain areas, and the formation of buffer zones across the region. Sets of four 1:2,500,000 maps of relevant portions of the Eastern Woodlands were mailed to forty researchers, selected in an effort to cover the region, with a description of the goals of the project and a request that they draw in late prehistoric phase or site distributions in their area of expertise at ca. A.D. 900 to 1100, A.D. 1250 to 1300, A.D. 1400 to 1450, and A.D. 1540, and provide names for the phases, if these were available. Information on both chiefdom and non-chiefdom societies was requested, and, if core areas were known, that is, areas of high site density, or near major centers, where most of the population resided, these were to be shaded.

The four periods were chosen to examine phase distributions at four key times during the late prehistoric era, encompassing: (1) the emergence and early spread of the

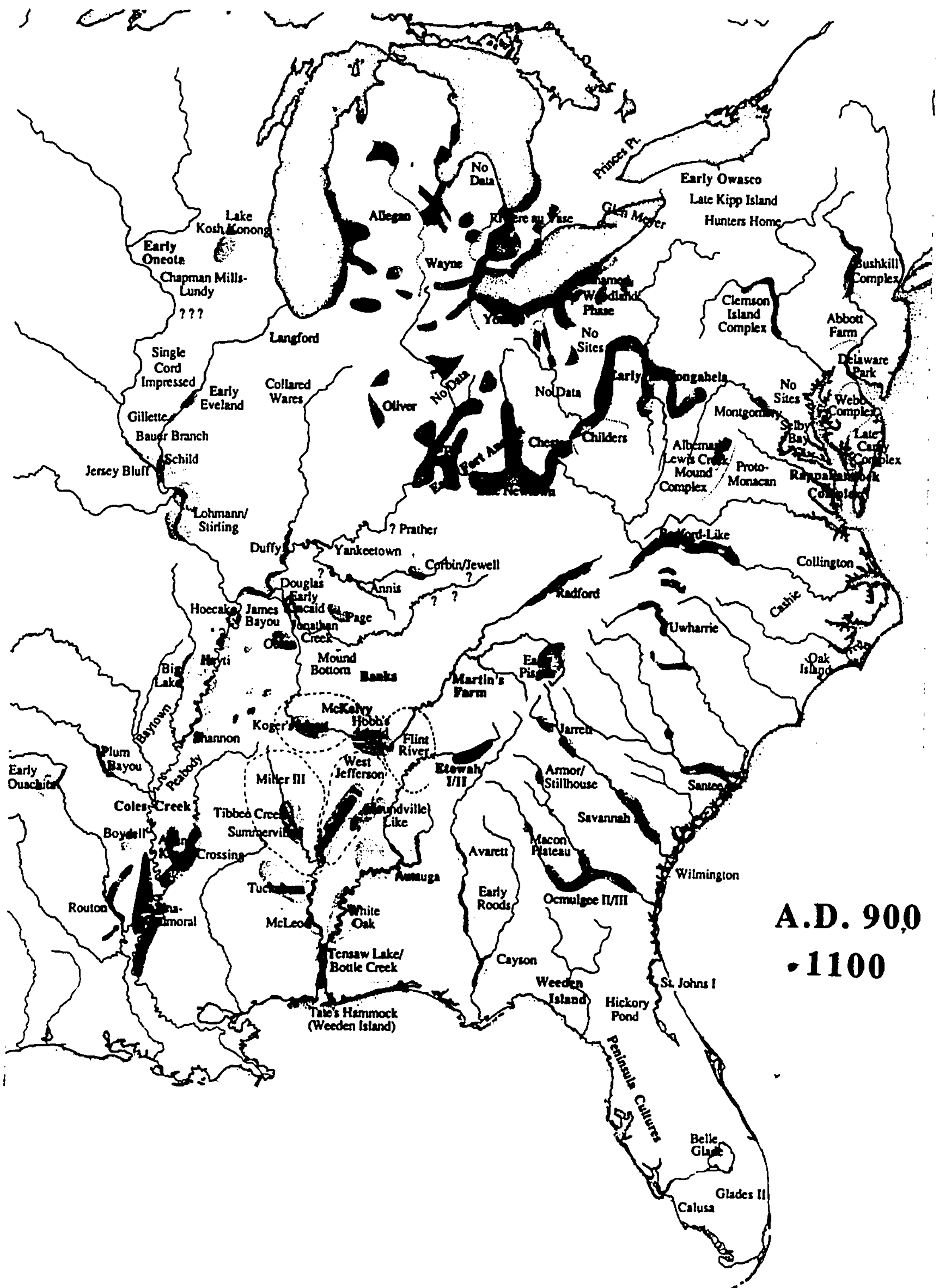


Figure 18. Late Prehistoric Phases in the Eastern Woodlands: A.D. 900 to 1100.

Figure 19. Late Prehistoric Phases in the Eastern Woodlands: A.D. 1250 to 1300.

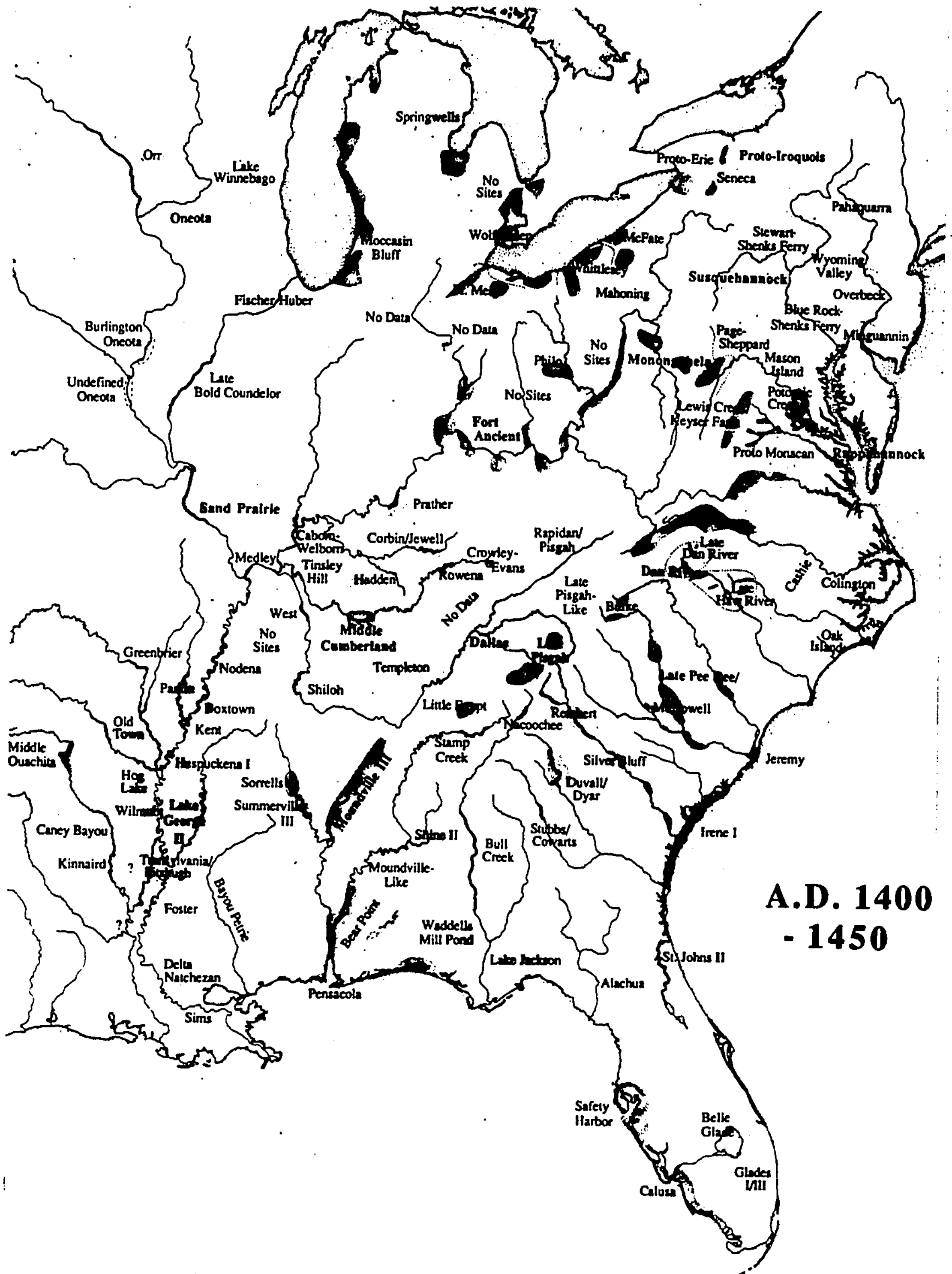


Figure 20. Late Prehistoric Phases in the Eastern Woodlands: A.D. 1400 to 1450.

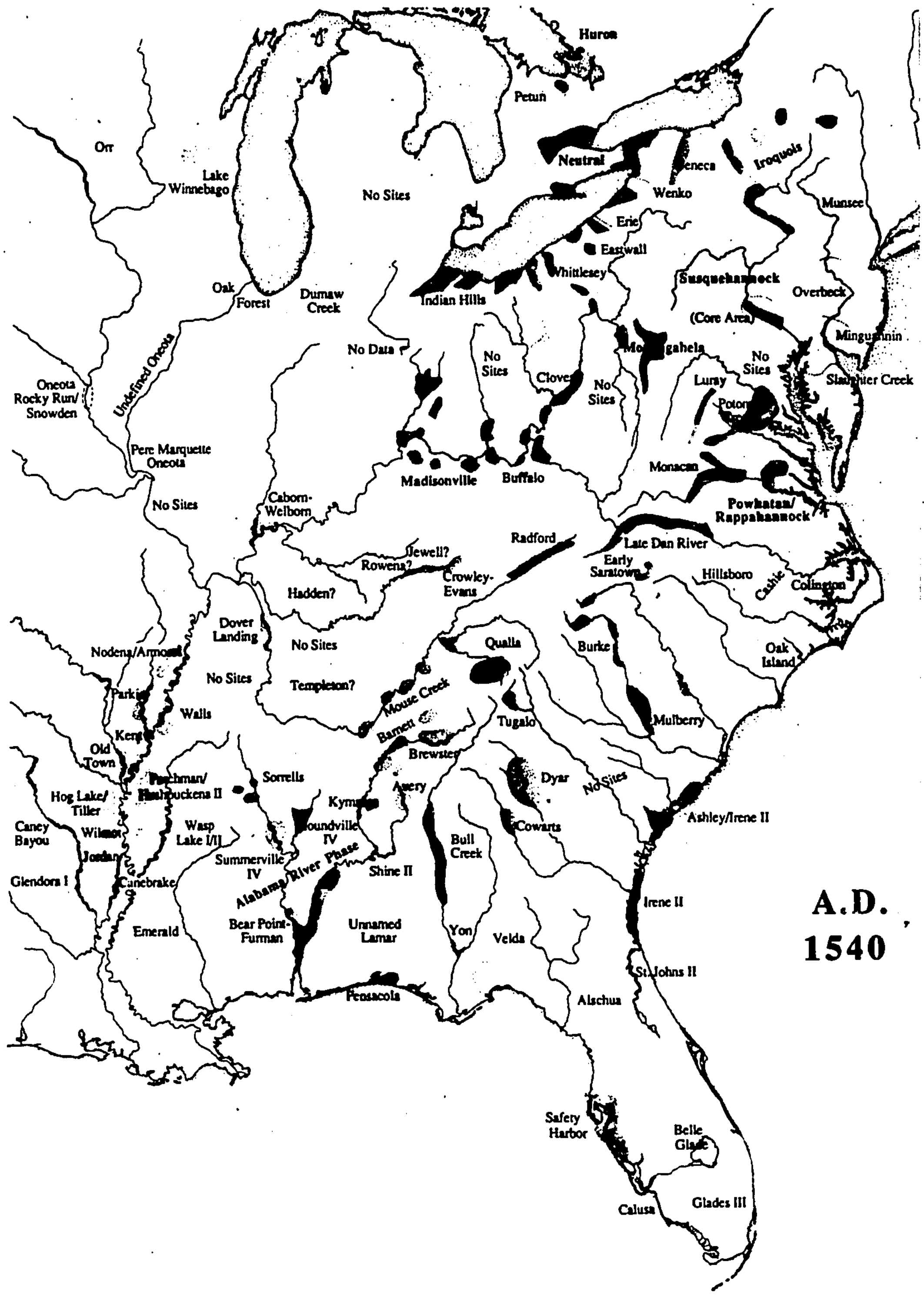


Figure 21. Late Prehistoric Phases in the Eastern Woodlands: A.D. 1540.

Mississippian adaptation, (2) the height of the SCC (Southeastern Ceremonial Complex, see Galloway 1989) interregional exchange and interaction network, (3) the marked settlement changes associated with the onset of the Little Ice Age, and (4) initial European contact in the interior by the De Soto entrada. In an unusually favorable response, 35 of the 40 archaeologists contacted returned completed sets of maps, which were then used to compile draft copies of the maps illustrated in Figures 18-21. These were returned to all respondents, and additionally a poster session using the four draft maps was displayed at the 1989 meeting of the Southeastern Archaeological Conference in Tampa, with instructions on how interested parties might contribute to the project. Ten of the original respondents and twelve new respondents made suggestions on the contents of the draft maps, and these suggestions were incorporated into the final maps.

The mapping project was initiated to examine chiefly cycling, and specifically to see if the abandonment of the central and lower Savannah River Valley after ca. A.D. 1450 was all that atypical, and perhaps made more sense, when viewed from a larger temporal and spatial framework. Also the study was initiated from a conviction that since cycling — the emergence and collapse of complex chiefdoms — is a process that operates at a regional level, a comparable level of analysis must be brought to bear in its investigation. That is, that the histories of individual Mississippian chiefdoms can only be understood through an awareness of regional political geography. DePratter, in his ethnohistoric overview of the Southeastern chiefdoms, which was a major inspiration for the present study, summarized the directions such work must take, and the reasons for it:

> Once the chiefdoms of the historic period are identified and described, the next step will be to investigate more fully those chiefdoms that existed prior to European contact — the late prehistoric Mississippian cultures. ...Once the 16th century ethnohistoric situation is understood, then it should be a simple matter to work in time to map the distribution of political units in the prehistoric, archaeologically known societies. ...a new approach in both archaeological and ethnohistorical studies is required... [that] involves looking at the entire region in question and viewing the culture history of that region as interrelated instead of site specific [DePratter 1983:2, 9, 18].

The mapping project undertaken in conjunction with the present study was an attempt to move in this direction. The maps provide, in one place, information on the occurrence of late prehistoric phases from over a large area of Eastern North America. Taken solely as heuristic devices they should be of interest and value, since they offer researchers a previously unavailable perspective on late prehistoric occupations.

The utility and accuracy of the maps are constrained by a number of factors. First, when phase distribution maps were submitted by different investigators working in the same area, they were rarely in agreement. Minor to not-so-minor differences in the geographic extent, temporal occurrence, or names of phases were common between investigators. These discrepancies were resolved by the author, using average values where possible and best judgement otherwise. The maps thus represent something of a compromise of viewpoints for most areas. Second, most investigators did not explicitly indicate areas where no sites were known. In many cases, therefore, unless it is explicitly indicated on the maps, it is not possible to determine unoccupied areas. Finally, for some areas, notably central Kentucky, northern Indiana and Illinois, Wisconsin, and western Louisiana, no response was obtained from local authorities. In these cases the phases that are present represent, for the most part, the judgment of the compiler. Accepting these problems, there is still much the maps can tell us.

One thing that is evident is that societies over the region were not following a roughly contemporaneous pattern of emergence, expansion, and decline. The phase distributions indicate that individual centers and polities rose and fell at different rates. That is, some areas were occupied throughout the late prehistoric era, while other areas were intermittently occupied and abandoned. Societies appeared in previously unoccupied areas, and some areas that were formerly occupied became depopulated. Areas lacking sites and hence that were presumably unoccupied appear to have been common between many late prehistoric societies in the region, distributions that may represent the existence of intentionally maintained buffer zones.

The abandonment of large areas appears to have been a fairly common occurrence during the Mississippian period. Large segments of the Mississippi, Illinois, Savannah, and Tennessee River basins that were occupied at A.D. 900 to 1100 or A.D. 1250 to 1300, for example, were abandoned or underwent marked depopulation after ca. A.D. 1400 (Figures 20, 21). Settlement nucleation has been noted in a number of areas in the Eastern Woodlands during the late Mississppian period (Morse and Morse 1983:271), something that has been linked to broad patterns of environmental degradation, increasing regional population levels, and warfare. Since settlement nucleation appears to have occurred very quickly over a large area, it suggests that change proceeded in a chain reaction-like process, with events in one area producing impacts over much larger surrounding areas.

More accurate delimitation of prehistoric phases, and the eventual resolution of prehistoric polities, will require an extensive, coordinated research effort. Examination must ultimately be directed to the resolution of site-clusters and administrative hierarchies, as has been attempted with the Coosa chiefdom (Hally et al. 1989). The present study was, for the most part, impressionistic, relying on researchers ideas about where prehistoric sites and phases were located in the landscape. Data supporting phase assignments and distributions vary widely, however, and in many cases are unpublished. As such, while the maps provide useful information about where prehistoric people were living, they tell us nothing, by themself, about the organizational hierarchies that were present (i.e., whether simple as opposed to complex chiefdoms were present). Eventually, maps showing every site containing temporally sensitive diagnostics need to be produced, much like the distributional maps of 16th-century sites produced as part of the De Soto Commission work (e.g., Knight 1988). These will be useful in delimiting possible polities and buffer zones. Similar maps showing the location of the sites within these clusters that contain mounds (including data on their size and number), and of sites by size classes, will be needed if we are to explore the organizational and administrative structures that were present. As archaeological site file data across the region are computerized, analyses of this kind will be facilitated.

Conclusions

In these first four chapters I have attempted to show how ethnography, ethnohistory, and archaeology can aid in the archaeological examination of political and organizational change in chiefdom societies, specifically the emergence and decline of complex chiefdoms against a regional backdrop of simple chiefdoms. The focus on ethnographic examples of chiefdoms from around the world and the ethnohistoric documentation of the chiefdoms in the archaeological study area follows from the belief that understanding how living cultural systems operated is critical to effectively designing research directed to understanding past cultural systems. The archaeological analysis of political and organizational change in chiefdom society, it has been seen, can be addressed using a number of different but complementary kinds of evidence, including data about settlement patterning, mortuary behavior, individual health, regional exchange patterns, and local and regional resource structure (DePratter 1983:205-206).

In the next three chapters these approaches are used to examine archaeological evidence for cycling in one part of the late prehistoric Southeast in considerable detail. Attention is directed to a series of Mississippian chiefdoms that were present in the Savannah River Valley during the period from ca. A.D. 1000 to 1600. A goal of this research is the linking of observations about the dynamics of living cultural systems — in this case processes of organizational change in chiefdoms — to the evidence in the archaeological record. This activity, a major challenge before archaeologists, has been called middle range theory (Binford 1981:25-30). The extent to which the archaeological record can tell us about past cultural systems is directly tied to how well we advance logical, well-grounded, and carefully constructed arguments showing how certain kinds of human behavior can be expected to leave behind certain kinds of archaeological signatures. If our arguments are plausible, and our conclusions supported by multiple lines of evidence, we can have reason to believe them.

CHAPTER V.

EVIDENCE FOR MISSISSIPPIAN OCCUPATION IN THE SAVANNAH RIVER VALLEY

Introduction

In this chapter archaeological evidence documenting the Mississippian occupation of the Savannah River valley is summarized, and an outline of the Mississippian cultural and chronological sequence as it is presently understood in various parts of the basin is presented. The Mississippian archaeological record from the Savannah River basin has attracted considerable attention, and has been documented in a large number of papers and monographs. Major findings of this research are presented, together with references to primary reports of investigation and extant collections. To facilitate a better understanding of Mississippian mound centers in the basin, most of which were badly damaged or destroyed long ago, accounts of these sites dating from the 18th and 19th centuries are included in a special annotated appendix (Appendix A). For some sites, unfortunately, these descriptions are the only information that has survived. At the two largest mound groups in the basin, at Mason's Plantation and Rembert, for example, most architectural features had been plowed, looted, or washed away by the time professional archaeological investigation began. Taken together, this information provides the necessary background for the basin-wide analysis of chiefly cycling presented in Chapter VI and the detailed examination of the subject, employing the results of recent Mississippian research at specific sites, given in Chapter VII. To provide a chronological reference for the discussion that follows, the cultural sequence for the later prehistoric period in various parts of the basin is summarized in Figure 22.

Mississippian Archaeology in the Savannah River Valley

It is during the Mississippian period that sedentary village life, agricultural food production, and regionally integrated and hierarchically organized social, political, and ceremonial systems emerged in the Savannah River Valley. Mississippian sites are widespread, and are recognized by the presence of one or more of the following attributes: complicated stamped or burnished plain pottery, small triangular arrow points, intensive agriculture, and evidence for mound ceremonialism, specifically the construction of platform/temple mounds. A history of Mississippian research in the basin, detailing how sites of this period have come to be recognized, and where in the valley they have been found, is briefly recounted here. This summary complements overviews that have appeared elsewhere (Anderson et al. 1986; Anderson 1989; Hally and Rudolph 1986). The location of the major Mississippian sites in the vicinity of the Savannah River Valley that are discussed in this chapter are illustrated in Figure 23.

The earliest records of Mississippian sites in the Savannah River Valley date from the colonial period. During the late 17th century through much of the 18th century a number of Lower Cherokee towns were present in the upper reaches of the drainage. These towns were visited by traders, travelers, and military parties operating primarily out of Charleston and Savannah, and some descriptions from these visits included references to ancient monuments. The most detailed accounts from this period are by the naturalist William Bartram (1791:313-315, 324-326, 332; see Appendix A), who traveled along the Savannah River in the spring of 1776 and described Indian mounds and other earthworks at Silver Bluff, Rembert, and Keowee. Bartram's description of the Rembert mound group is particularly important, since it is quite detailed, and since the site had

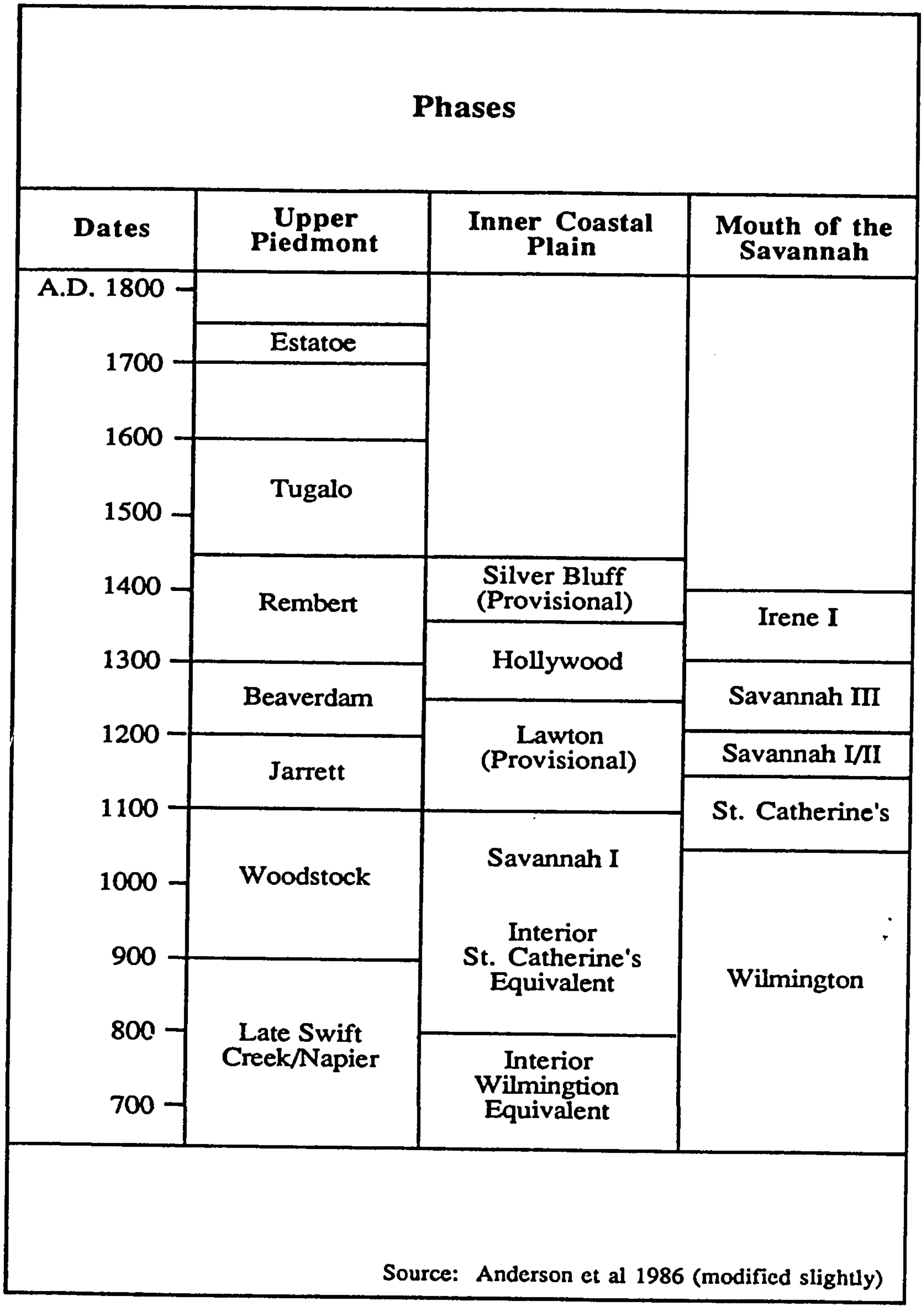


Figure 22. The Later Prehistoric Cultural Sequence in the Savannah River Valley.

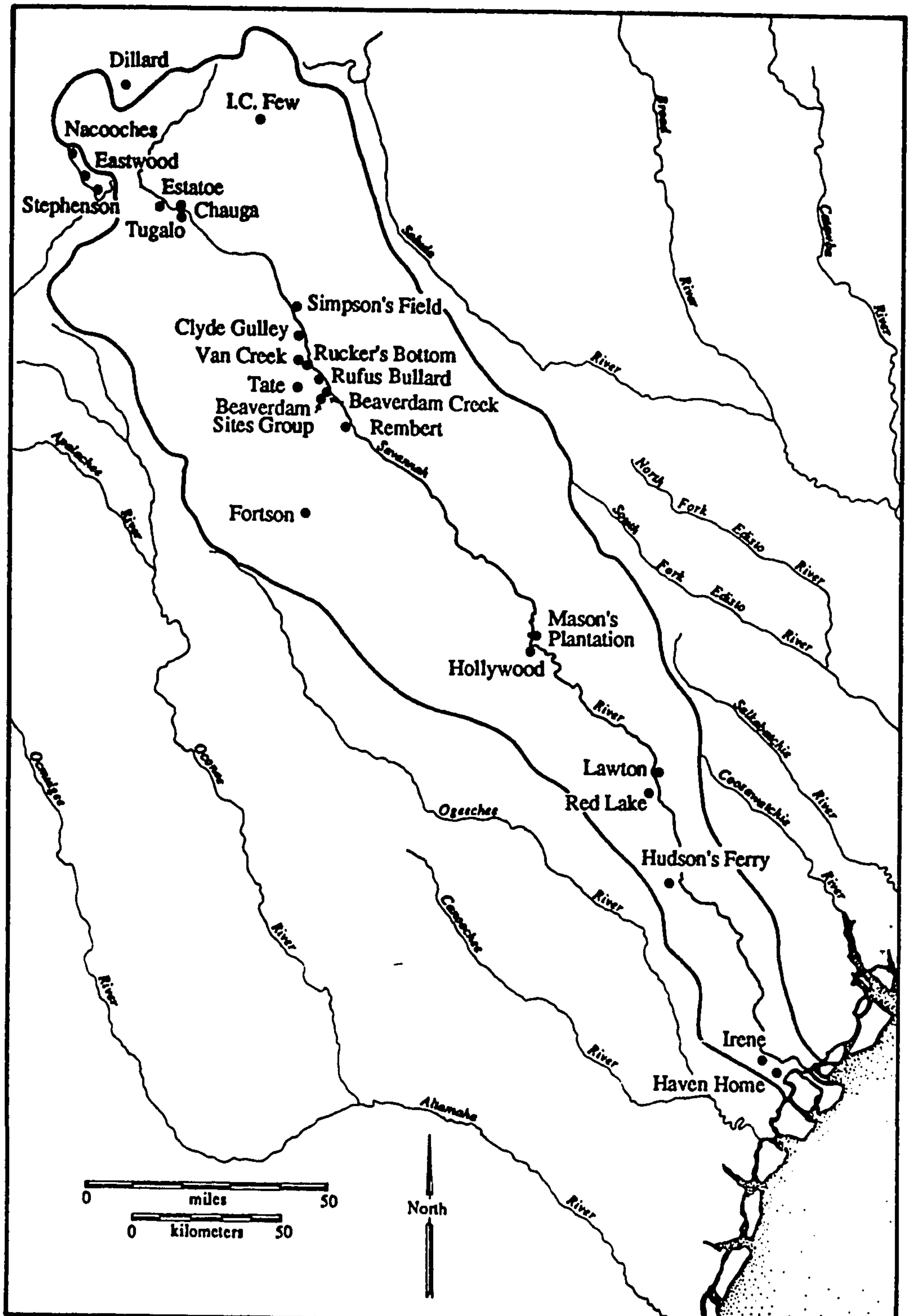


Figure 23. Major Mississippian Sites in the Savannah River Basin.

suffered considerable erosion by the time it was visited again in the late 19th century. While a number of other Indian groups were temporarily in residence along the lower course of the Savannah during the colonial period (DePratter n.d.), many relocated there by the colonial authorities to provide a buffer for the Carolina colony, descriptions of these groups and their settlements have not yielded data about prehistoric sites.

Antiquarian interest in the prehistoric monuments of the Savannah River Valley dates to the 19th century. White's (1848:230) *Statistics of Georgia* contains a brief description of the Rembert Mound Group, a site that was later visited and described in detail by Charles C. Jones (1878:283-286; Appendix A). Jones, a resident of Augusta, maintained a lifelong interest in the native antiquities of the Georgia area, contributing descriptions of his finding to the Smithsonian and publishing two major books on the subject, *Monumental Remains of Georgia* and *Antiquities of the Southern Indians, Particularly of the Georgia Tribes* (Jones 1861, 1873, 1878, 1880). His highly detailed, romantically worded description of the mounds on Mason's Plantation near Silver Bluff (Jones 1873:148-157; Appendix A) provides the only description of this important site, which had washed away by the end of the 19th century. There is little doubt that his treatment of it helped entrench the long-held belief, only recently overturned, that the Silver Bluff area was the location of the town of Cofitachequi visited by De Soto in 1540.

Excavations along the Savannah were conducted at several sites in the late 19th century, under the direction of archaeologists from the Smithsonian Institution, and by Clarence B. Moore, a wealthy industrialist. From 1881 to 1891 the Mound Division of the Bureau of Ethnology explored over 2000 mounds in the eastern United States (Powell 1894: xlv). Of this figure, three mound groups were examined along the Savannah River, at Hollywood, Rembert, and Tugalo. The work at these sites was described in the classic summary *Report of the Mound Explorations of the Bureau of Ethnology*, by Cyrus Thomas (1894:314-326; Appendix A). The work at Hollywood produced a rich

Southeastern Ceremonial Complex artifact assemblage while the investigations at Rembert and Tugalo, although less successful in terms of artifact recovery, provided valuable descriptive information about these sites. The results of these and all subsequent excavations are summarized in the site discussions later in this chapter. The only other formal excavations conducted along the Savannah River during the 19th century were by Clarence B Moore, who conducted limited testing at a number of sites.

During the winter of 1897-1898 Moore, "in a rapid steamer of light draught" (Moore 1898a:167), examined 13 mound sites at six locations along the Savannah. Aside from limited testing at the Lawton Mound group in Allendale County, South Carolina, Moore confined his work to the Georgia side of the river, working at the Irene Mound near Savannah and at several low sand burial mounds in Screven and Burke counties. His explorations extended from the coast to the Fall Line, and focused on what are now known to be late prehistoric habitation and burial sites. The results of this work were published, extensively illustrated, in the *Journal of the Philadelphia Academy of Natural Sciences* (Moore 1898a, 1898b). Although his descriptions reports were brief, they set a high standard for the period, and are valuable references today, since many of these sites no longer exist.

The mounds that were examined by Moore were found to be either natural clay rises in the swamp with thin layers of habitation debris, or low sand burial mounds. Moore had little luck at Lawton and at the other Savannah River sites he examined, however, something that prompted him to note: "The few mounds found back from the river were small... therefore, we did not pursue usual custom, totally to demolish each mound discovered, as we had done, as a rule, in Florida and on the Georgia coast" (Moore 1898a:167). Given this excavation strategy, it is probably fortunate that Moore's investigations were by his standards unsuccessful. Moore also visited the Stony Bluff quarry (9Bk5), one of several major chert outcrops that occur in the central Coastal Plain portion of the drainage. His observation that the site had been heavily collected by local residents documents a long history of artifact collecting in the basin (Moore 1898a:172). Moore found few rich sites, by his standards and, commenting that "the Savannah River... did not offer a promising field" (Moore 1898a:167), soon abandoned his effort.

Limited archaeological investigations were undertaken in the vicinity of the upper Savannah River during the early part of the 20th century. The most extensive work at a Mississippian site was that conducted at the Nacoochee Mound near the headwaters of the Chattahoochee River in White County, Georgia (Heye et al. 1918). Etowah and Middle/Late Lamar period occupations were documented, and the report that was produced was of exceptional detail for the time, containing numerous artifact illustrations. In 1917 local citizens opened a shaft into the top of the Lindsey Mound near Greenville, South Carolina, in the upper Saluda River basin, documenting superimposed occupation floors or construction episodes (Bragg 1918). The site has since been tentatively identified as Pisgah (Dickens 1976:92), although its precise age and extent remain unknown. No further extensive archaeological investigations were conducted in the upper Savannah River until the middle of the 20th century, when reservoir construction was initiated.

In 1928 and 1929 Waring (1968b) conducted excavations at the Savannah II period Haven Home burial mound near Savannah. Waring, a physician from Savannah, was a lifelong avocational archaeologist whose writings, posthumously collected and edited in the late 1960s by Stephen Williams (1968), provide the best overview produced to date about prehistoric occupations along the lower Savannah River. In 1929 the Peabody Museum of Harvard University conducted excavations at the Late Archaic Stalling's Island shell midden site near Augusta (Claflin 1931). The work was conducted by the Cosgroves, who are now well known for their work in the Southwest. In addition to the well-known Late Archaic fiber tempered ceramic complex, minor Mississippian components were also found at Stallings Island, including two Savannah culture urn burials.

During the late 1930s and early 1940s extensive archaeological investigations were conducted in the states of North Carolina and Georgia, mostly as a part of federally funded Works Progress Administration relief activity. This work has had a profound and continuing effect on our understanding of the late prehistoric sequence and occupation of the Savannah River Valley. Cultural sequences were established in three areas, in northern Georgia, at the mouth of the Savannah, and in central North Carolina, that to this day guide the dating and interpretation of prehistoric archaeological sites in these areas. Of particular importance for the establishment of a Mississippian cultural sequence was the WPA-sponsored survey activity in north Georgia and a major program of survey and excavation undertaken at the mouth of the Savannah, in Chatham County, Georgia. The north Georgia work was synthesized in Robert Wauchope's (1966) volume *Archaeological Survey in Northern Georgia*. Investigations at the mouth of the Savannah have never been fully reported, although major findings were recounted in *The Waring Papers* (Williams 1968), and, most recently, in an overview of the survey work by DePratter (1990). Implications of this research are summarized at the end of this chapter, in the discussion of the Mississippian cultural sequence in the Savannah River Valley.

In 1948, the area of the Clarks Hill (now Strom Thurmond) Reservoir above Augusta on the Savannah River was surveyed by Caldwell and Miller (Miller 1974). A total of 128 sites were located during preliminary survey work, and limited testing occurred at four of them, at Rembert Mounds, Lake Spring, Fort Charlotte, and 38Mc6 (Caldwell 1953, 1974b; Miller 1949, 1950, 1974). The only excavations undertaken at a Mississippian site were a series of test pits were excavated at the Rembert Mound Group on the west side of the river in Georgia (Caldwell 1953). The ceramic collections from the testing at Rembert were used by Hally (Anderson et al. 1986:41-42; Rudolph and

Hally 1985:456-459) to help define the Rembert phase, a late prehistoric (ca. A.D. 1350 to 1450) Mississippian occupation along the upper Savannah and immediately adjacent portions of South Carolina and Georgia. To the north of Clarks Hill Lake the area of the Hartwell Reservoir was surveyed by Caldwell in 1953 (Caldwell 1974c), and three mound sites were examined over the next decade, at Chauga, Tugalo, and Estatoe (Caldwell 1956; Kelly and De Baillou 1960; Kelly and Neitzel 1959, 1961).

From 1966 to 1968 a program of survey and excavation was undertaken in the proposed floodpool of the Keowee-Toxaway Reservoir in Oconee and Pickens County, South Carolina, in the extreme upper reaches of the Savannah River watershed. Excavations were conducted at a number of prehistoric and historic sites, including I. C. Few, Wild Cherry, Rock Turtle, Toxaway, and Fort Prince George. Late Woodland through protohistoric Connestee, Pisgah, and Qualla components were examined, although to date only a general summary of the investigations has appeared (Beuschel 1976). A late prehistoric cultural sequence comparable to that noted in the Appalachian summit to the north was identified, characterized by Connestee, Pisgah, and later Lamar Qualla assemblages. Aside for detailed reports on the late prehistoric components at the Chauga, Estatoe, I. C. Few, and Rembert mound sites (Caldwell 1953; Grange 1972; Kelly and De Baillou 1960; Kelly and Neitzel 1961), however, Mississippian period archaeological work done during the construction of the Clarks Hill, Hartwell, and Keowee-Toxaway reservoirs was minimal in both scope and reporting.

Along the lower Savannah River later prehistoric components were identified in Allendale County, South Carolina, by James B. Stoltman during his work on Groton Plantation in 1964. Stoltman (1974:30-31, 91) noted the general contemporaneity of Etowah-like and Savannah Complicated Stamped ceramics along the drainage, something Hally has subsequently formalized as a primary characteristic of the Early Mississippian Beaverdam phase (ca. A.D. 1200 to 1300) in the central Piedmont portion of the drainage

(Anderson et al. 1986:38-40; Rudolph and Hally 1985:448, 462-470). Stoltman (1974:241-243) also noted that Mississippian components were concentrated near the main channel, which he interpreted as the result of a switch from upland horticulture, presumably practiced by local Woodland populations, to intensive floodplain agriculture. This observation, although in need of more evaluation and testing, marked the first serious attempt to explore Mississippian settlement and subsistence systems in the Savannah River area.

Two Mississippian mound sites in the Broad River basin in central South Carolina, McCollum and Blair, were examined in the early 1970s. In 1971 Thomas M. Ryan opened over 45 sq. m in village midden deposits at the McCollum Mound in Chester County. This site, located along the Broad River, had been tested by Edward Palmer of the Bureau of Ethnology in 1884. Ryan (1971a:96; 1971b:106) briefly reported on the presence of Pee Dee, Savannah, and Pisgah-like ceramics at the site, and the existence of extensive, well-preserved occupational features. In 1972 George Teague (1979) conducted testing at the Blair Mound in Fairfield County, also along the Broad River, where both Pee Dee and Pisgah-like remains were found. A detailed excavation report was produced documenting the investigations (Teagure 1979). Both mound centers appear to have been abandoned at the same time as many of the sites in the Savannah River Valley (DePratter 1989).

In 1979 Stanley South (1979, 1980) began the first of several seasons of excavations at the site of Santa Elena on Parris Island. This research, focusing on the 1565 to 1587 Spanish settlement, has generated valuable information on Spanish-Indian relations; the site assemblages have additionally provided tightly dated examples of late 16th century Indian material culture (South 1982:60-62) that are invaluable for the construction of local sequences. The ceramics and other native American materials are currently undergoing examination by Chester DePratter. Under the direction of A.

Robert Parler and James L. Michie, extensive excavations were conducted for several field seasons in the early 1980s at the Allan Mack site along a tributary of the Edisto River near North, South Carolina (Parler and Lee 1981). The Mississippian components at this site, consisting of numerous stone tools but comparatively few ceramics, may reflect the repeated use of the location as a hunting camp by groups based elsewhere in the region, possibly along the Santee or Savannah River.

Very little work has been done on early historic native American occupations along the Savannah River. Historical summaries have appeared, however, and the general locations of a number of towns occupied after 1670 have been delimited (DePratter n.d.). The only report on a post-contact Indian site in the lower part of the basin appeared in 1948, when Caldwell described a number of artifacts found in association with burials at the early Creek town of Palachacolas, located on the Savannah River in Hampton County, South Carolina. The site, which had been abandoned during the Yamassee War of 1715, produced glass trade beads, kaolin pipe fragments, European ceramics, and other historic artifacts. These were intermingled with Indian shell beads and Ocmulgee and Kasita-like pottery that Caldwell (1948; 1952:321) equated with late protohistoric assemblages in central Georgia. A number of 18th century Lower Cherokee mound and village sites have been examined in the upper reaches of the basin, including work conducted in the 1950s at Chauga, Tugalo, and Estatoe mound sites (described below), and recent excavations in village areas at Tomassee (Smith et al. 1988), and Chatooga (Schroedl and Riggs 1989).

A tremendous amount of archaeological survey and excavation has occurred in the Savannah River basin in recent years, much of it the result of cultural resource management projects. In the Coastal Plain intensive survey and testing projects have been conducted on both sides of the river, including in the Ebenezer Creek watershed in Effingham and Screven counties, Georgia (Fish 1976); in the Savannah National Wildlife River in Jasper County, South Carolina (Marrinan 1979); near the mouth of Brier Creek in Burke County, Georgia (Elliott and O'Steen 1987); and on the Department of Energy's Savannah River Plant Site in Aiken and Barnwell counties, South Carolina (Sassaman et al. 1989), to name some of the largest projects. Near the Fall Line intensive survey projects have taken place on the Fort Gordon Military Reservation in the interriverine uplands and in the floodplain near Augusta (Bowen 1979; Cable et al. 1978a; Campbell et al. 1981; Elliott and Doyon 1981; Ferguson and Widmer 1976). In addition to reservoir work, survey in the districts of the Sumter and Chattahoochee National Forests located along the upper Savannah River has resulted in the discovery of large numbers of sites in recent years (Anderson et al n.d.; Wynn 1982). In the interriverine Piedmont extensive surveys have been conducted along highway and powerline corridors (e.g., Cable et al. 1978b; Goodyear et al. 1979; House and Ballenger), and limited excavations have occurred at a number of sites (e.g., Gresham and Wood 1986; Ledbetter 1988; Wood and Gresham 1982).

The recent CRM projects have complemented research programs conducted in the drainage over the same interval, such as Ferguson's 1971 (n.d.) survey for Mississippian sites, Stoltman's (1974) work on Groton Plantation, Goodyear and Charles' (1984) surveys of the Allendale chert quarries, and Brooks' (Brooks et al. 1986) geoarchaeological analyses documenting changing channel morphology. Two major, long-term archaeological research programs that have been initiated in the basin in recent years include the work in the Richard B. Russell Reservoir and the ongoing program on the Department of Energy's Savannah River Site (SRS) in Aiken and Barnwell counties, South Carolina. The Russell Reservoir project brought together researchers from throughout the region for a comparatively brief but intense period in the late 1970s and early 1980s. The project triggered an impressive body of research, the results of which have recently been synthesized (Anderson and Joseph 1988). On the SRS, in contrast, a small team of investigators have been conducting an intensive program of archaeological survey, excavation, and analysis for almost 15 years (Hanson et al. 1978, 1981; Sassaman et al. 1989). Excavations have been conducted at a number of stratified sites on the SRS, yielding a reasonably detailed picture of the cultural sequence in this part of the drainage (Anderson 1987a; Brooks and Hanson 1987; Hanson and DePratter 1985; Sassaman 1989; Sassaman and Anderson 1989). All of this work, and the results of numerous smaller survey projects, has resulted in the discovery of large numbers of sites in the basin.

Mississippian Survey Coverage in the Savannah River Valley

Information about archaeological investigations in the Savannah River Valley was obtained from the manuscript and site files maintained at the Laboratory of Archaeology at the University of Georgia and at the South Carolina Institute of Archaeology and Anthropology, the primary repositories for report and site data in Georgia and South Carolina. As of December 1989 over 100 major archaeological survey projects had been conducted in the Savannah River basin. Table 3 lists these projects, and provides data about the intensity of survey coverage, area examined, total number of sites found, number of prehistoric sites recorded, number of Mississippian components on these sites, and primary bibliographic references. The locations of these projects, cross referenced with the data in Table 3, are presented in Figure 24. In localities where numerous overlapping survey and excavation projects had occurred, such as in the Russell Reservoir, in the Sumter National Forest, and on the Savannah River Site, summary data from recent technical syntheses of work on these localities was employed (Anderson and Joseph 1988; Anderson et al. n.d.; Sassaman et al. 1989).

With two exceptions, the projects referenced in Table 3 occur within the Savannah River basin. The two exceptions, a highway corridor in the Saluda basin (project #75) and surveys in a U.S. Forest Service District along the Broad River

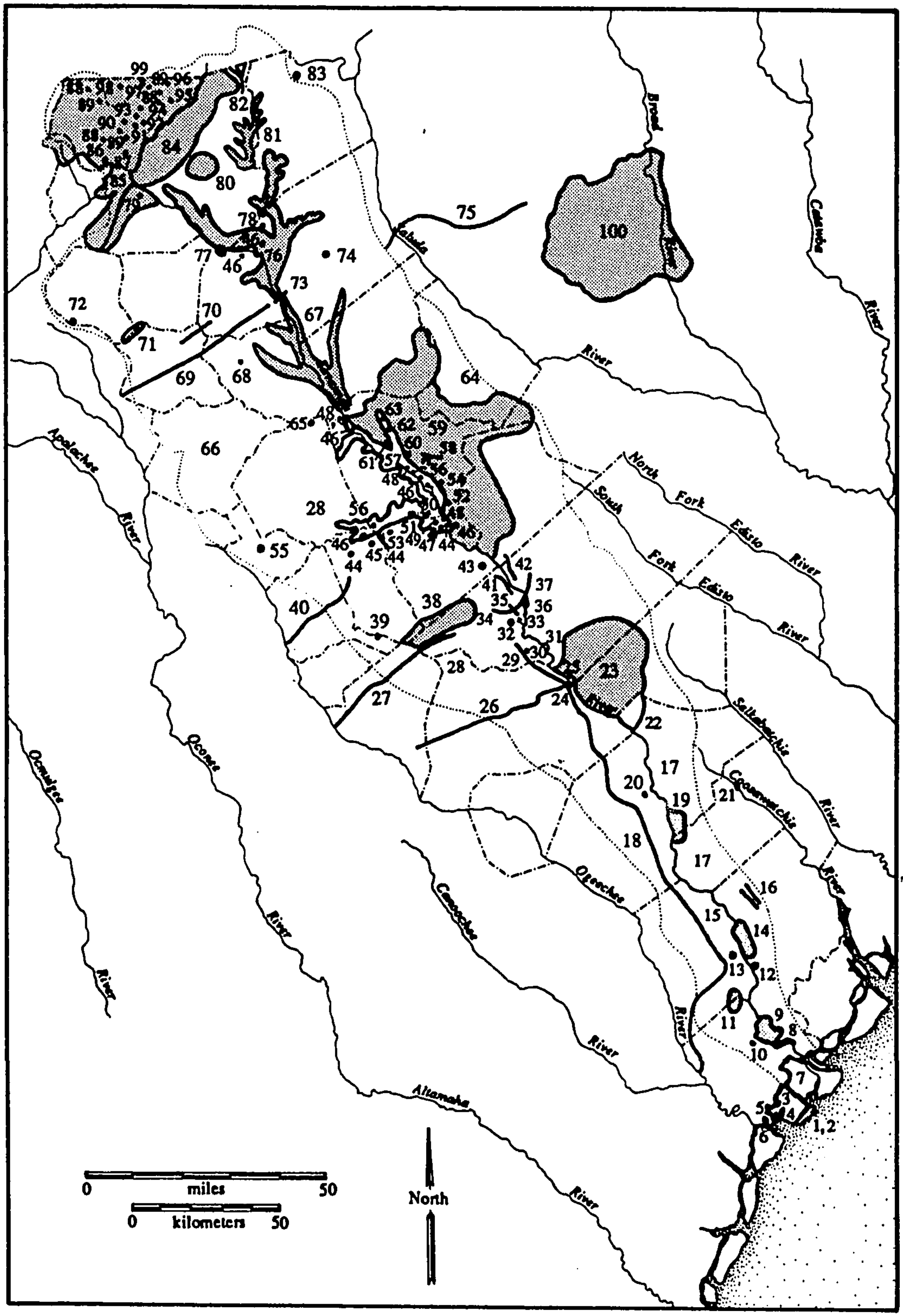


Figure 24. Major Survey Projects in the Savannah River basin.

Table 3. Archaeological Survey in the Savannah River Valley: Major Survey Localities
(Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites
1	Wassaw National Wildlife Refuge	Reconnaissance	20' x 30 miles	29.4	4	/	9	1
2	Wassaw National Wildlife Refuge	Intensive	n/a		38	/	69	7
3	Skidaway Island State Park	Reconnaissance	n/a		3	/	7	0
4	Skidaway Island	Reconnaissance	1500 acres	613	84	/	101	13
5	Landings Development, Skidaway Island	Intensive	101 acres	40.9	6	/	8	3
6	Green Island	Intensive	n/a		55	/	72	2
7	Chatham County WPA Archaeological Survey	Reconnaissance	n/a			/		
8	Savannah Harbor Sediment Basin/Widening Project	Reconnaissance	n/a		3	/	5	0
9	Savannah National Wildlife Refuge Reconnaissance	Reconnaissance	n/a		20	/	36	3
10	Chatham County Development Tract	Intensive	200 acres	81	1	/	1	0
11	Eli Whitney Watershed	Reconnaissance	300' x 44.5 miles	655.1	5	/	5	0
12	Purrysburg Tract	Intensive	304 acres	123.1	15	/	19	4
13	Fort Howard Paper Company Tract	Intensive	ca. 2000 acres	809.7	15	/	16	2
13	(Totals including testing)				31	/	54	2
14	Jasper County Geoarchaeological Project*	Reconnaissance	n/a		58	/	58	21
15	Ebenezer Creek Watershed	Reconnaissance	ca. 100' x 106.4 miles	522.1	99	/	108	11
16	New River Watershed Swamp	Reconnaissance	50' x 25 miles	61.3	0	/	0	0
17	Coastal Plain Mississippian Survey*	Reconnaissance	n/a		78	/	78	17

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
1	Wassaw National Wildlife Refuge		1			Pearson and Pearson 1978
2	Wassaw National Wildlife Refuge		5	2		DePratter 1977
3	Skidaway Island State Park					Weinland 1981a
4	Skidaway Island		7	11		Caldwell 1970: DePratter 1975
5	Landings Development, Skidaway Island			3		Elliott 1986a
6	Green Island		1	1		Crook 1975
7	Chatham County WPA Archaeological Survey					DePratter 1990; Williams 1968
8	Savannah Harbor Sediment Basin/Widening Project					Ferguson 1973; Scurry and Brooks 1978
9	Savannah National Wildlife Refuge Reconnaissance	2				Marrinan 1979
10	Chatham County Development Tract					Haecker and Williams 1978
11	Eli Whitney Watershed					Mitchell and Hally 1975
12	Purrysburg Tract	4				Elliott 1985
13	Fort Howard Paper Company Tract	1		1		Elliott and Smith 1985
13	(Totals including testing)	1		2	1	Smith 1986:239, 296
14	Jasper County Geoarchaeological Project	12	6	4		Brooks and Sassaman n.d.
15	Ebenezer Creek Watershed	3	5	2	2	Fish 1976
16	New River Watershed Swamp					Bianchi 1975
17	Coastal Plain Mississippian Survey	8	7	2		Ferguson n.d.

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites
18	Vogtle - Thalmann Transmission Line	Intensive	2782 acres (150'x153mi)	2252.5	53		64	1
18	(Totals including testing)				76		90	6
19	Groton Plantation	Reconnaissance	22,471 acres	9097.6	21	/	21	13
20	Lower Brier Creek	Reconnaissance	n/a		5	/	5	2
21	Brunson Wastewater Treatment Facility	Intensive	24.7 acres	10	2	/	2	0
22	Allendale/Burke County Chert Quarry Survey	Reconnaissance	n/a		27	/	27	3
23	Department of Energy Savannah River Site*	Intensive	120,200 acres	48664	755	/	853	101
24	Vogtle Nuclear Power Plant Site	Reconnaissance	n/a		8	/	8	1
25	Talatha Unit, Sumter National Forest*	Reconnaissance	6021 acres	2437.7	34	/	34	0
26	Vogtle - Wadley Transmission Line	Intensive	150' x 45 miles	331.2	43	/	60	2
27	Fall Line Freeway (Southern Alternate)	Intensive, 10%	15 1/4 mile x 300' areas	55.2	13	/	16	0
28	Central Savannah Basin Archaic Survey, Georgia	Reconnaissance	n/a		39	/	39	8
29	Vogtle - Goshen Transmission Line	Intensive	150' x 17.03 miles	125.4	27		31	1
30	Kimberly-Clark Plant Tract	Reconnaissance	450 acres	182.2	9		21	1
31	Silver Bluff*	Intensive	200 acres	81	1	/	1	1
32	Cedar Ridge Farms Development	Intensive	239 acres	96.8	0	/	0	0
33	Butler Creek Sewage Pipeline	Intensive	100' x 2.4 miles	11.8	9	/	10	3
34	Bobby Jones Expressway, Richmond County, Georgia*	Reconnaissance	300' x 10.4 miles	153.1	20	/	24	3

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
18	Vogtle - Thalmann Transmission Line	1				Garrow (ed.) 1984
18	(Totals including testing)	6				
19	Groton Plantation		13	3	1	Stoltman 1974
20	Lower Brier Creek		1	1		Elliott 1987
21	Brunson Wastewater Treatment Facility					Judge 1988a
22	Allendale/Burke County Chert Quarry Survey	2	1			Goodyear and Charles 1984:42, 72, 83
23	Department of Energy Savannah River Site	89	31	19		Sassaman et al. 1989
24	Vogtle Nuclear Power Plant Site	1				Honnerkamp 1973
25	Talatha Unit, Sumter National Forest					Hanson and Most 1978
26	Vogtle - Wadley Transmission Line	2				Wheaton et al. 1982:92, 127, 130
27	Fall Line Freeway (Southern Alternate)					Gresham et al. 1986
28	Central Savannah Basin Archaic Survey, Georgia	5	1	1	3	R. Smith 1974:57-59, 216ff
29	Vogtle - Goshen Transmission Line	1				Garrow & Bauer 1984
30	Kimberly-Clark Plant Tract	1				Garrow et al. 1980
31	Silver Bluff		1	1		Scurry et al. 1980
32	Cedar Ridge Farms Development					Smith 1979a
33	Butler Creek Sewage Pipeline	3				Ledbetter et al. 1980
34	Bobby Jones Expressway, Richmond County, Georgia	2	1	2	1	Ferguson and Widmer 1976:107

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites	/ Total # of Sites	Number of Mississippian Sites
35	Augusta 201 Facilities	Intensive	7 acres	2.8	1	/ 1	0
36 36	Augusta Railroad Relocation Project (testing)	Intensive (Testing)	n/a n/a		32 6	36 / 6	4 1
37	Bobby Jones Expressway, Aiken County, S.C.*	Reconnaissance	300' x 7.0 miles	103.1	5	/ 5	0
38	Fort Gordon Military Reservation	Intensive	ca. 1600 ha	1600	81	/ 89	16
39	Mill Branch Impoundment	Intensive	48 ha/ 120 acres	48	14	/ 14	2
40	Fall Line Freeway (Northern Alternate)	Intensive, 10%	11 1/4 mile x 300' areas	40.5	6	/ 6	0
41	Murrey Road Extension Project	Intensive	300' x 7 miles	103.1	8	/ 8	1
42	Pole Branch and Southwest Interceptors	Intensive	75' x 11 miles	40.5	2	/ 6	0
43	Columbia County Industrial Park	Intensive	321 acres	130	5	/ 10	0
44	Clarks Hill Lake Recreation Areas	Intensive	24 ha	24	1	/ 1	0
45	McDuffie County Water Treatment Facility	Intensive	ca. 30 ha	30	3	/ 8	1
46	Fifteen Tracts, Clark Hill and Hartwell Reservoirs*	Intensive	50.5 acres	20.4	3	/ 5	1
47	Wildwood Park Wastewater Treatment Plant	Intensive	0.62 ha	0.62	3	/ 4	0
48	Eighteen Private Club Lease Tracts, Clark Hill Lake	Intensive	152.83 acres	61.9	8	/ 13	0
49	Lake Springs Recreation Area, Clarks Hill Lake	Intensive	180 acres	72.9	1	/ 2	0
50	Clarks Hill Lake Land Exchange/Recreation Areas	Intensive	23.6 ha	23.6	12	/ 12	0
51	Cherokee Recreation Area, Clarks Hill Lake	Intensive	51.6 ha	51.6	4	/ 7	1

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
35	Augusta 201 Facilities					Garrow et al. 1978
36	Augusta Railroad Relocation Project	4				Bowen 1979 (Figures are grand totals)
36	(testing)	1				Elliott and Doyon 1981:124
37	Bobby Jones Expressway, Aiken County, S.C.					Cable et al. 1978a
38	Fort Gordon Military Reservation	4	5	10	3	Campbell et al. 1981
39	Mill Branch Impoundment	1		1		Ledbetter and Gresham 1988:39, 65-67
40	Fall Line Freeway (Northern Alternate)					Gresham et al. 1986
41	Murrey Road Extension Project				1	Bowen 1984; Ledbetter1988:84-85
42	Pole Branch and Southwest Interceptors					Martin and Drucker 1987
43	Columbia County Industrial Park					Drucker and Anthony 1983
44	Clarks Hill Lake Recreation Areas					Jameson 1986
45	McDuffie County Water Treatment Facility	1				Judge 1988b
46	Fifteen Tracts, Clark Hill and Hartwell Reservoirs	1				Rudolph et al. 1979a; Garrow 1980
47	Wildwood Park Wastewater Treatment Plant					Webb 1987
48	Eighteen Private Club Lease Tracts, Clark Hill Lake					Anuskiewicz 1982
49	Lake Springs Recreation Area, Clarks Hill Lake					Wood 1980
50	Clarks Hill Lake Land Exchange/Recreation Areas					Anuskiewicz 1984
51	Cherokee Recreation Area, Clarks Hill Lake	1				Cridlebaugh 1985a, 1985b

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites
52	Catfish Recreation Area, Clarks Hill Lake	Intensive	208.4 ha	208.4	19	/	47	0
53	Mistletoe State Park	Intensive	2 ha	2	4	/	4	0
54	Brunswick Pulp and Paper, Aug. Arch. Soc.	Reconnaissance	5000 acres	2024	44	/	44	0
55	Alexander H. Stephens State Park	Reconnaissance	n/a		5	/	7	0
56	Clarks Hill Recreational Club Lease Tracts*	Intensive	360.8 acres	146.1	15	/	19	0
57	Clark Hill Reservoir	Reconnaissance	78,500 acres	31781.4	128	/	128	29
58	Baker Creek State Park Connector	Intensive	6473' x 66'	4	0	/	1	0
59	Long Cane Division, Sumter National Forest	Reconnaissance	113,220 acres	45838.1	391	/	698	24
60	McCormick County Law Enforcement	Intensive	8 acres	3.2	1	/	1	0
61	Little River Development	Intensive	1000 acres	404.9	19	/	49	0
62	Little River-Buffalo Creek Land Disposal Tract	Intensive	2300 acres	931.2	63	/	108	1
63	John De La Howe School	Intensive	188 acres	76.1	12	/	16	0
64	Greenwood County Archaeological Survey*	Reconnaissance	4707 acres	1905.6	295	/	560	24
65	Anthony Shoals Site (9Ws51) Evaluation	Intensive	430m x 80m	3.44	1	/	1	1
66	Oglethorpe County Clearcuts	Intensive	478 ha	478	173	/	173	29
67	Richard B. Russell Reservoir*	Intensive	ca. 13,325 acres	5394.7	609	/	732	153
68	Georgia Kraft Mill, Elbert County	Intensive	457 acres	185	14	/	18	0

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
52	Catfish Recreation Area, Clarks Hill Lake					Cridlebaugh 1985a, 1985b
53	Mistletoe State Park					Ledbetter 1985; Ledbetter et al. 1985
54	Brunswick Pulp and Paper, Aug. Arch. Soc.					George S. Lewis: pers. comm. 1989
55	Alexander H. Stephens State Park					Weinland 1981b
56	Clarks Hill Recreational Club Lease Tracts					Drucker 1983
57	Clark Hill Reservoir	29				Miller 1974
58	Baker Creek State Park Connector					Espenshade 1988
59	Long Cane Division, Sumter National Forest	18	5	1		Anderson et al. n.d.; Bates: pers. comm. 1989
60	McCormick County Law Enforcement					Charles and Smith 1988
61	Little River Development					Holschlag and Rodeffer 1976
62	Little River-Buffalo Creek Land Disposal Tract	1				Drucker et al. 1984:3-20
63	John De La Howe School					Martin et al. 1987
64	Greenwood County Archaeological Survey	21	1	2		Rodeffer et al. 1979:53
65	Anthony Shoals Site (9Ws51) Evaluation				1	Wood and Smith 1988:43-47
66	Oglethorpe County Clearcuts	13	3	2	16	Freer 1989
67	Richard B. Russell Reservoir	74	27	46	6	Anderson and Joseph 1988
68	Georgia Kraft Mill, Elbert County					Webb and Garrow 1981

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites
69	Powder Springs Pipeline Corridor	Intensive	100' x 7.5 miles	36.8	5	/	6	0
70	Transco Pipeline	Intensive	15.2m x 19.39km	29.5	18	/	19	0
71	Hudson River Watershed*	Reconnaissance	n/a		18	/	20	1
72	Grove River Watershed*	Reconnaissance	736 acres; 100' x 15 miles	371.6	9	/	10	3
73	Colonial Pipeline Company	Intensive	368m x 20m	0.7	0	/	0	0
74	Broadway Lake Dredging Project*	Reconnaissance	n/a		3	/	3	0
75	Laurens-Anderson Highway Corridor*	Intensive	500' x 31.5 miles	772.9	125	/	165	8
76	Hartwell Reservoir	Reconnaissance	n/a		70	/	70	
77	Lake Hartwell State Park*	Intensive	600 acres	242.9	29	/	33	0
78	Pioneer Utility Line	Intensive	50' x 3100'	1.4	0	/	0	0
79	Thrift Exchange Tract, Chattahoochee NF	Intensive	480 acres	194.3	1	/	5	0
80	Oconee County Wastewater Project	Intensive	50' x 45 miles, +40 acres	126.6	5	/	13	1
81	Keowee-Toxaway Reservoir	Reconnaissance	18,500 acres	7489.9	38	/	39	10
82	Oconee-Jocassee-Bad Creek Transmission Lines	Intensive	50' x 13 miles	31.9	5	/	5	0
83	Oolenoy Watershed	Intensive	50 acres	20.2	0	/	0	0
84	Andrew Pickens District, Sumter National Forest*	Reconnaissance	77,655 acres	31439.3	53	/	71	10
85	Littleton Land Exchange, Chattahoochee NF	Intensive	376.26 acres	152.3	1	/	3	0

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
69	Powder Springs Pipeline Corridor					Garrow 1978
70	Transco Pipeline					Meyer 1988
71	Hudson River Watershed	1				Barber et al. 1979
72	Grove River Watershed	1			2	Jefferies and Hally 1975
73	Colonial Pipeline Company					Foss and Warner 1977
74	Broadway Lake Dredging Project					Brooks 1977
75	Laurens-Anderson Highway Corridor	8				Goodyear et al. 1979:218, Appendix C
76	Hartwell Reservoir					Caldwell 1974c
77	Lake Hartwell State Park					Drucker et al. 1979; Drucker and Anthony 1982
78	Pioneer Utility Line					Judge 1989
79	Thrift Exchange Tract, Chattahoochee NF					Wynn 1982b
80	Oconee County Wastewater Project	1				Rodeffer and Holschlag 1976
81	Keowee-Toxaway Reservoir		1	3	9	Beuschel 1976
82	Oconee-Jocassee-Bad Creek Transmission Lines					Brockington 1978a
83	Oolenoy Watershed					Brockington 1978b
84	Andrew Pickens District, Sumter National Forest	6	2	1	7	Anderson et al. n.d.; Bates: pers. comm. 1989
85	Littleton Land Exchange, Chattahoochee NF					Gaffney and Wynn 1981

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Type of Survey/Project	Area Examined	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites
86	Stamp Creek Road, Chattahoochee National Forest	Intensive	50' x 5.9 miles	14.5	1	/	1	0
87	Georgia Power Co. Land Exchange, Chattahoochee NF	Intensive	65 acres	26.3	0	/	0	0
88	Tallulah District, Chattahoochee National Forest	Intensive	2688 acres	1088.2	3	/	11	1
89	Seven Compartments, Chattahoochee NF	Reconnaissance	4000 acres	1619.4	38	/	38	4
90	Six Timber Sale Areas, Chattahoochee NF	Intensive	1239 acres	501.6	3	/	4	0
91	Worley Ridge Tracts, Chattahoochee NF	Reconnaissance	6850 acres	2773.3	11	/	13	0
92	Rabun County Landfill	Intensive	60 acres	24.3	2	/	2	0
93	Warwoman Wildlife Openings, Chattahoochee NF	Intensive	6 acres	2.4	2	/	2	1
94	Walnut Fork Road, Chattahoochee National Forest	Intensive	50' x 4 miles	9.8	2	/	2	0
95	Pounding Mill Creek Timber Sale, Chattahoochee NF	Intensive	580 acres	234.8	2	/	9	0
96	Three Site Testing, Chattahoochee National Forest	Intensive	n/a		3	/	3	0
97	Ramey Creek Timber Sale, Chattahoochee NF	Intensive	1605 acres	649.8	12	/	20	1
98	Hoojah Branch, Chattahoochee NF	Intensive	1417 acres	573.7	11	/	12	2
99	Darnell Creek Road, Chattahoochee NF	Intensive	50' x 4.7 miles	11.5	4	/	4	0
100	Enoree Division, Sumter National Forest	Reconnaissance	158,505 acres		168	/	355	4
			GRAND TOTALS	205840	3947		5150	553

* = all collections examined as part of this project.

27450 square kilometers = size of Savannah River basin
2058.4 square km, or 7.5 % of basin has been surveyed at any level of intensity
702.22 square km, or 2.6% of the basin has been intensively surveyed

Table 3 (continued). Archaeological Survey in the Savannah River Valley: Major Survey Localities (Proceeding from the Mouth to the Interior)

Project Number	Locality (Proceeding from south to north)	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components	References
86	Stamp Creek Road, Chattahoochee National Forest					Wynn 1980a, 1981a
87	Georgia Power Co. Land Exchange, Chattahoochee NF					Wynn 1980b
88	Tallulah District, Chattahoochee National Forest	1				Wynn 1986:36
89	Seven Compartments, Chattahoochee NF				4	Seckinger and Graybill 1976
90	Six Timber Sale Areas, Chattahoochee NF					Willingham and Wynn 1984
91	Worley Ridge Tracts, Chattahoochee NF					Willingham 1984a
92	Rabun County Landfill					Rudolph et al. 1979b
93	Warwoman Wildlife Openings, Chattahoochee NF					Willingham 1984b
94	Walnut Fork Road, Chattahoochee National Forest					Wynn 1981b
95	Pounding Mill Creek Timber Sale, Chattahoochee NF					Willingham 1983a
96	Three Site Testing, Chattahoochee National Forest					Schneider 1977
97	Ramey Creek Timber Sale, Chattahoochee NF				1	Willingham 1983b
98	Hoojah Branch, Chattahoochee NF	1		1		Willingham 1983c:17, 1984 c
99	Darnell Creek Road, Chattahoochee NF					Wynn 1980c
100	Enoree Division, Sumter National Forest	4				Anderson et al. n.d.; Bates: pers. comm. 1989
	GRAND TOTALS	323	126	121	58	

(Projects 75 and 100 data excluded from basin totals) (locality #100), were selected to examine Mississippian use of the central Piedmont of South Carolina. This region lay midway between the Mississippian chiefdoms occupying the Savannah and Wateree rivers during the late prehistoric era. How the area was used is poorly documented, however; it may have been an unoccupied buffer zone, or may have been occupied. Data from these two projects were not included in the computation of basin summary figures.

To date, less then one-tenth (2058.4 sq. km, or 7.5%) of the 27450 sq. km Savannah River basin has been surveyed at any level of coverage (Table 3). Much of this total comes from opportunistic, reconnaissance-level survey projects where typically only the largest or most obvious sites were recorded. Approximately 2.6% of the basin has been intensively surveyed using field procedures theoretically designed to locate and record all possible sites. Intensive survey projects throughout the basin, however, provide at least some coverage in each of the major physiographic zones present, including the Sea Island, Coastal Plain, Fall Line, Piedmont, and Blue Ridge provinces (Figure 24). While sites are reported from most areas of the basin, intensive survey coverage of large contiguous areas is restricted to a few localities, typically federal lands or project areas where coverage, designed to meet historic preservation inventory requirements, has been mandated by federal environmental legislation and executive order. These localities include the Wassaw and Savannah National Wildlife Refuges, the Savannah River Site, Fort Gordon, in the Clarks Hill, Russell, and Hartwell reservoirs, and in the districts of the Oconee, Chattahochee, and Sumter National Forests. Fortunately, these tracts are themselves dispersed along the river, and encompass portions of all of the major physiographic zones.

As of mid-1989, 6871 archaeological sites had been recorded in the 35 counties in Georgia and South Carolina that encompass the Savannah River Basin (Figure 25). Of these, 5150 or 75.0% were found during the survey projects documented in Table 3.

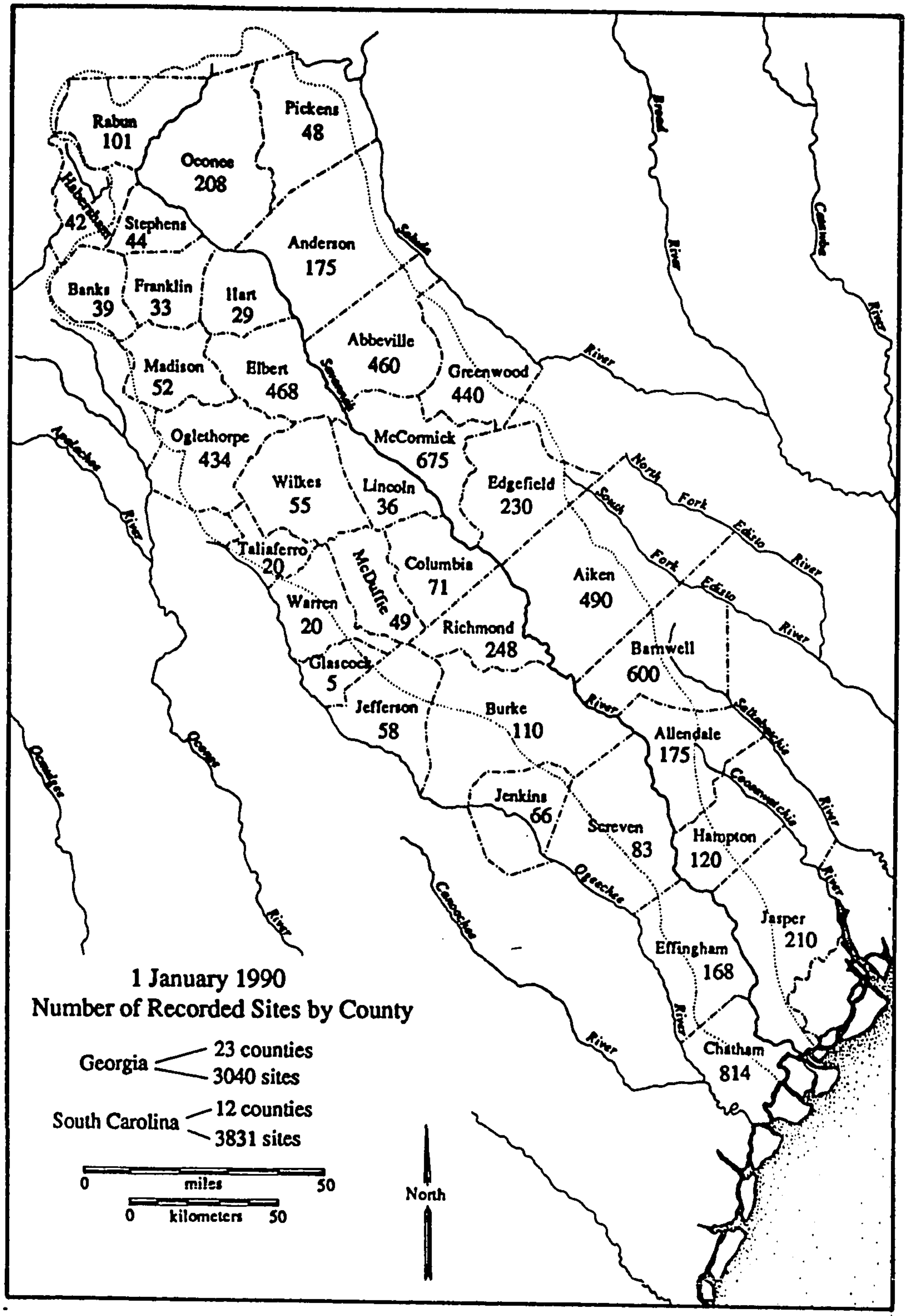


Figure 25. Total Recorded Prehistoric Sites, by County, in the Savannah River basin.

The remaining 1721 sites either lie in portions of these counties outside the basin proper, or are isolated sites reported by amateurs or professionals that do not derive from systematic survey coverage. As best as I have been able to determine, the data in Table 3 represents over 90% of the sites recorded in the basin, and almost all of the sites found through intensive survey activity. If projects or sites have been overlooked in the basin, it is because information from them is not on file in the Georgia and South Carolina state repositories. It should be noted that no sites or records from North Carolina are included in the basin totals, even though a tiny fraction (<1%) of the basin, consisting of rugged terrain at the extreme headwaters, extended into this state.

In spite of the large numbers of sites recorded in the basin, gaps in coverage are evident. Comparatively few sites have been recorded in Georgia in the central and northern portions of the basin, where many counties have fewer than fifty recorded sites. The high figures in Elbert and Oglethorpe counties, parenthetically, reflect work in the Russell and Wallace reservoirs. A particularly crucial gap in intensive coverage occurs along the Georgia side of the Savannah at and just below Augusta, in Lincoln, Columbia, and Richmond counties. A number of Indian groups were reported in this area during the early historic era and two major mound groups, Hollywood and Mason's Plantation, are documented during the late prehistoric era. Although a large number of sites are recorded in Richmond County, Georgia, many are on Fort Gordon which is located well away from the river in the western part of the county. The surveys that have been conducted to date along the river in this area have been comparatively minimal in extent, along narrow highway or railroad corridors, or have been directed to highly visible Late Archaic shell midden sites like Stallings Island. While large numbers of sites are known from the counties around Augusta, the nature of late prehistoric occupations along the channel itself remains largely unknown.

Only one survey explicitly directed to locating Mississippian sites has been conducted in the Savannah River basin, an opportunistic survey undertaken by Ferguson in 1971, following up on leads provided by local informants. While 78 sites were located during this project, which focused on the central Coastal Plain, the results of the intensive surveys that have been undertaken to date indicate that thousands of sites remain to be recorded. While it is likely that most or all of the platform mound centers in the basin have been documented, the information that is available about other Mississippian site types must be viewed as incomplete. Since many of the sites reported from the basin, even in areas receiving extensive survey coverage, have small and nonrepresentative artifact collections or, in some cases, no extant collections at all available for analysis, great care must be taken when conducting analyses of settlement patterning or function.

Excavation Assemblages: The Mound Centers

Fifteen Mississippian mound centers, presumably the ceremonial and political focus for life during this period, are known from the Savannah River Valley. These sites, proceeding inland from the mouth of the drainage, are Haven Home, Irene, Hudson's Ferry, Red Lake, Lawton, Mason's Plantation, Hollywood, Rembert, Fortson, Beaverdam Creek, Tate, Tugalo, Estatoe, Chauga, and I. C. Few (Table 4; Figure 23). These sites include both platform and burial mounds, with the former mound type typically much larger than the latter. Given the century and more of local effort directed toward finding and excavating mounds, it is probable that most if not all of the Mississippian platform mound complexes originally constructed in the basin have been located. The sample of burial mounds, in contrast, is probably incomplete, due to the small size of some of these structures, particularly those dating to the initial Mississippian period, which are little more than low rises of earth. Archaeological investigations at these sites are summarized in the pages that follow, proceeding from the mouth of the

Table 4. Mississippian Mound Sites in the Savannah River Valley.

Site Number	Mound Group	Number of Mounds	Type of Mounds Platform	Burial	Period of Occupation	References
9Ch15	Haven Home	1		X	Savannah I/II	Waring 1968b
9Ch1	Irene	2	X	X	Savannah II/III, Irene I	Moore 1898a:168; Caldwell and McCann 1941
9Sn3	Hudson's Ferry	1		X	Savannah II/III?	Moore 1898a:169-171
9Sn4	Red Lake	1	X		Savannah II/III	Fred Cook: personal communication 1989
38Al11	Lawton	2	X		Savannah II/III	Moore 1898a:171-172; Anderson 1989
–	Masons Plantation	6	X		Savannah III/Hollywood	Jones 1873:148-157; Moore 1898a:167-168
9Ri1	Hollywood	2	X		Hollywood	Thomas 1894:317-326; DeBaillou 1965
9Eb1	Rembert	5	X		Beaverdam, Rembert	Thomas 1894:315-317; Caldwell 1953; Rudolph and Hally 1985:453-459
9Eb85	Beaverdam Creek	1	X		Beaverdam	Rudolph and Hally 1985
9Eb86	Tate	1	X		Beaverdam	Hutto 1970:23-25
9St1	Tugalo	1	X		Jarrett, Rembert, Tugalo	Thomas 1984:314-315; Caldwell 1956
9St3	Estatoe	1	X		Tugalo, Estatoe	Kelly and De Baillou 1960
38Oc47	Chauga	1	X		Jarrett, Tugalo, Estatoe	Kely and Neitzel 1959, 1961
38Pn2	I. C. Few	1		X?	Beaverdam, Rembert, Estatoe	Grange 1972

river into the interior. All but two of these sites, Mason's Plantation and Tate, have seen fairly extensive prior professional activity. Periods of primary occupation, as well as individual construction episodes, have been fairly precisely determined for most sites, yielding an invaluable data set for the study of organizational change in the basin.

Irene

Introduction. Irene (9Ch1) is a multi-mound site occupied from ca. A.D. 1200 to 1450 and located near the river mouth just south of the confluence of Pipemaker Creek with the Savannah River, several km above the river mouth (Figure 26). Excavations were conducted at the site from September 1937 to January 1940 under the auspices of the Works Progress Administration (Caldwell and McCann 1941). The focus of over two years of continuous fieldwork by crews of upwards of fifty people, the site was almost completely excavated. The report on the excavations, which was released less than two years after the completion of the fieldwork, remains one of the few comprehensive Mississippian site reports produced from this part of the Southeast. The work produced a Mississippian cultural sequence for the lower part of the valley that has remained essentially unmodified to this day. That Irene was completely excavated when it was is fortunate, since the area where it stood has since been developed in the expansion of the city of Savannah. The site is the most intensively examined Mississippian ceremonial center in the Savannah River Valley, with clues in its occupational history that are critical to understanding events throughout the basin during this period.

The Irene site, which consisted of two mounds and an associated village area, had previously been examined by C. B. Moore in 1897 (Appendix A). Moore conducted fairly limited testing in both mounds. A large looter's pit in the large mound was examined "and a certain amount of digging done" with no evidence for burials or other artifacts found. Eighteen burials were found in the smaller mound, all flexed. Three of

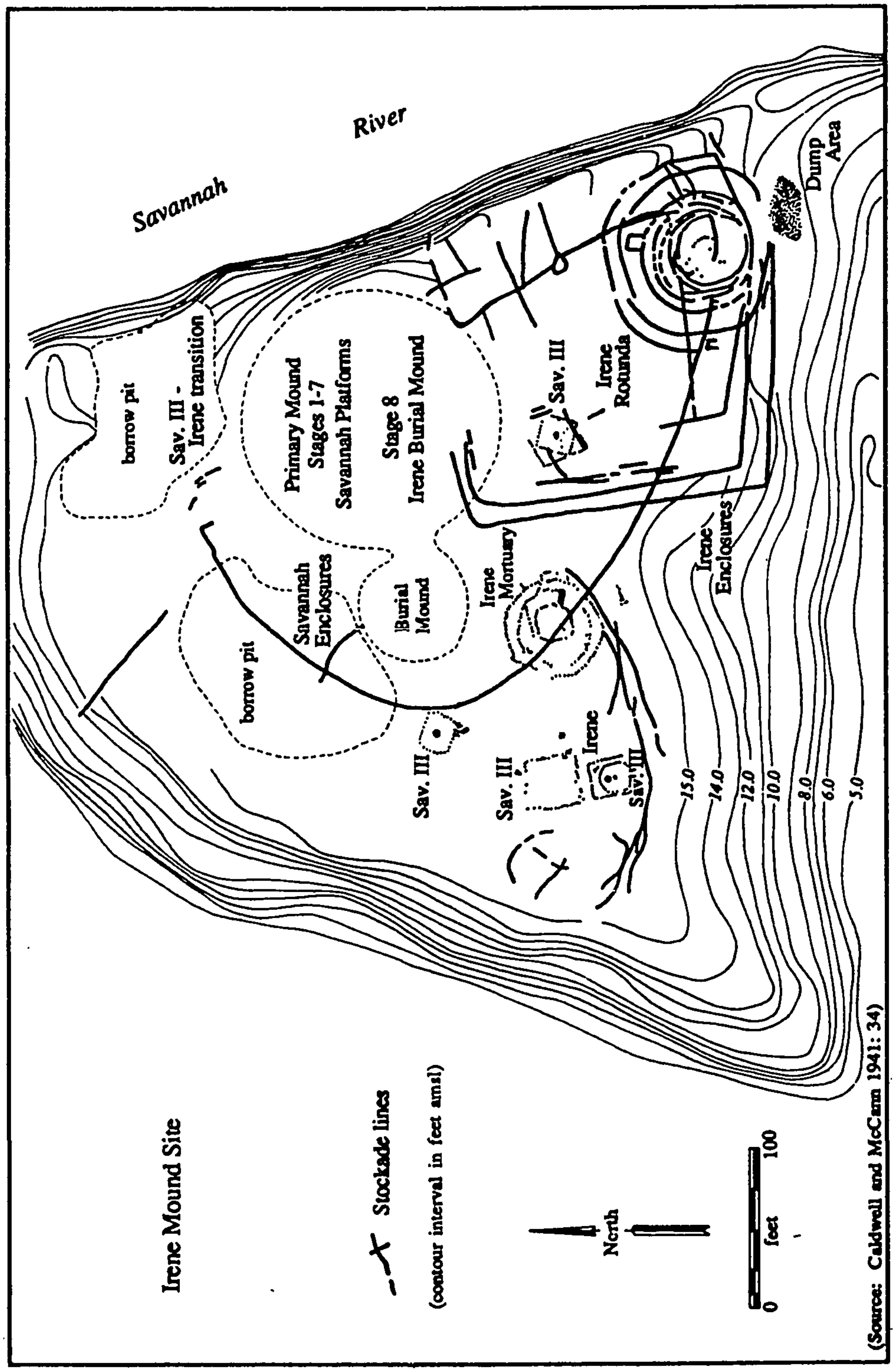


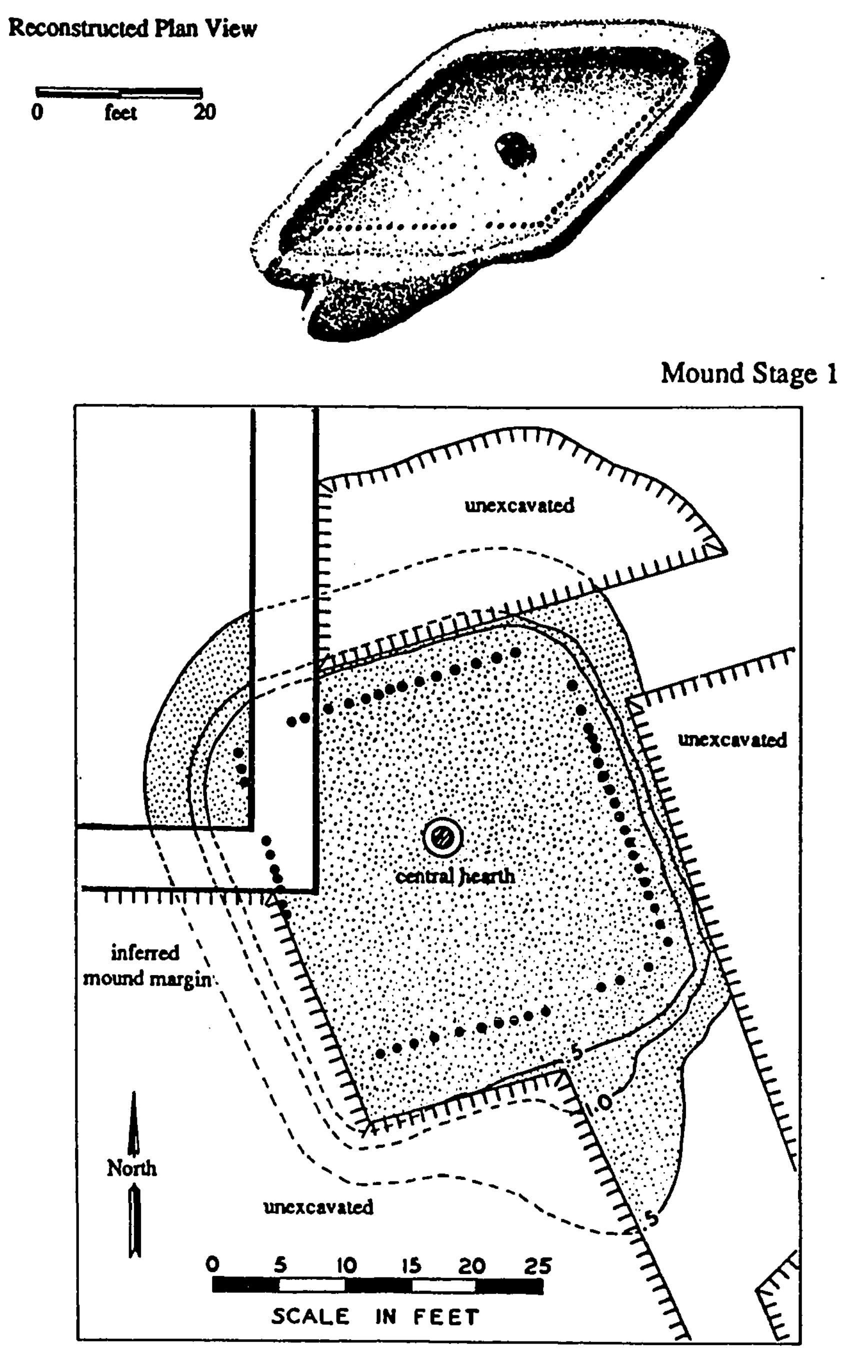
Figure 26. Major Architectural Features at the Irene Site (9Ch1).

the burials had associated grave goods; two had small shell beads and the third a pecked pebble-hammerstone. Following Moore's work portions of the northern side of the primary mound were hauled away for use as fill, permitting only the partial reconstruction of the size of the later stages, and some of the structures on them, during the WPA excavations.

Both mounds and almost six acres of the surrounding center were examined during the 1937 to 1939 fieldwork. Eight construction stages with associated structures were found in the large mound at Irene, which was approximately 48.8 m in diameter and 4.7 m high in 1937. The first seven construction episodes, the first three earth-embanked structures, and the next four truncated pyramidal platform mounds belonged to the Savannah II/III phases and were characterized by Savannah Burnished Plain, Check Stamped, Cordmarked, and Complicated Stamped pottery (Caldwell and McCann 1941:78). Mound Stage 8, a circular earthen mound with a rounded summit, dated to the succeeding Irene I phase, and was characterized by Irene Incised, Complicated Stamped (filfot motif), and Plain pottery. A low circular burial mound was located to the west of the large mound. A total of 106 burials were found in the fill of this mound, which saw use during both the Savannah and Irene occupations. A large mortuary structure and a rotunda or council house were built during the Irene occupation. Finally, a series of fencelines or enclosures were found in the area around the mounds, and different segments were dated to one major occupation or the other. No evidence at all was found for historic contact (Caldwell and McCann 1941:72), and on the basis of current knowledge about the cultural sequence, the site appears to have been abandoned some time around or shortly after ca. A.D. 1450 (Chester DePratter: personal communication 1988; herein).

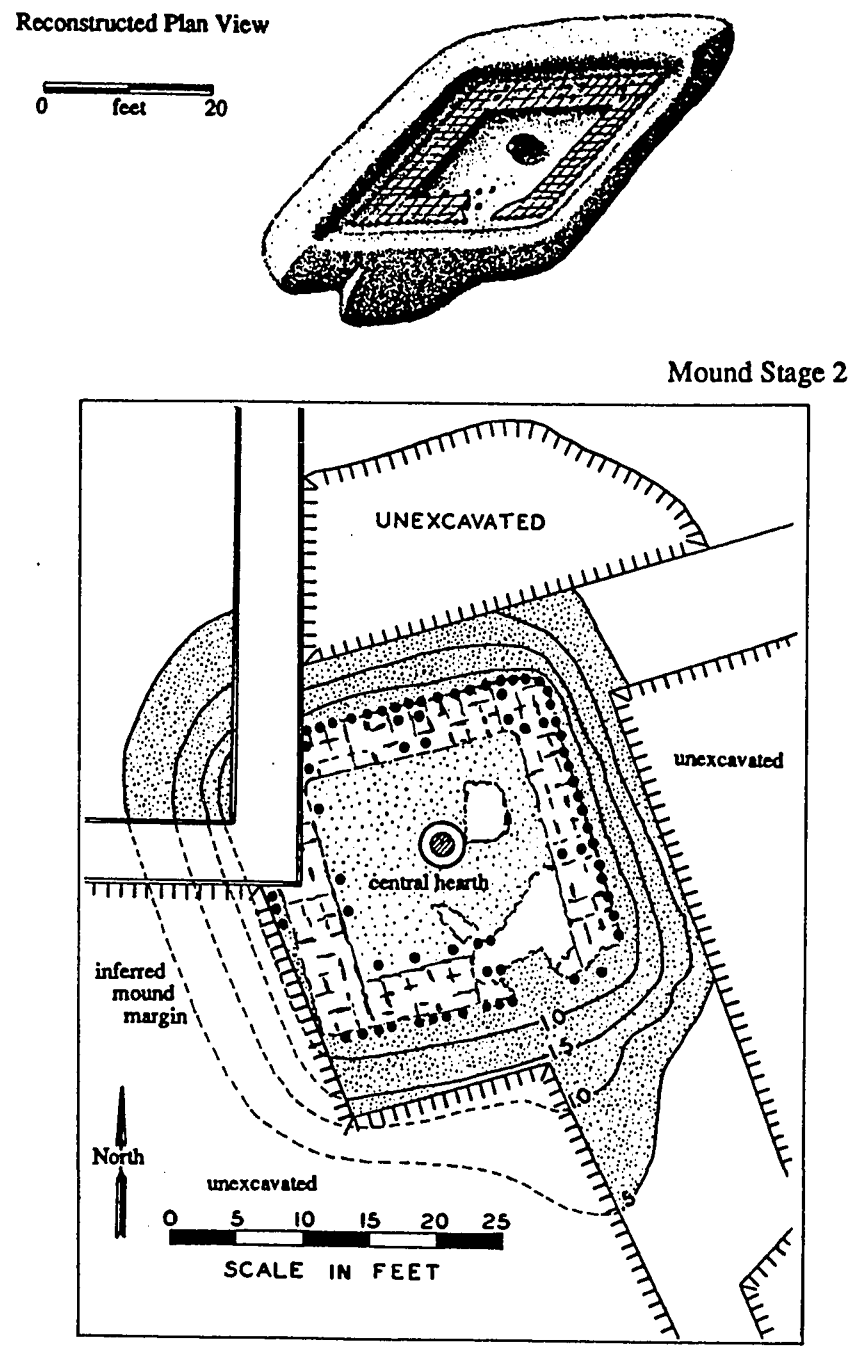
Primary Mound Construction Episodes. Based on ceramic evidence, specifically the presence of Savannah Check and Complicated Stamped pottery, the earliest construction episodes at Irene began sometime around A.D. 1150 to 1200 (Caldwell and McCann 1941:78). While evidence for earlier occupations was found, in the form of small numbers of Wilmington, Deptford, and Stallings sherds, and a range of Archaic and Woodland point types, the first major use of the site appears to be during the Mississippian period. Mound Stages 1 and 2 at Irene were earth-embanked structures with central fire basins (Figures 27, 28), a type of presumably communal and ceremonial structure common in the earliest levels of many of the Mississippian platform mounds in the South Appalachian area (Rudolph 1984). The structures were built on the original ground surface and were fairly small and squared, measuring ca. 7.6 m on a side, with an entrance and a ramp on the southeast side. The area covered by the surrounding embankments measured approximately 17.7 by 11.6 m. The embankment for Mound Stage 1 was 38 cm high, while that for Mound Stage 2 was 51 cm high, an addition of approximately 13 cm. Mound Stage 2 had a somewhat more complex central structure than the first stage, with a low modeled ledge of clay around its interior wall and a number of internal posts, features suggesting the presence of partitioned seating areas (Figure 28). The floor of the second stage was only ca. 5 cm higher than that of the first stage, and was built right over it. Neither Stage 1 nor Stage 2 appeared to have burned.

Mound Stage 3 at Irene was very poorly defined (Figure 29). Only slightly larger than the preceding mound, at 21.3 by 19.5 m, the summit had been removed, presumably during leveling/construction operations associated with the construction of Stage 4. An earth-embanked structure is assumed to have been present, although its elevation above the preceding stage could not be determined. A human skull was found just under the western margin of this mound, under a Savannah Fine Cordmarked vessel, but whether they were associated with the mound construction or something left from an earlier occupation could not be determined. A series of palisade or screening wall lines were found around the periphery of the mound and extending out from it approximately



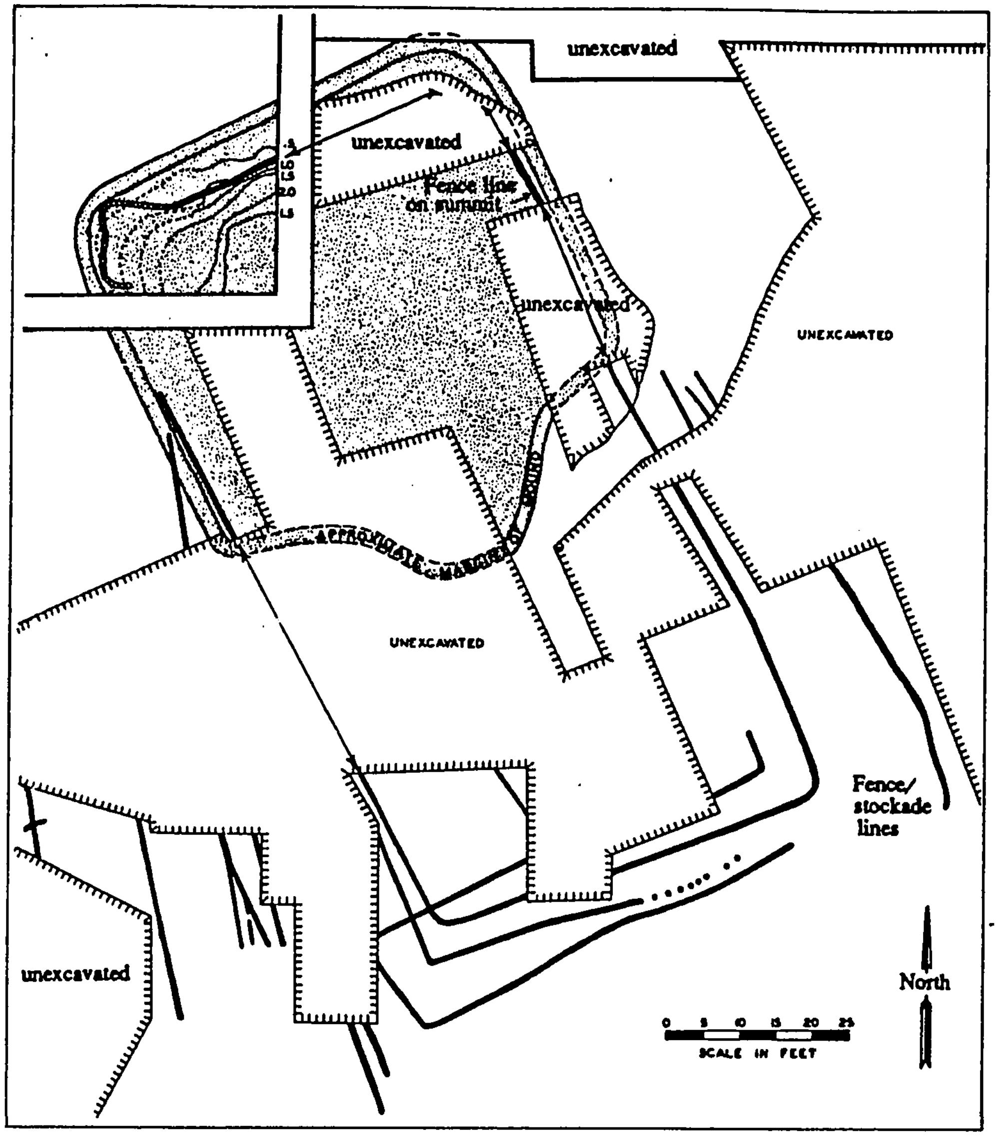
(Source: Caldwell and McCann 1941: 8,70)

Figure 27. Stage 1 in the Primary Mound at the Irene Site (9Ch1).



(Source: Caldwell and McCann 1941: 9,70)

Figure 28. Stage 2 in the Primary Mound at the Irene Site (9Ch1).



Mound Stage 3

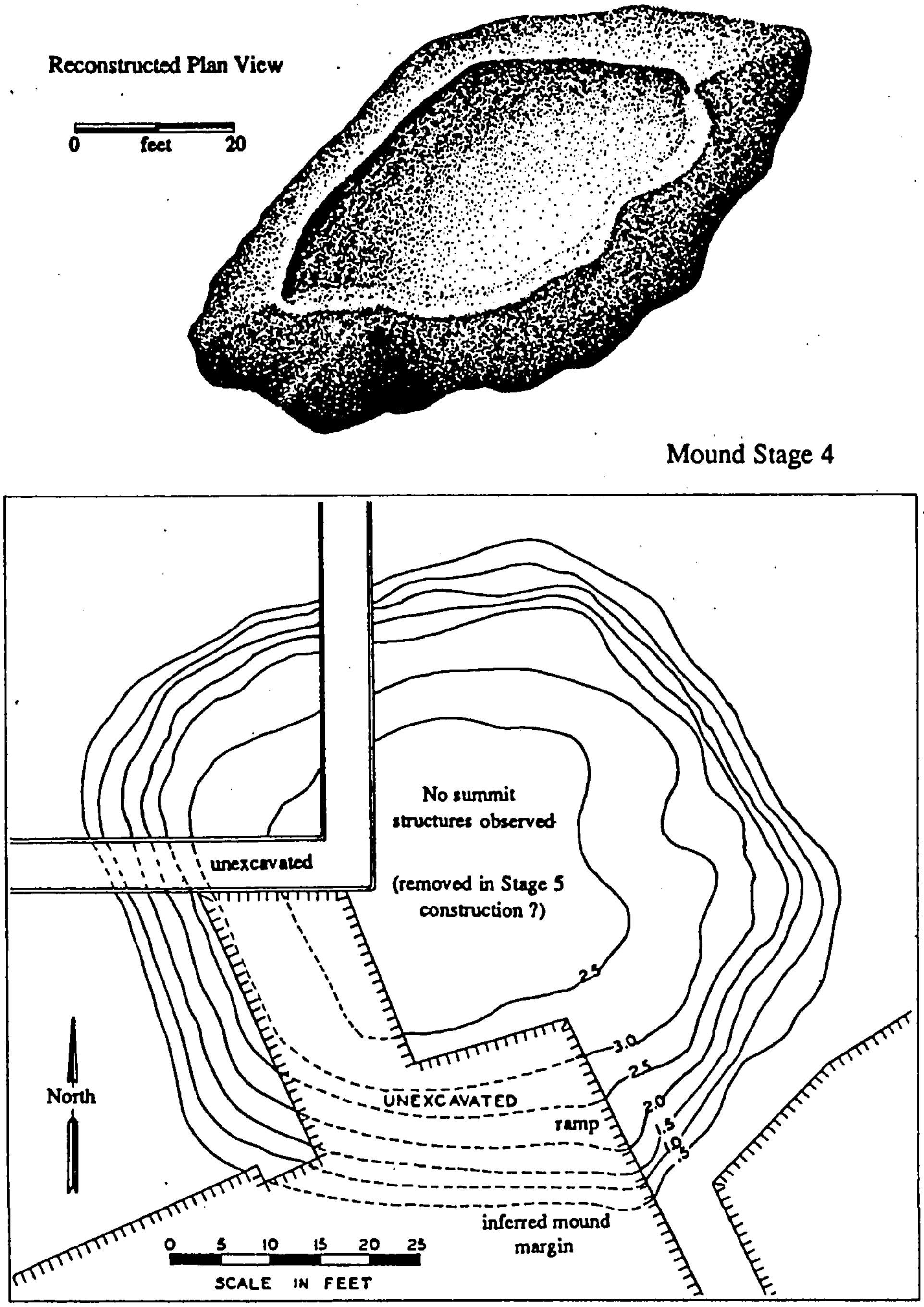
(Source: Caldwell and McCann 1941: 10)

Figure 29. Stage 3 in the Primary Mound at the Irene Site (9Ch1).

21.3 m from the presumed entranceway on the southeastern side, enclosing a roughly rectangular-shaped area. Several rebuilding episodes were suggested by the presence of multiple wall lines (Figure 29).

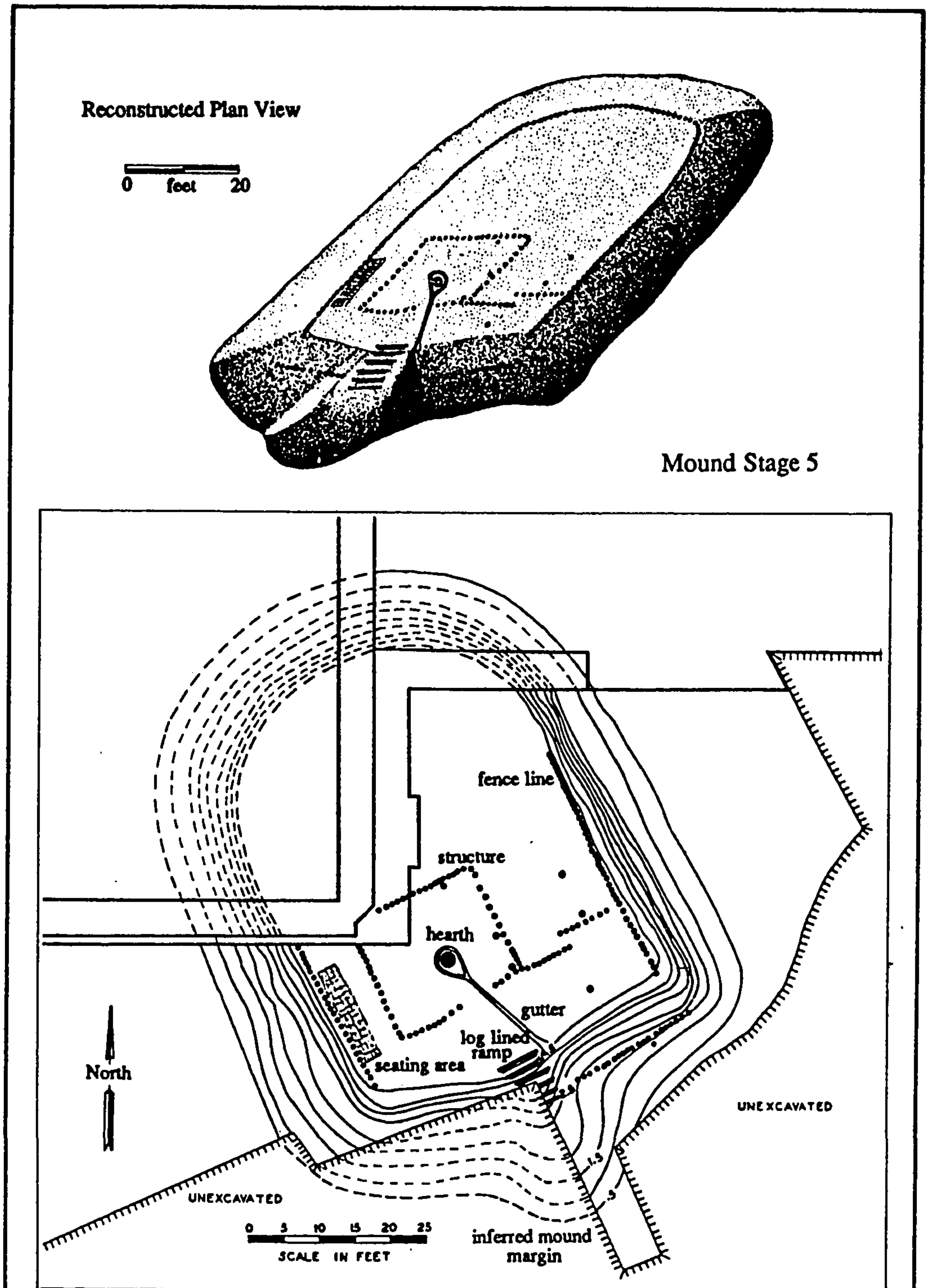
Mound Stage 4 was approximately 1.07 m high, 21.3 m on a side at the base, and 13.1 m on a side at the summit with a central depression approximately 15 cm lower where a structure had stood (Figure 30). This unusual morphology prompted Caldwell and McCann (1941:11) to suggest the construction was transitional between the earlier "embankments and the succeeding series of true platform mounds." While scattered postmolds and linear alignments were observed, the outline of summit structures could not be determined. The presence of fired daub and charred cane suggests one or more of the structures probably burned. Stage 5 was flat topped, a true platform mound measuring approximately 1.37 m high, 29.3 by 18.3 m at the base, and 15.5 by 14.9 m at the summit (Figure 31). Shell was placed in a layer on the sides of the mound away from the entrance area, possibly to "strengthen and drain the mound slopes" and hence reduce slumping (Caldwell and McCann 1941:21), although the shell may have merely been another source of fill that was exploited. As with the preceding stages, a ramp was located on the southeastern side, although for this stage a series of logs had been placed on the slope, creating steps. A central structure measuring 6.1 by 4.9 m was present, with a fire basin surrounded by a shallow teardrop shaped gutter extending to the edge of the mound, possibly to drain fluids (Figure 31). Palisades were erected at the base and on the summit of the mound, although openings at the ramp and mound corners suggest their use for screening rather than defensive purposes. A clay layer with cane matting impressions in its upper surface was observed by the southwest wall that may have been an open seating area.

Mound Stage 6 was built directly over Stage 5 and was somewhat larger, measuring 1.5 m in height, 32.6 by 25.9 m at the base, and 18.9 by 14.9 m at the



(Source: Caldwell and McCann 1941: 12,70)

Figure 30. Stage 4 in the Primary Mound at the Irene Site (9Ch1).

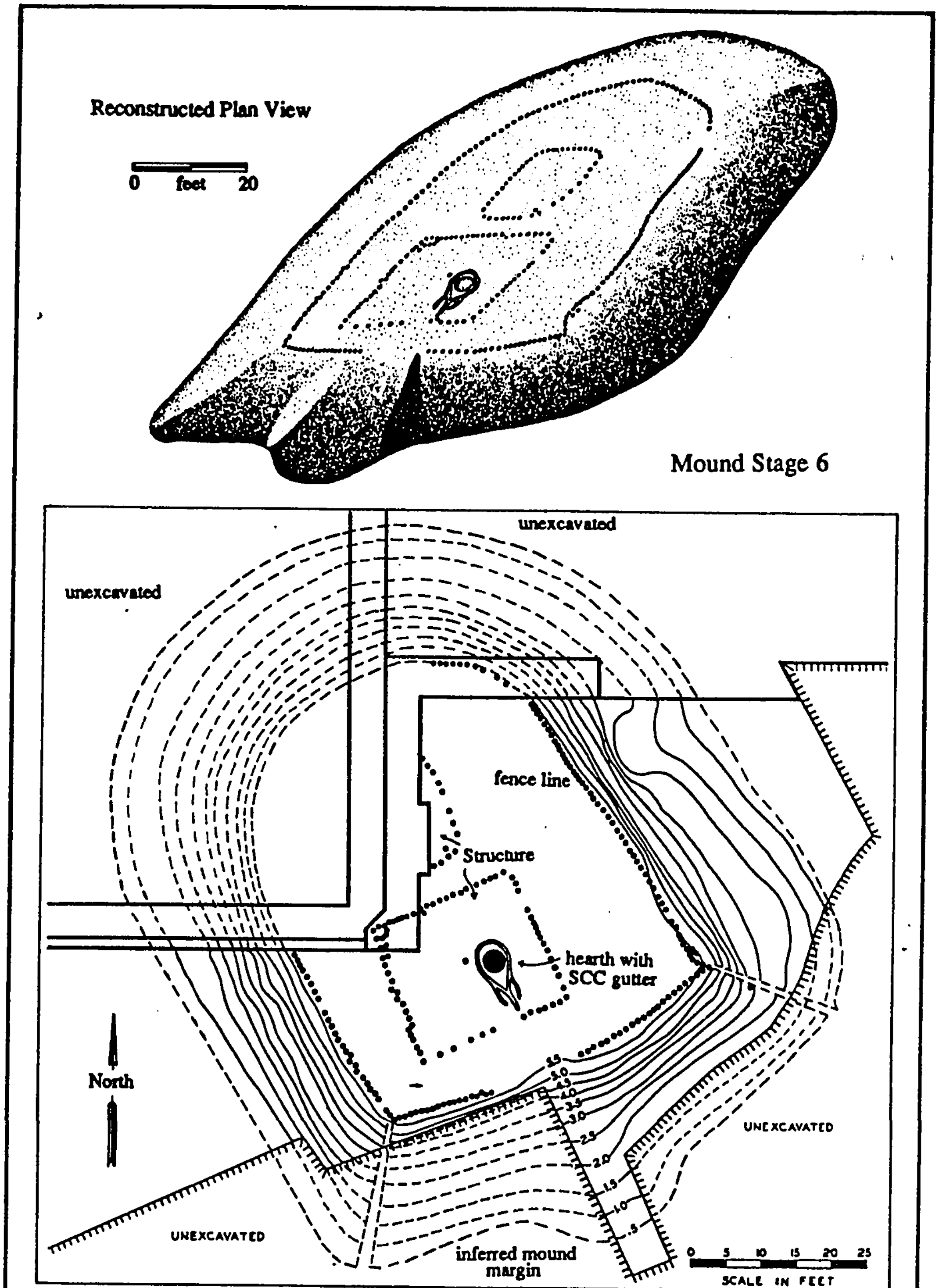


(Source: Caldwell and McCann 1941: 13,70)

Figure 31. Stage 5 in the Primary Mound at the Irene Site (9Ch1).

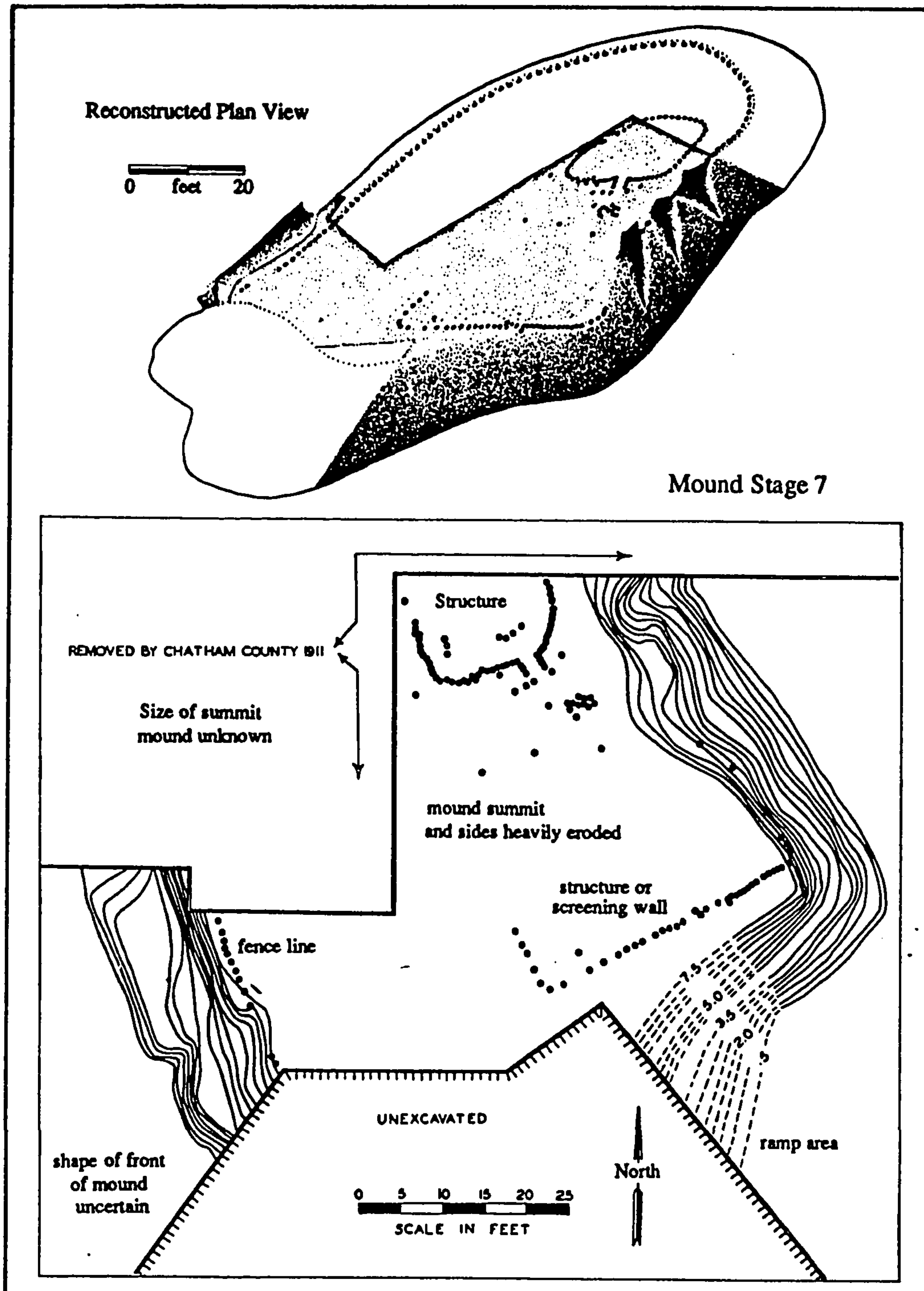
summit (Figure 32). Once again shell was placed on the sides away from the entrance. The entrance ramp, while larger than that for Stage 5 and built directly over it, lacked log steps. The summit had two central structures, one behind the other, and was almost completely enclosed by a palisade, with the only opening by the ramp. The first, southernmost building was 6.7 by 5.8 m and had a central fire basin and an elaborate surrounding gutter running to the entrance; in some ways this gutter resembles the forked eye motif common on engraved shell masks from the South Appalachian area (Smith and Smith 1989:13). While this may be a fortuitous association, three fragments of copper sheeting with repoussé decorations were also found nearby, suggesting ceremonial activities associated with the use of prestige goods were occurring on the summit.

Mound Stage 7 was appreciably larger than Stage 6, standing 2.9 m in height, and measured 25.9 m across at the base and 19.8 wide at the summit (Figure 33). Its length could not be determined, since portions of the northern side had been removed for fill. Two ramps were present, on the southeastern and southwestern sides, neither with log steps. Evidence for two structures and a palisade was found on the summit, although the defining post lines were eroded and fragmentary. The first structure, near the southeast ramp, was particularly poorly defined, consisting of little more than a line of posts 10 m long with a hint of two corners. The second structure, located in the northeast corner, was much better defined, and was squared with rounded corners and a projecting entranceway. Approximately 4 m on a side, it is essentially identical to but somewhat smaller than domestic structures observed in the Beaverdam and Rembert phase occupations at the Rucker's Bottom site in the Piedmont portion of the drainage. The summit and particularly the sides of the mound were extensively eroded, indicating it and possibly the site had fallen into disuse some time well prior to the construction of Mound Stage 8. While Plain, Cordmarked, and Check Stamped Savannah pottery was present, unlike the previous stages no evidence for Savannah Complicated Stamped



(Source: Caldwell and McCann 1941: 15,70)

Figure 32. Stage 6 in the Primary Mound at the Irene Site (9Ch1).



(Source: Caldwell and McCann 1941: 17,70)

Figure 33. Stage 7 in the Primary Mound at the Irene Site (9Ch1).

pottery was found on the Stage 7 occupation surface.

Mound Stage 8 differed appreciably from the preceding stages in a number of respects. At approximately 48.8 m in diameter it was much larger than the previous mounds, was circular instead of rectangular in shape, and had a rounded instead of a flat summit. Stage 8 partially covered the burial mound to the east, which appears to have been used primarily during the Savannah occupations. The presence of five Irene burials in the fill of the burial mound indicated it continued to see some use, however (Caldwell and McCann 1941:20). In the construction of Stage 8 shell was first placed over Stage 7, including two layers on the flanks. Sand was used as fill around and over the shell. Upon completion, the sides of the mound were capped with clay, except where they overlapped with the burial mound. The construction of Stage 8, which was 1.8 m higher, on the average, than Stage 7, required the movement of as much fill as in all the preceding stages combined.

The Burial Mound. The low burial mound to the west of the primary mound at Irene thus saw use during both the Savannah and Irene periods. In an pattern almost identical to that observed at the nearby Savannah II period Haven Home site (see below), initial activity involved the placement of cremated secondary burials in a central deposit of shell approximately 5.5 m in diameter and 61 cm thick (Figure 34). Five cremated burials were found below the shell, four with associated grave goods, including three unusually shaped Savannah Plain-like vessels, a clay elbow pipe, and a conch shell bowl. Two cremations were found in the shell lens itself, one in a Savannah Burnished Plain vessel. Except for one cremation found in the rotunda, these were the only burials of this type found on the site. The incidence of grave goods, occurring with five of the seven initial burials, was unusually high. Only one vessel was observed with the other interments in the mound, an Irene period infant urn burial.

A low sand-and-shell mound approximately 76 cm high and 16.8 m in diameter

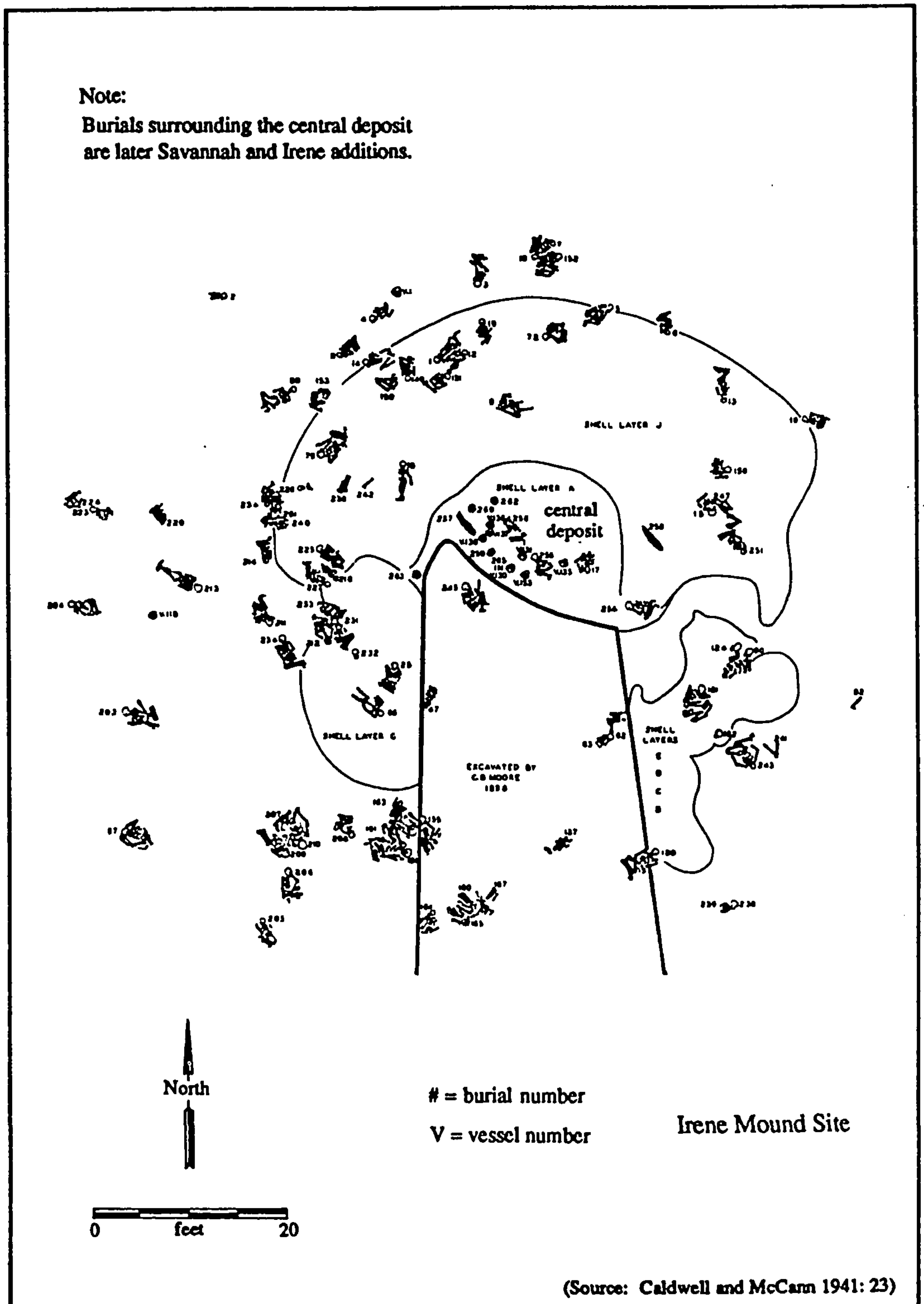


Figure 34. The Burial Mound at the Irene Site (9Ch1).

was built over the central shell lens in a number of discrete construction episodes, each with a seemingly associated cluster of burials located either in the fill or placed in the underlying subsoil prior to construction. The 99 burials that came from this accretional mound were predominantly primary or secondary interments, the great majority of which were flexed, with a lesser number disturbed or fragmentary (Caldwell and McCann 1941:24). Grave goods were rare, and were reported from only eight burials. One of these was an infant buried in an Irene Complicated Stamped urn, five were adults with varying but typically low numbers of shell beads, and one had a bone awl and a conch shell bowl (Caldwell and McCann 1941:22-24). Except for the infant burial, however, it was not possible to determine precisely the date of the remaining burials, although most are presumed to date to the Savannah occupation, given the existence of the Irene mortuary.

The Mortuary. An apparent mortuary dating to the Irene period was located on a low rise 25 m south of the primary mound. A semi-subterranean structure inset approximately 30 to 40 cm into the ground was in the central part of this complex, surrounded by two circular palisade lines (Figure 35). Approximately 7.3 m on a side, square with rounded corners, and with a pronounced wall-trench entranceway, this building resembled domestic structures found on Mississippian sites in the Piedmont portion of the drainage (Anderson and Schuldenrein 1985) and elsewhere in northern Georgia (Hally 1979, 1980; Smith 1981). No central hearth was found, arguing for a special function for the structure. The building had been destroyed by fire, as evidenced by burned roof debris over much of the floor and fired clay walls standing to a height of ca. 36 cm in several areas. Four burials, three flexed and the fourth an isolated skull, were found on the floor of the structure. One of the flexed burials showed signs of burning and may have been undergoing defleshing when the structure burned. Five Irene pottery vessels were also found on the floor, including two complicated stamped urns,

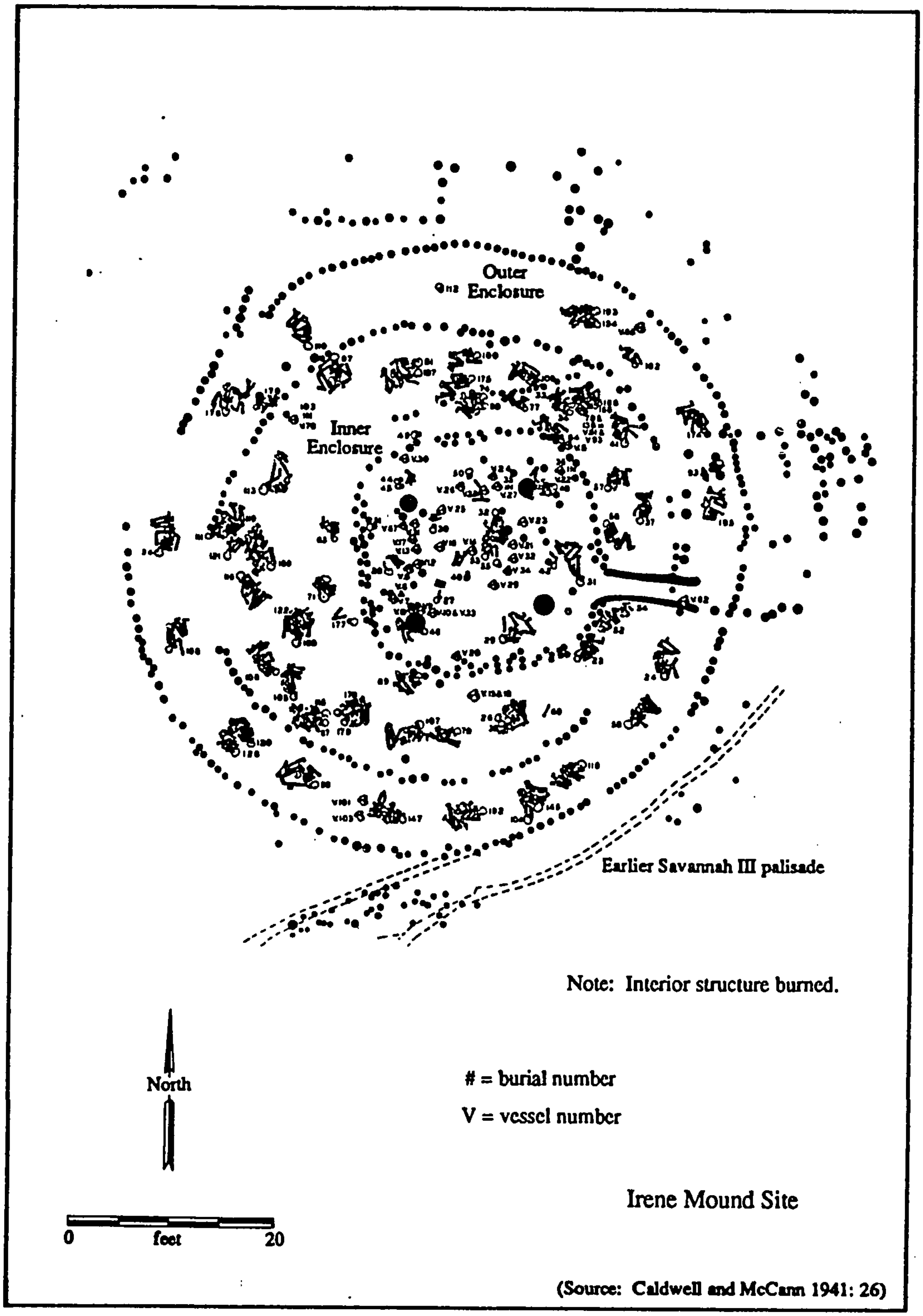


Figure 35. The Mortuary at the Irene Site (9Ch1).

one plain and one incised bowl, and one plain bottle. The presence of these vessels, the condition of the burials, and the presence of a small cluster of food refuse on the floor suggest the structure was in use when it burned.

The mortuary structure was covered over with a low sand mound soon after it burned. How far this mound extended beyond the structure could not be determined since it had been greatly reduced by plowing. Thirty-four burials were placed in the fill of this mound, 21 infants or children in urns, and the remainder flexed or fragmentary adult interments. In all, 25 Irene vessels were found in the mound, 21 Irene Complicated Stamped urns (filfot motif), two small incised (toy?) pots, and two plain bowls, one the cover of an urn burial. Excluding the urns themselves, only two of the burials had other associated grave goods. One infant had two small Irene Incised vessels inside its burial urn, and an adult located near the center of the mound was buried with five celts, four stone disks, two polished pebbles, and a incised schist plate. The death of this latter individual may have prompted the construction of the mound, and possibly the burning of the underlying structure.

The immediate area around the mortuary structure and the low mound that covered it was used as a cemetery, demarcated by two presumably successive circular enclosures ca. 13.7 and 18.3 m in diameter, respectively. No burials were found outside of these enclosures, supporting such an interpretation. The presence of a post from the inner enclosure inside the entranceway of the mortuary indicated, furthermore, that the enclosures had been built after the mortuary had been destroyed. Forty-one burials were found inside the inner enclosure, many near and oriented parallel to the wall. Most of these were flexed or fragmentary. Six double burials were present, three adult females with a child, two double burials of children, and one adult double burial. Only two urn burials were found, a double burial in two separate Irene Complicated Stamped urns. Nineteen of the 41 individuals were buried with grave goods, mostly isolated or small numbers of shell pins, gorgets, and beads, or bone awls. Twenty-three burials were found in the outer enclosure, two of which were double burials (both adult females with children), and one an isolated skull. Two possible infant/child burial urns were also found, both Irene Complicated Stamped vessels and one covered with an Irene Plain bowl, although no bone was noted. Five of these burials had associated grave goods, again simple inclusions of one or a few artifacts such as ear pins, points, awls, pipe bowls, or fragments of red ochre. Seven burials in the inner and ten burials in the outer enclosure were placed in clay-sealed pits.

The Rotunda. The remains of a probable council house or rotunda dating to the Irene period were found 27.4 m south of the primary mound, connected to it and enclosed by a large rectangular enclosure that had been rebuilt and expanded at least once (Figure 26). The structure was defined by six concentric rings of wall trenches and postmolds, the outermost 36.6 m across. Short breaks in the north side of the two outer circles probably served as entranceways, which would have faced the primary mound. The inner circles of posts represent either interior supports or, possibly, earlier building episodes. This latter interpretation is supported by fact that the smaller and presumably earlier enclosure surrounded only the inner three post rings, while the outer enclosure passed outside of all six. The council house was thus apparently originally much smaller, on the order of 18.3 m across, and later expanded in one or more construction episodes to its final 36.6 m diameter.

All of the ceramics found in the vicinity of the rotunda dated to the Irene period, and included complicated stamped, burnished plain, and incised wares. A trash dump consisting mostly of large ceramic fragments was found to the south of the building, all of it Irene material. These vessels are assumed to have been used in the rotunda; the absence of other midden debris suggested to Caldwell and McCann (1941:31) use in ceremonial activity, such as black drink consumption. The floor of the Irene rotunda had been badly eroded, precluding determination of the presence of a central hearth.

Fifteen Irene Complicated Stamped urns were found buried upright near the center of the rotunda, 10 with inverted Irene Plain or Irene Incised bowls over the top. All but two were empty; the exceptions included one with an infant skeleton and another with a plain water bottle. Whether the vessels were buried when the building was in use, or later, could not be determined. Their function is uncertain, although use in the preparation and storage of items like the black drink is possible. Caldwell and McCann's (1941:31) interpretation that these vessels originally held infants whose bones had since deteriorated is discounted, given the fact that 10 of the urns were covered. Seven burials were also found near the center of the building, five flexed, one cremated, and one of indeterminate arrangement. One of the burials was partially charred and another was missing its head, suggesting they may have come from the mortuary. The charred individual was the only one with associated grave goods, having been buried with nine small triangular points and three objects of worked stone. When these burials were placed here is uncertain, but is assumed to have been when the rotunda was in use.

Other Site Features. Numerous wall lines and enclosures were found at the Irene site (Figure 26). A series of small palisades surrounded the primary Savannah-period mound, beginning at least as early as Mound Stage 3, and after Stage 4 the summit itself was palisaded. At some point during the Savannah period a large semi-circular palisade approximately 150 m long and encompassing an area 110 m across was built, beginning near the river and encircling the platform and low burial mound. The age of this palisade can be inferred from the fact that it passes through the area later occupied by the Irene mortuary and rotunda, which had obviously not yet been built. Whether the palisade extended all the way to the bluff overlooking the river could not be determined. A large borrow pit, possibly created during the construction of Stage 8 in the primary mound, was present where the northern end would have been, and the later Irene rotunda was located at the southern end.

During the Irene occupation three squared enclosures were built to the southwest of the large mound, enclosing the area from it to and including the rotunda. This construction took place sometime after the completion of Stage 8 (Caldwell and McCann 1941:20). This enclosure was expanded twice, with the third and final fenceline built to accommodate the enlargement of the rotunda, which doubled in size. One or more palisade lines were also erected in the western part of the site, and appear to have formed a squared-to-circular enclosure 68.6 m across. Two small Savannah structures, an Irene structure and the Irene mortuary lay within this enclosure. While its age is unknown the fact that it runs near the outer fenceline of the Irene mortuary suggested to Caldwell and McCann (1941:34) that it dated to this period.

In spite of the large area examined at Irene, few domestic structures were found. Three Savannah, one apparent transitional Savannah/Irene, one Irene, and one structure of undetermined period were the only buildings other than the mortuary and the rotunda identified at the site (Figure 26). Of these, the six that could be assigned to a particular occupation had central fire basins and midden debris on the floor, and appear to have been domestic structures. The first Savannah structure, ca. 6.1 m on a side, was located south of the large mound; the second, a semisubterranean squared structure ca. 4.6 by 5.2 m in size with rounded corners and a wall trench entranceway, was located just west of the later Irene mortuary; while the third, a rectangular semisubterranean structure of indeterminate size, with two projecting wall trench entranceways, possibly from one episode of rebuilding, was located just outside the semicircular enclosure to the west of the burial mound. The transitional Savannah/Irene structure, identified by the presence of Savannah and Irene pottery with riveted nodes and other rim decorations appearing at the end of the Savannah period, was ca. 3.3 m on a side and was located about 25 m north of the primary mound. The Irene structure was square and ca. 6.1 m on a side and was located just west of the mortuary, having been built over the Savannah structure found in this area. The final structure, a rectangular arrangement of postmolds ca. 10.1 by 9.1 m in size, was located just north of the Irene structure in the western part of the site. No floor features were identified, and the function of this structure or, possibly, small enclosure, is unknown. Both the transitional Savannah/Irene and the Irene structures had burned.

Large numbers of isolated postmolds were found in the area away from the mounds, perhaps the remains of temporary structures erected by visitors congregating for ceremonial purposes (Caldwell and McCann 1941:69). The fact that extensive midden debris was found over the site area indicates it saw considerable use, even if it was not permanently occupied by a large number of people. A similar pattern was noted at the Beaverdam Creek Mound, in the Piedmont portion of the drainage, where the area surrounding the mound contained large numbers of postmolds but was notably devoid of identifiable structures. Forty isolated burials were scattered over the village area, most in shallow pits. Five contained simple grave goods that included a shell gorget, a bone fish hook, a stone disk, a point, and a clay elbow pipe. The 40 burials included 31 that were single and flexed, a double burial of an adult female and a child, one bundle burial, one partial burial (the upper body and skull of an adult male), and one that was fragmentary. Two adults were found flexed in deep, clay sealed pits. Finally, two burials of adult males, each extended with crushed skulls, were found near the southern margin of the large mound. Forty-two Irene vessels were also found scattered over the site, including 15 complicated stamped urns with plain or incised covering bowls. Burials were found in seven of the urns, six children and one adult. As with the burials, the urns were placed just below the surface.

The Human Skeletal Assemblage. A detailed and for the time anthropologically oriented analysis of the human skeletal remains from Irene was undertaken by Hulse (1941). In all, 265 burials were found, including 74 adult males, 75 adult females, 16 adolescents, 38 children and infants, and 62 skeletons of indeterminate age and sex. Hulse's analysis focused on well-preserved individuals in the Savannah/Irene burial mound, the Irene mortuary, and from all other site contexts. The low occurrence of children and adolescents at Irene, much lower than the expected incidence for a Mississippian agricultural community (Powell 1988:94-95; Weiss 1973), reinforces interpretations of the site's ceremonial nature, and indicates interment was typically reserved for important or full members of society. The even sex ratio, which persisted over all contexts, suggests a fair degree of equality in adult mortuary treatment, at least for those interred.

No significant differences in stature were observed in the skeletal samples, nor were there any observable differences in the incidence of cranial deformation, which was noted on 90% of the individuals (Hulse 1941:58-59). Hulse, employing a series of cranial measurements, argued that the population represented in the mortuary was more homogeneous than that in the burial mound, and that the samples from the two locations were themselves somewhat but not appreciably different. The presence of two differing groups of males was indicated in the burial mound sample, furthermore, while the females in this subsample were more homogeneous (Hulse 1941:59-62). He hypothesized that the variability observed in the burial mound sample was attributed to a pattern of exogamous marriage and matrilocal residence, that is, the in-marriage of males from outside the local community. As the local population grew, endogamous marriages became more prevalent, reducing the variability in the population (Hulse 1941:67-68). The skeletal sample from the site needs to be reexamined to evaluate these and other inferences.

The presence of an unusual dental anomaly in two individuals, one buried in the mortuary and the other in the burial mound, suggested genetic continuity between the occupations (Hulse 1941:67). Dental pathology in general was restricted to extreme wear in adults. Caries were rare, suggesting wild foods obtained by hunting and gathering rather than agricultural products formed the great bulk of the diet (Hulse 1941:60; see also Larsen 1983). A number of cases of osteomyelitis were observed, but on the whole the population was in good skeletal health.

Haven Home

In 1928 and 1929 Antonio J. Waring conducted excavations at the Savannah I period Haven Home burial mound (9Ch15) near Savannah, Georgia, a site shown on an early map of the city as the "Indian King's Tomb" (Waring 1968b). Waring, a medical doctor with a strong interest in archaeology, devoted much of his life to documenting the prehistoric cultural sequence in the lower Savannah River, an interest reflected in numerous publications and manuscripts (Williams 1968). The Haven Home mound at the time of excavation was circular and slightly conical in shape, and was between 1.8 and 2.4 m high and 22.9 in diameter (Figure 36). Two construction episodes were recognized. The initial mound was built over a large concentration of burned bone ca. 3 m in diameter and several cm thick. The presence of a communal ossuary was inferred since:

> the bone showed the typical checking and cracking seen when dry bone is burned, and we may therefore deduce that the bones of a series of individuals had their flesh removed and were saved either in a special mortuary house or in houses of individuals until the mound was ready to be started [Waring 1968b:212].

The burned bone lens was covered with a thin layer of sand and a 30 cm thick layer of oyster shell, which was in turn covered with earth. A thin soil horizon observed in the profile suggests this initial mound was in place for a number of years before the second episode of construction. A number of individual flexed burials were placed into this mound. The next mound level was a layer of earth more than a meter thick, and again a number of burials were placed within it.

Savannah Fine Cord Marked and Savannah Burnished Plain vessels were found

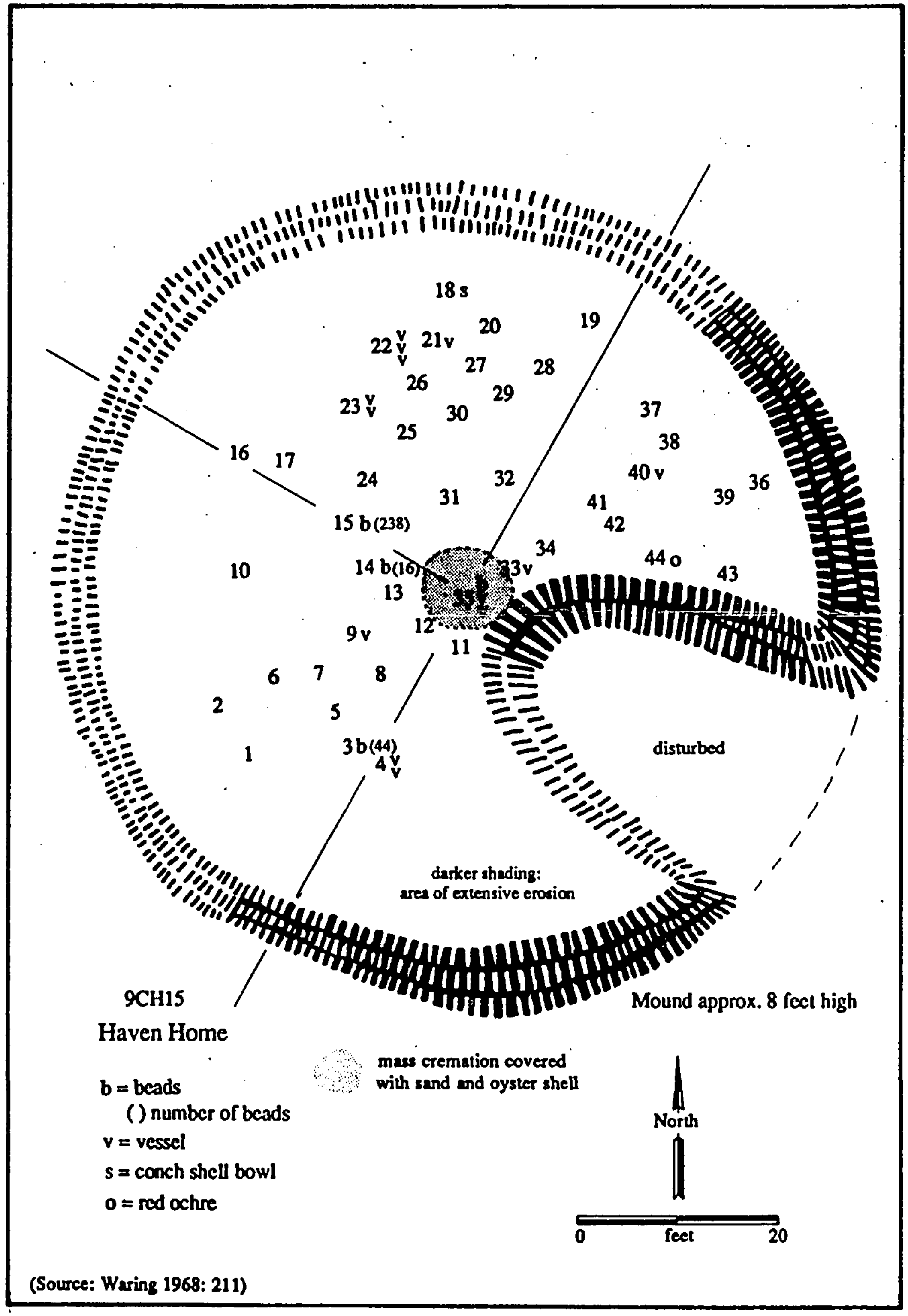


Figure 36. The Haven Home Burial Mound (9Ch15).

with several of the burials, indicating the structure dated to what Waring called the Savannah I phase. DePratter (1979:119) has since placed Haven Home within the St. Catherines phase (ca. A.D. 1000 to 1150). Few artifacts were found in the initial mass cremation, suggesting egalitarian communal treatment reminiscent of the Huron Feast of the Dead (Tooker 1964:134-140), if indeed all members of society were represented in the interment. Forty-four burials were recorded in the mound, including the central cremation. The subsequent burials were almost invariably flexed and covered with hematite, although two extended burials, both with vessels, were also found. The bones were in very poor condition and were not saved, but most appear to have been from adults. Approximately one-third of the burials had grave goods present; three burials had shell beads (16, 44, and 238 beads), eight burials had between one and three associated vessels (including two "boat-shaped" containers in the central cremation), and one burial had a conch shell bowl. Of 16 vessels described from the mound, eight were Savannah Burnished Plain (two apparently painted red or coated with ochre), five were Savannah Fine Cord Marked, two were "boat-shaped" and presumably plain, and one was described as red-and-black dog effigy pot. This later is unusual, and may point to contact with Mississippian cultures elsewhere in the region.

A shift from collective to individual interment is evident at Haven Home, and the uneven distribution of grave goods in the later interments suggests status differences of some kind existed among adults. Whether these status differences were personal, or point to the emergence of hereditary elites, that is, a pattern of incipient ranking, remains unknown. The site assemblage is important in that it documents changes that were occurring in the social environment of the populations living at the mouth of the Savannah just prior to the emergence of a demonstrable Mississippian way of life, as represented at Irene.

Hudson's Ferry Mounds

Two low, sand burial mounds were excavated by C. B. Moore (1898a:169-171) near Hudson's Ferry in Screven County, Georgia, some 110 km upriver from the mouth (Appendix A). The first mound (9Sc3) was 22.6 m in diameter and 75 cm high, and was completely excavated, with four burials found near the center of the mound. Two of the burials had been discovered prior to Moore's visit by a son of the landowner. The remaining portions of both of these burials were excavated by Moore, who found several associated artifacts, indicating the relative lack of care taken during the initial plundering. Three of the four burials Moore excavated had grave goods, including, respectively, two stone discoidals; a knobbed clay pipe and a mussel shell fragment; and a clay owl effigy pipe. The pipes, illustrated in Appendix A, are both almost certainly Mississippian in age. The knobbed pipe is identical to pipes found at other Mississippian sites in the drainage, including at Rucker's Bottom (Anderson and Schuldenrein 1985:Figure 10:68,d) and Irene (Caldwell and McCann 1941: Plate XVIII:f), and a similar bird effigy pipe was reported from the Hollywood mound (Thomas 1894:Figure 205). Based on these similarities, the burials are assumed to be of probable Savannah or early Irene affiliation.

The smaller mound, which has not been assigned a state site number, was 18.6 m across and 1.4 m high, and was located 1 km southeast of the first mound. Moore cut a trench 30 feet [9.14 m] wide through the center, but found only calcined fragments from what was apparently a single cremation. No other artifacts were reported, and the age of the mound remains unknown. Both mounds resemble the burial mounds at Irene and Haven Home in size and shape, and the artifacts from larger of the two are clearly of Mississippian affiliation. The excavations indicate that the use of low sand mounds for burial, a common feature on the coast, occurs some distance into the interior along the Savannah.

Red Lake

The Red Lake site (9Sn4) is a small double mound complex located on an old oxbow meander scar of the Savannah River (Figure 37). The site consists of two mounds, one 3 m and the other ca. 0.75 m high, located side by side near a bluff overlooking the river swamp. The site was examined in 1988 by Fred Cook and Mark Williams, who mapped the area around the mounds and opened two small test units on the northeast side of the large mound (Cook n.d.). There is no record of earlier archaeological work at the site, although a narrow trench had been opened at some time in the past on the east side of the mound. The assemblage that was recovered was dominated by Savannah Plain, Check Stamped, and Burnished Plain finishes, together with small quantities of Etowah and Savannah Complicated Stamped (nested diamond and concentric circle motifs), indicating the site was occupied during the Savannah II phase. The presence of two openings or inlets in the bluff below the mounds suggests the presence of paths down to the water or, alternatively, ditches like those at the nearby Lawton Mound group.

The Lawton Mound Group

The only major Mississippian center currently identified in the lower Coastal Plain portion of the Savannah is the Lawton Mound Group (38Al11), located in western Allendale County, South Carolina. Located on a terrace in a dense hardwoods swamp forest overlooking the river swamp, the site covers approximately three and a half acres and includes two flat-topped platform mounds and an associated village area surrounded by a fortification ditch and embankment (Figure 38). Analysis of collections indicates it was occupied for about two centuries from ca. A.D. 1150 to 1350, during the Savannah II and Hollywood phases. Lawton has seen limited archaeological examination, first in 1898 by C. B. Moore (1898a) and again in 1970 and 1989 by archaeologists from the

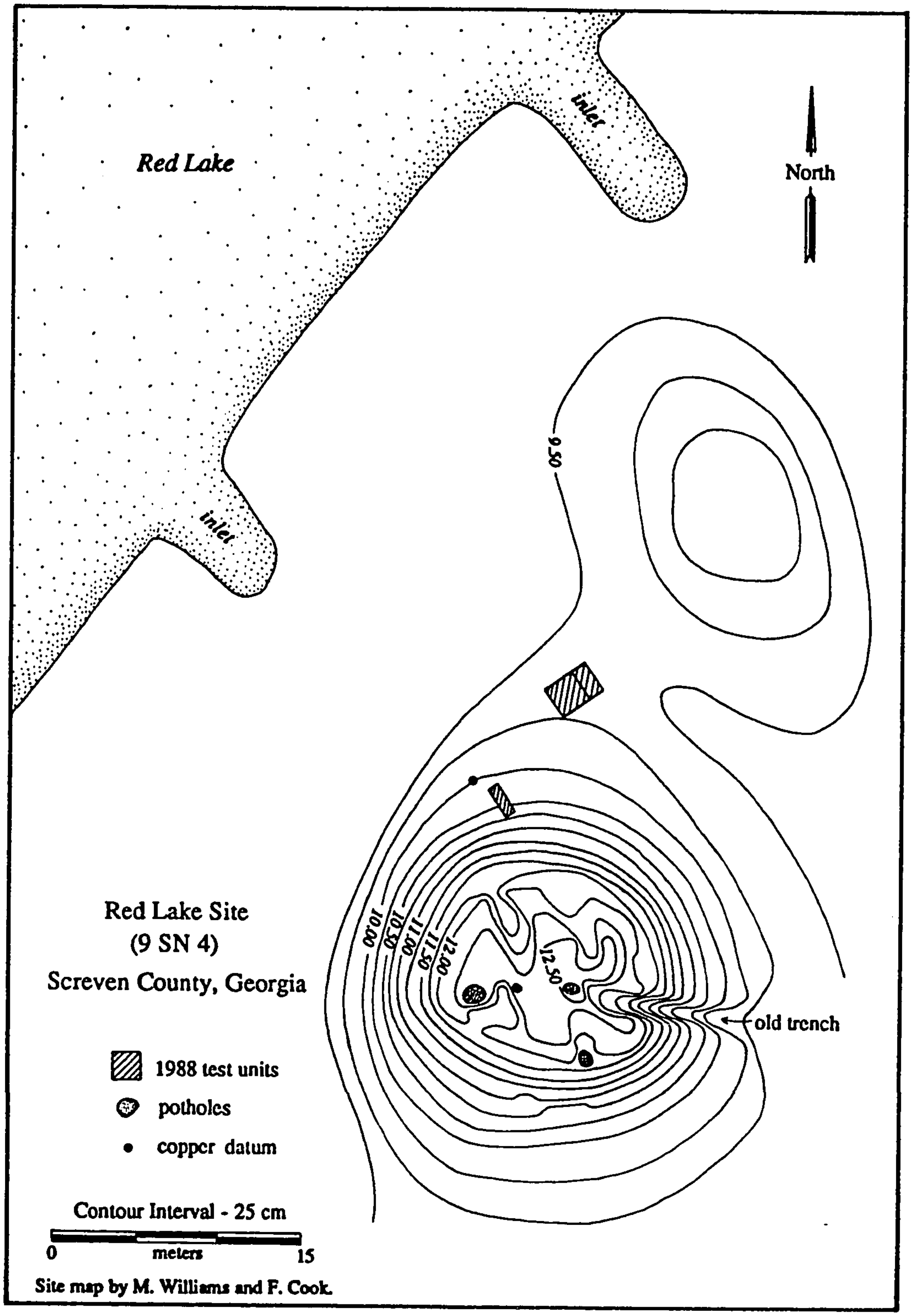


Figure 37. The Red Lake Mounds (9Sn4).

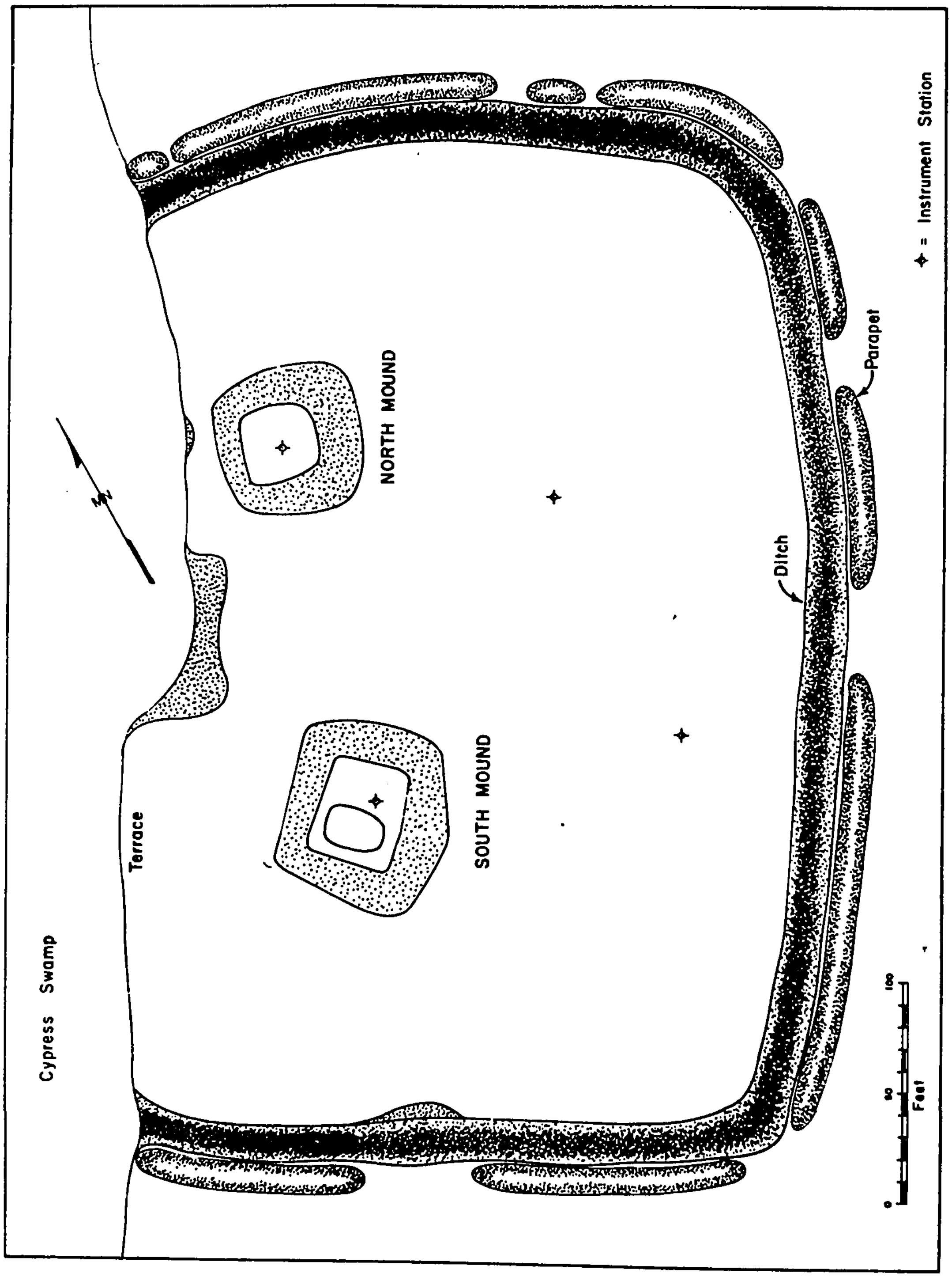


Figure 38. The Lawton Mound Group (38Al11).

SCIAA (Anderson n.d.b). Moore directed his 1898 effort to the north mound and, finding no burials, elaborate artifacts, or evidence for construction stages in the fill, soon abandoned work. In 1970 SCIAA archaeologists prepared a map of the site, cleaned up and profiled several potholes, and made a small artifact collection. Except for a brief reconnaissance in 1989, the site has seen no other professional investigation. The 1970 and 1989 investigations indicate the mounds were built in stages, and evidence for a wattle-and-daub structure was noted in the upper part of the south mound. Extensive midden debris was observed in the area around the mounds, indicating the area saw considerable use, and that domestic structures might be present. A detailed description of the site and the fieldwork conducted at it is given in Appendix A.

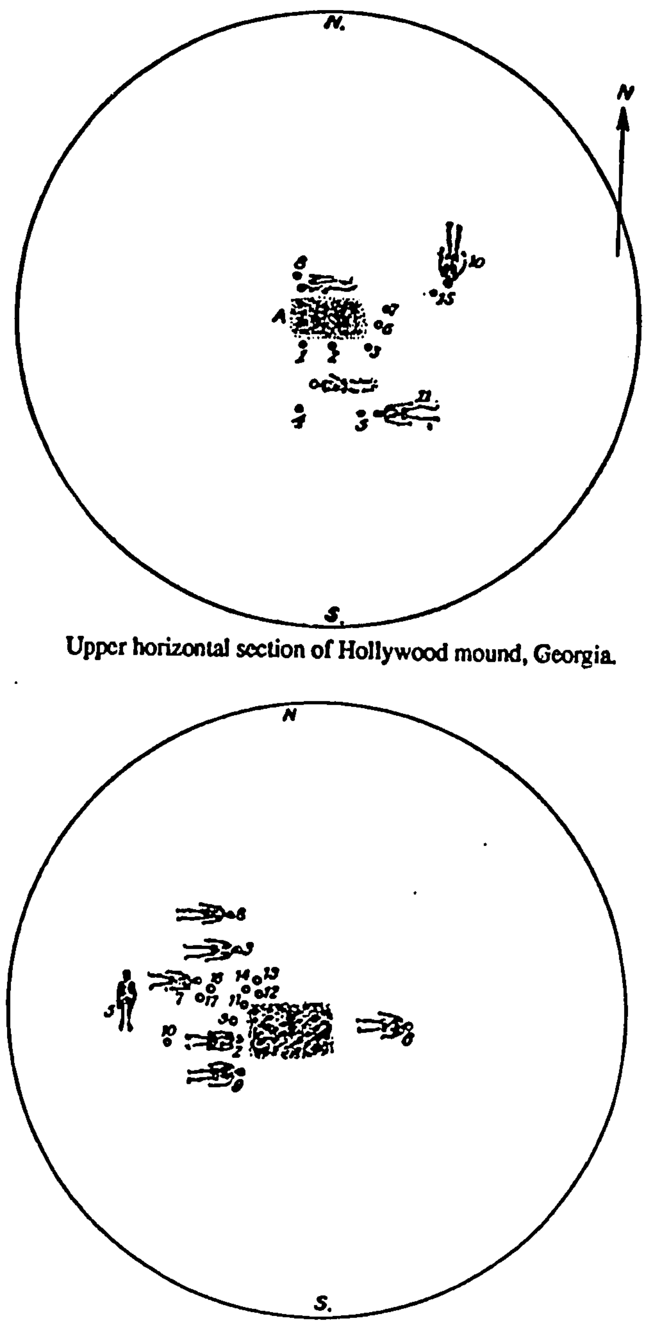
The ceramics from Lawton consist of Savannah Check Stamped, Plain, Burnished Plain, Fine Cord Marked, and Complicated Stamped (bullseye concentric circles motif), with corncob impressed and rectilinear Etowah-like complicated stamped finishes also noted. One rectilinear complicated stamped sherd was recovered with a possible Irene line block motif, and one of the check stamped sherds had a single row of circular cane punctations impressed parallel to and just below the rim, a Pee Dee-like attribute (Reid 1967). With the exception of the line block, all the artifacts are classic Savannah II and Hollywood phase materials, dating from ca. A.D. 1100 to 1350. The line block motif, if correctly identified, is an Irene decoration (ca. A.D. 1350 to 1450), and may indicate later Mississippian site use, although this remains to be confirmed. The Lawton ceramic assemblage appears identical to that collected in 1988 from the nearby Red Lake mounds.

Hollywood

The Hollywood site consists of two mounds and an associated village area located approximately 16 km below Augusta in Richland County, Georgia. In 1891 Henry L.

Reynolds of the Mound Division of the Bureau of Ethnology conducted extensive excavations in the smaller of the two mounds, and in 1965 De Baillou conducted test excavations in both mounds. Reynold's work, of unrivaled competence for the period (Waring 1968c:293), was described at length in the 12th Annual Report of the Bureau of Ethnology (Thomas 1894:317-326) (Appendix A), while a summary of De Baillou's work appeared in 1965 (De Baillou 1965). Reid (1965:25), in a comparison of ceramics from Hollywood, the Fort Watson/Scott's Lake mound in central South Carolina, and the Town Creek site, noted "striking similarities" between these assemblages. The Hollywood assemblage is characterized by nodes and punctations only (Reid 1965:21), suggesting a late Savannah III/initial Irene occupation, prior to the appearance of rosettes and appliqued rimstrips, which are common in Irene I assemblages. The incidence of check stamping at Hollywood is quite pronounced, accounting for just over 41% of De Baillou's mound A trench sample (De Baillou 1965:6). Only at Irene, where 22.6% of the primary mound sample was check stamped, has a comparable incidence been noted at a mound center along the Savannah River, although a high incidence of check stamping has been observed in the limited samples currently available from the Lawton and Red Lake sites. Check stamping is rarely observed in this quantity on Mississippian sites in the Piedmont portion of the drainage. For these reasons Hally has argued for the creation of a Hollywood phase to accommodate early/middle Mississippian assemblages along the central Savannah (Anderson et al. 1986:40-41; Hally and Rudolph 1986:62-63).

The 1891 Excavations in Mound B. At the time of excavation the small mound, Mound B, was 3 m in height, 21.3 m in diameter, and conical in form, and was located 85 m north of the large mound, Mound A. A small barn had been formerly located on it, protecting it from looting. Two major construction stages were documented by Reynolds, the earliest of which contained two groups of burials (Figure 39). The lower group of burials has been dated to the Savannah II/III period while the upper group



Upper horizontal section of Hollywood mound, Georgia.

Lower horizontal section of Hollywood mound, Georgia.

Note: Numbers refer to artifacts discussed in report (Appendix A).

(Source: Thomas 1894: 320, 321)

Figure 39. Mississippian Burials at the Hollywood Site (9Ri1).

belongs to the Savannah III/Irene I period; materials of a comparable age were found in the 1965 excavations, which focused on Mound A. Because of the transitional nature of the site assemblage, which includes elements of both the Savannah and Irene ceramic complexes, it has been given a discrete Hollywood phase designation, dated between ca. A.D. 1250 and 1350 (Anderson et al. 1986:40-41; Caldwell 1952:319; Hally and Rudolph 1986:62-63).

The lower stage of Mound B was 2.1 m thick and rested upon a rich premound midden deposit ca. 23 cm thick. The stratigraphically earlier burial group was found resting either on or just above a well-defined premound midden surface, near a large hearth ca. 3 m in diameter located just southwest of the center of the mound (Thomas 1894:319, 322-326). The hearth had four alternating layers of ash and fired clay, suggesting several discrete episodes of use. Seven adult extended burials were found, six to the west of the hearth and one to the east. Elaborate grave goods with classic SCC iconography were found with several of these burials.

The most elaborate burial in the lower stage was located due west of the hearth and had a number of highly unusual, nonlocal grave goods, including tripodal bottle with human effigy heads for feet, a bottle painted with a cross and sunburst motif, a seated human effigy pipe of soapstone, and five clay elbow pipes. Three other pots and a copper ax head wrapped in cloth and bark were found to the northeast. A second burial with unusual grave goods was found to the northwest of the first. Near the head of this individual were two vessels, one engraved with a plumed serpent motif. The design on this engraved vessel has affinities with Moundville vessels as well as vessels found at Spiro, with some specific design motifs exactly duplicated on artifacts found at the latter site (Phillips and Brown 1978:194-195). Under the engraved vessel were fragments of copper plates of "eagle dancers" and some mica and shell fragments, while under the other vessel was a biconcave quartz discoidal, underlain by two copper cloth and bark wrapped celts and several large pieces of mica.

The remaining five burials had less elaborate but still unusual grave goods. One had two groups of shell beads, a possible copper plated wooden earplug, and a lump of galenite. A second had a string of shell beads, a copper celt encased in wood, a *Busycon* columella, and a piece of glauconite. The columella may have functioned as a special status marker, since it is found with elite burials throughout the Southeast at this time level (Brown 1985). A third burial, found beside the individual with the elaborate painted vessels, was buried with a pipe. The fourth burial had an owl effigy pipe, three stone celts, five stone discoidals, a weathered shell ornament of some kind, an amorphous pebble, and a piece of glauconite. The final burial had a stone celt. The burial of these seven individuals at or near the base of the mound suggests a cohort, perhaps the founding elites at this center. Construction of the first major mound stage over these burials may have been deferred, in fact, until all the members of this group died. It is also possible that one or more of the interments may may have been retainers sacrificed upon the death of a chief. The burials with only single grave goods may be of this type.

Contemporaneity of interment cannot be assumed, however, even though all the burials were found in or within 45 cm above the premound midden. The multiple filling episodes in the central hearth may point to the existence of two or more episodes of earth-embanked structure or low mound stage construction that passed unrecognized in the 1891 fieldwork. This form of public construction was observed elsewhere in the valley at the Irene and Beaverdam Creek mound centers, and at Beaverdam Creek a high-status burial was found in fill between two episodes of construction (Rudolph and Hally 1985:83-85). The graves at the base of the small mound at Hollywood may thus represent a single episode of interment, or individual burials made over the course of one or more generations.

The later burial group was placed from 30 to 60 cm below the upper surface of the first mound stage, ca. 1.5 m above the earlier burials and about 1.2 to 1.5 m below the modern ground surface. Four extended adult burials were found, together with 13 vessels and a piece of copper plating with a repoussé figure on it (Figure 39). Because no burial pit outlines were recognized, the relationship of the artifacts to the burials is uncertain. The copper plate and two vessels, one inside the other, were apparently associated with two of the burials. Four sets of two vessels each were found together that appear to represent urn burials. Each apparently consisted of a large "killed" jar with a smaller pot or bowl inside. The four larger pots had been killed by breaking a small hole in the base, a practice observed at the contemporaneous Pee Dee phase Town Creek site in North Carolina (Reid 1965:23). The presence of small bone fragments in two of the Hollywood vessels suggest they were urn burials, like those reported from the Irene site. One of the urns was Pee Dee or Irene Complicated Stamped and was decorated with a filfot scroll motif, a double row of reed impressed punctations below the rim, and reed punctated nodes (Thomas 1894:Plate 19). As with the lower stage, the contemporaneity of these burials cannot be assumed. While all appear to date to the transitional Savannah/early Irene Hollywood phase, the interments may have taken place over several generations during this phase.

A hearth approximately 1.5 m in diameter by 60 cm deep was found in the center of the upper burial cluster. Three posts were found in a line near the edge of this hearth, and traces of fire were seen about one of the burials. The hearth and posts together with the occurrence of the burials and other artifacts at this level point to the existence of an upper mound stage, probably surmounted by a temple or mortuary structure of some kind. The traces of fire further suggest that this structure may have burned. The site, which dates to between ca. A.D. 1250 and 1350 on the basis of associated ceramics, was abandoned shortly after these burials were placed in the mound, given the absence of later

Mississippian or protohistoric Indian ceramics (Anderson et al. 1986:40-41; Hally and Rudolph 1986:62-63). The absence of unusual extralocal vessels, like those found in the lower stage, hint at a decline in the authority and influence of the elites in this Mississippian society. Minimally, their participation in long distance exchange appears to have declined markedly. The scattered Irene urn burials in this upper level may be somewhat later than the extended burials, which otherwise resemble the earlier interments. A situation like that observed in the primary mound at Irene may be occurring, with later, Irene I phase burials interred in what was formerly a residential/temple mound, as the society itself was becoming more egalitarian.

The upper "stage" or strata in Mound B at Hollywood was just over a meter thick. The presence of European pottery and wrought iron nails mixed in with Indian midden debris in the fill of the upper stage, which was of a distinctly different character from that in the lower stage, indicate that it is of historic origin, and probably associated with the construction of the historic barn on the summit. This conclusion is also reinforced by the presence of a drawing knife and a wrought iron nail at the juncture of the two stages, and the presence of glass and porcelain as apparent intrusions into the upper level of the lower stage.

The 1965 Excavations. In 1965 Clemens de Baillou (1965) conducted test excavations at Hollywood, with much of his effort directed to opening a 70 by 10 foot [21.33 by 3.05 m] trench running from the adjoining field to the southwest side of Mound A. This mound had been described by Reynolds as "of the pyramidal type", but even in 1891 was considered to be "almost entirely lost" due to flooding and the penning of cattle on its summit (Thomas 1894:318). Unfortunately, the dimensions of this mound have not been published, although it appears to have been about 30 m on a side and over a meter high. Approximately 1.5 m of historic alluvium was found to cover the field around the mound, indicating that comparatively undisturbed village or midden deposits may be present at the site. Possible post stains were noted at the base of De Baillou's trench away from the mound, but most were assumed to represent historic period disturbances. Savannah and Pee Dee-like pottery were recovered, with Savannah Plain, Check, and Complicated Stamped the most common types reported. A decline in check stamping and an increase in complicated stamping was noted in the trench level fill.

Two stages were identified in Mound A, and charcoal on the slope of the upper mound stage suggested that the structures atop it had been consumed by fire (De Baillou 1965:7). The inner mound was only about half the diameter of the final mound stage. The mound itself was resting on a premound humus with associated prehistoric midden debris. Two burials were found at the base of the mound, one associated with "a broken mortar and some unworked stones" (De Baillou 1965:9-10). The absence of elaborate grave goods suggest these may be relatively low status individuals, possibly commoners from a presumed nearby village area.

Two 10 by 10 ft [3.05 by 3.05 m] squares were opened in the area of the smaller mound that had been previously examined by Reynolds. The mound had been recently bulldozed by the landowner and was assumed to have been completely destroyed. Undisturbed mound fill, however, was found at a depth of about 1.5 m, about 30 cm above the premound midden. From this De Baillou (1965:11) concluded that the edges of the mound were intact and that future excavations directed to these surviving deposits would in all probability discover additional burials. De Baillou also recommended using heavy equipment to strip away overburden in the surrounding village area. Since 1965, however, no further work has been conducted at the site.

Mason's Plantation

The Mason's Plantation mound group may have been the largest Mississippian center in the Savannah River Valley. As best as can be determined from the surviving descriptions, six mounds were originally present at Mason's Plantation. Unfortunately, the site washed away late in the last century, and our only descriptions of it are all over a century old (Appendix A). The naturalist William Bartram (1791:315) visited the area in the mid-1770s, noting that "various monuments and vestiges of the residence of the ancients, as Indian conical mounts, terraces, areas &c" were located on the South Carolina side of the river near the Silver Bluff trading post. C. C. Jones apparently visited the site on several occasions in the 1860s and early 1870s and prepared a lengthy description as well as a map showing the location and size of the two largest mounds (Figure 40) (Jones 1873:148-157). When C. B. Moore was working in the valley in the winter of 1897/1898 he explicitly noted that of the six mounds observed by Jones "all have totally disappeared" and that, for this reason, "the archaeological examination of the Savannah river has been too long deferred" (1898a:167-168). Bartram, Jones, and Moore's accounts are given in Appendix A.

The Mason's Plantation site was thought by Swanton (1939:180-183; 1946:45) to have been the location of Cofitachequi, which was visited by DeSoto in May of 1540. Swanton's opinion was no doubt influenced by Jones, whose account included a romantic discussion of De Soto's visit and an impassioned plea as to the importance of the site. Because Bartram reported mounds near Silver Bluff, South Carolina, the Mason's Plantation mound group has become synonymous with Silver Bluff, and was assumed to lie nearby. Efforts to locate major Mississippian sites, mounds, or assemblages in the vicinity of Silver Bluff, however, have proven singularly unsuccessful through the years, to the point that one investigator concluded that the "archeological data does not support the traditional designation of Silver Bluff as the location of the village of Cofitachique" (Scurry et al. 1980:77).

As part of the present study, historic land plats from the area around Silver Bluff were examined at the South Carolina Department of Archives and History, to see if mounds or other Indian features had been recorded. None were noted, although the

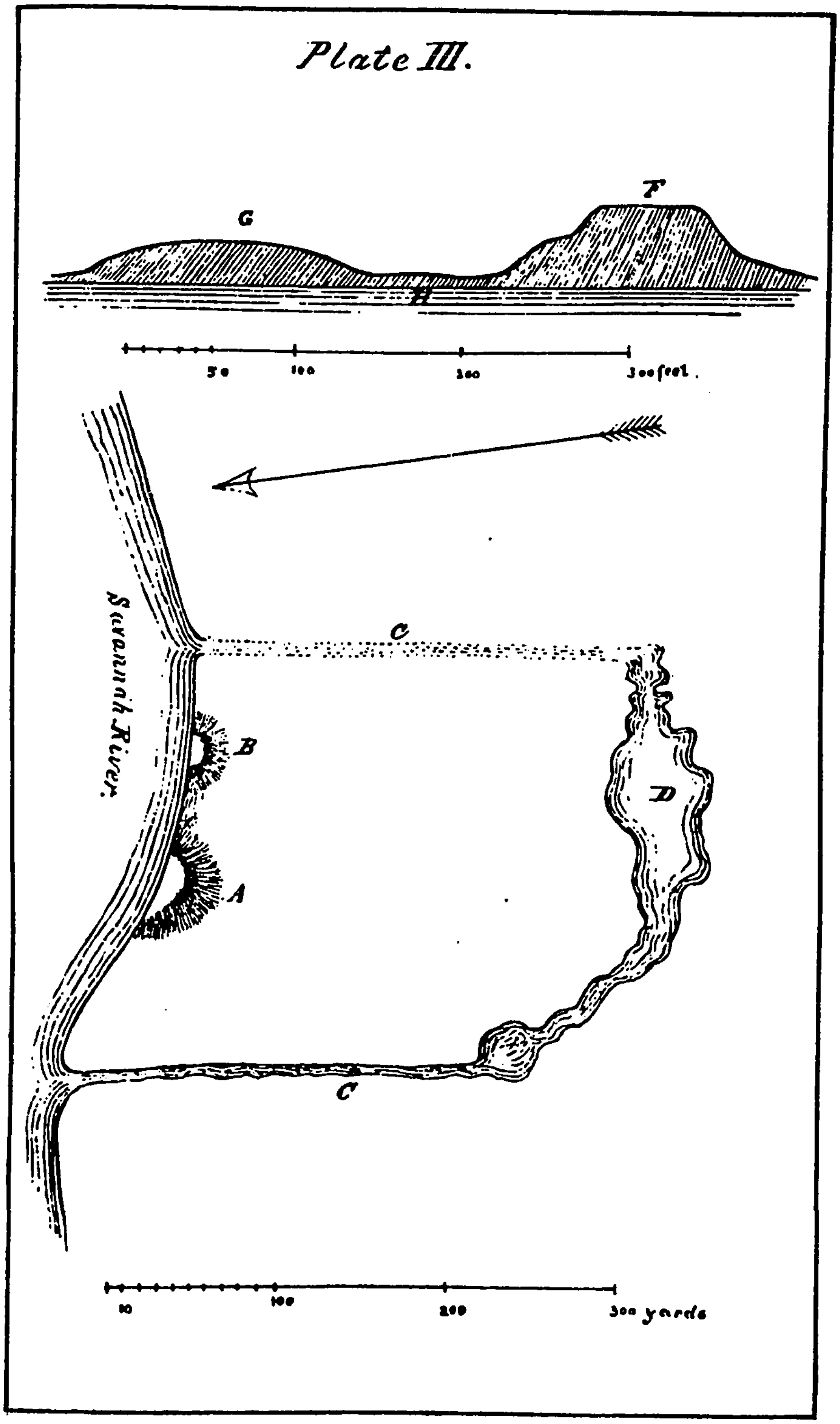


Figure 40. The Mounds at Mason's Plantation, As Reported by C.C. Jones in 1873.

Mason's Plantation land records themselves were quickly found. Interestingly, the tract proved to be several km north of Silver Bluff, just across and upriver from the Hollywood Mound. Its location at some distance from Silver Bluff goes a long way toward explaining the lack of success earlier investigators have had locating Mississippian occupations in the area. An 1853 navigation map of the Savannah River (Gilmer 1853) showing the location of three mounds on Mason's Plantation, in approximately the same location as reported by Jones, was found in late 1989 by Mr. Thomas Robertson of Augusta (personal communication: December 1989). This location will be examined in 1990 by the author and several other archaeologists from the SCIAA to see if any traces of the mound group or its presumably associated village survive.

As part of the present study, artifacts found on sandbars in the river at and below the presumed area of the site have been examined (Appendix D). These collections were dominated by Savannah III and early Irene motifs, suggesting a Hollywood phase occupation, if the ceramics indeed came from the former mound center. Given the extent of historic alluvium in the area where the site is suspected to lie (ca. 1.5 m, according to the current landowner), a program of deep site testing will probably be needed to confirm the location of the site, assuming portions of it have survived. Given recent arguments placing Cofitachequi on the upper Wateree River (Chapter III), the age of the Mason's Plantation group is a matter of some importance.

Rembert

The Rembert Mound Group was a cluster of five mounds located along the Savannah River in Elbert County, Georgia, just above the confluence of the Broad River. Occupied from ca. A.D. 1100 to 1450, Rembert was one of the largest Mississippian mound groups in the Savannah River Valley, with only the Mason's Plantation group below Augusta comparable in size. Limited archaeological investigations were conducted at Rembert in the 1880s and again in the 1940s before the site was inundated by the waters of Thurmond Lake in 1952. Rembert was first described by the naturalist William Bartram in May of 1775 and was revisited and described three separate occasions in the 19th century, by George White (1849:229-230), Charles C. Jones (1878:284-285), and John Rogan (Thomas 1894:315-317) (Appendix A). These early accounts are important since the site had been largely destroyed by flooding and agricultural practices by the early 20th century. Rogan's 1886 investigations, conducted under the auspices of the Mound Division of the Bureau of Ethnology, included archaeological testing of the two largest surviving mounds. While providing some indication of the stratigraphy in these mounds, this work is of greater value for its descriptive information about the number and size of the mounds that were present.

In 1948 limited test excavations were undertaken at Rembert by Caldwell and Miller as part of River Basin Survey salvage investigations associated with the construction of Thurmond Lake (Caldwell 1953). Unfortunately, by this time the large mound had been almost completely reduced, and no trace of the smaller mounds could be found. Eleven test pits were opened during a three-week field program at the site, two pits in and three near the surviving remnant of the large mound, and six others scattered over the surrounding area, in presumed village deposits. Much of the primary mound base was found to be intact, resting on an artifact rich premound midden (Caldwell 1953:312). The mound fill sloped downward toward the center of the mound, suggesting that it may have been built in a slight depression, or that the earliest construction stages may have been earth-embanked structures. Traces of the mound edge were found in the units opened to the north of the mound remnant, supporting early accounts that its original size was ca. 45 m in diameter. Artifacts were also found in four of the six test pits opened to the south of the mound, suggesting a large associated village area was present. Fired clay wall plaster was found in some units, indicating wattle and daub structures were present. Unfortunately, in spite of the preservation encountered in both the mound and village area, and the fact that additional excavations were recommended, no further work was conducted at the site.

The materials collected during the 1948 testing were reexamined by Hally in the early 1980s to form the basis for a late prehistoric Mississippian archaeological culture in the upper Savannah, the Rembert phase, dated to ca. A.D. 1350 to 1450 (Anderson et al. 1986:41-42; Rudolph and Hally 1985:453-459). Ceramics were dominated by plain and complicated stamping, the latter characterized by filfot cross, concentric circle, figure 8 and figure 9 motifs (see Figures 76 and 77 below). Bold incising, a hallmark of Late Lamar, was rare. Folded rims with notches, cane punctations, and finger pinching were fairly common, while unfolded rims were characterized by cane punctations, rosettes, or cane punctated nodes. The Rembert assemblage is similar to Early Lamar Duvall phase materials in the Oconee River Valley (Smith 1981) and to Hollywood/Irene I materials observed along the lower Savannah.

Mississippian occupation at Rembert appears to have begun sometime in the 11th or early 12th century and continued until some time in the 15th century. Sherds with ladder-based diamond motifs were present in the 1948 excavation sample that are either Woodstock or early Etowah Complicated Stamped (Caldwell 1953:317, Plate 56:p; Rudolph and Hally 1985:453). More traditional Etowah two-bar nested diamond motifs were also present, and Hally has suggested that the initial occupation assemblage is equivalent to the Etowah II phase in the Allatoona Reservoir, which has been dated to ca. A.D. 1050 to 1150 (Caldwell 1957; Rudolph and Hally 1985:456). A succeeding Beaverdam phase occupation is indicated by the presence of several Savannah Complicated Stamped, Check Stamped, and corncob impressed sherds. Unfortunately, as is the case with Mason's Plantation, the other large multi-mound group in the valley, our knowledge of Rembert is extremely limited.

Fortson

The Fortson Mound site (9Ws2) is located just south of Washington, Georgia, along Beaverdam Creek, a tributary of the Little River. The site is a single small mound approximately 3 m high and pyramidal in shape. In 1951 A. R. Kelly excavated a small trench into the mound, although unfortunately no field records survive from this work. The site was revisited in February 1987 by Daniel T. Elliott and Stephen Kowalewski (1987), who made a brief surface collection. The materials from Kelly's trench and the 1987 surface collection were examined during the present research, and diagnostic Connestee, Woodstock, and Savannah ceramics were identified (Appendix D). Most of the occupation appears to date to the Middle Woodland Connestee period and to the Savannah period. The presence of Savannah ceramics in Kelly's trench fill indicates the mound itself was constructed at this time, during the Beaverdam phase.

Beaverdam Creek Mound and Village

The Beaverdam Creek mound and village site was located on a broad floodplain overlooking Beaverdam Creek in the central Piedmont portion of the Savannah drainage, approximately 0.8 km from the confluence of the creek with the main channel. The site, which consisted of a small mound and ca. 1.5 ha adjacent village area, was occupied during the 12th and 13th centuries, when two superimposed earthlodges followed by four platform mound stages were erected. Extensive excavations undertaken in 1980 and 1981, during the Richard B. Russell Reservoir investigations, documented the mound's construction and use, while stripping at several locations in the village area exposed large numbers of features, including one structure (Rudolph and Hally 1985).

Field Investigations. The Beaverdam Creek site was first recorded by Hutto (1970:21-23), who noted that it had been extensively vandalized. A copper-covered celt was, in fact, later found in a pothunter spoil pile, indicating the carelessness of the looters. In 1971 Joseph R. Caldwell conducted an eight-week field school at the site, opening twelve 10 by 10 ft [3.05 by 3.05 m] squares in a trench through the mound. This work was hampered by vandalism and poor weather, and the badly disturbed deposits rendered interpretation difficult. A report on the fieldwork (Lee 1976), prepared after Caldwell's death, concluded that the site represented the largely destroyed remnant of a multistage Savannah period platform/burial mound. The site was revisited by Taylor and Smith (1978) who conducted shovel testing in the area around the mound, documenting the presence of a thin midden at distances of up to ca. 50 m from the mound, a deposit thereafter called the village area. In 1979 the site was revisited by archaeologists from Thunderbird Research Corporation who, in a limited testing program, found further evidence for intact feature and midden deposits southeast of the mound (Gardner et al. 1983:276-284).

During 1980 and 1981 the site saw extensive excavation by a team of archaeologists from the University of Georgia under the direction of James L. Rudolph and David J. Hally (1985). Mound excavations began by cleaning out Caldwell's trench through the mound, and cutting back the walls to expose new profiles. Cross trenches were then hand excavated along cardinal directions to further delimit the stratigraphy. Disturbed soil from potholes was removed by hand and with a backhoe. As the excavations proceeded, it became apparent that the mound orientation had shifted somewhat during construction. Diagonal trenches were opened as necessary to clarify the stratigraphic picture, and excavation proceeded by peeling back exposed construction episodes where surviving portions could be delimited. Following documentation of these stages, the backhoe was used to remove remaining mound fill, and a large area below the mound was shovel skimmed and mapped.

Village areas were examined using post hole tests, test pits, backhoe trenches, block excavation units, and machine stripping (Figure 41) (Rudolph and Hally 1985:46-51). Fifty-two post hole tests aligned on a 50 m grid, followed by 12 test pits ca. 1 by 2

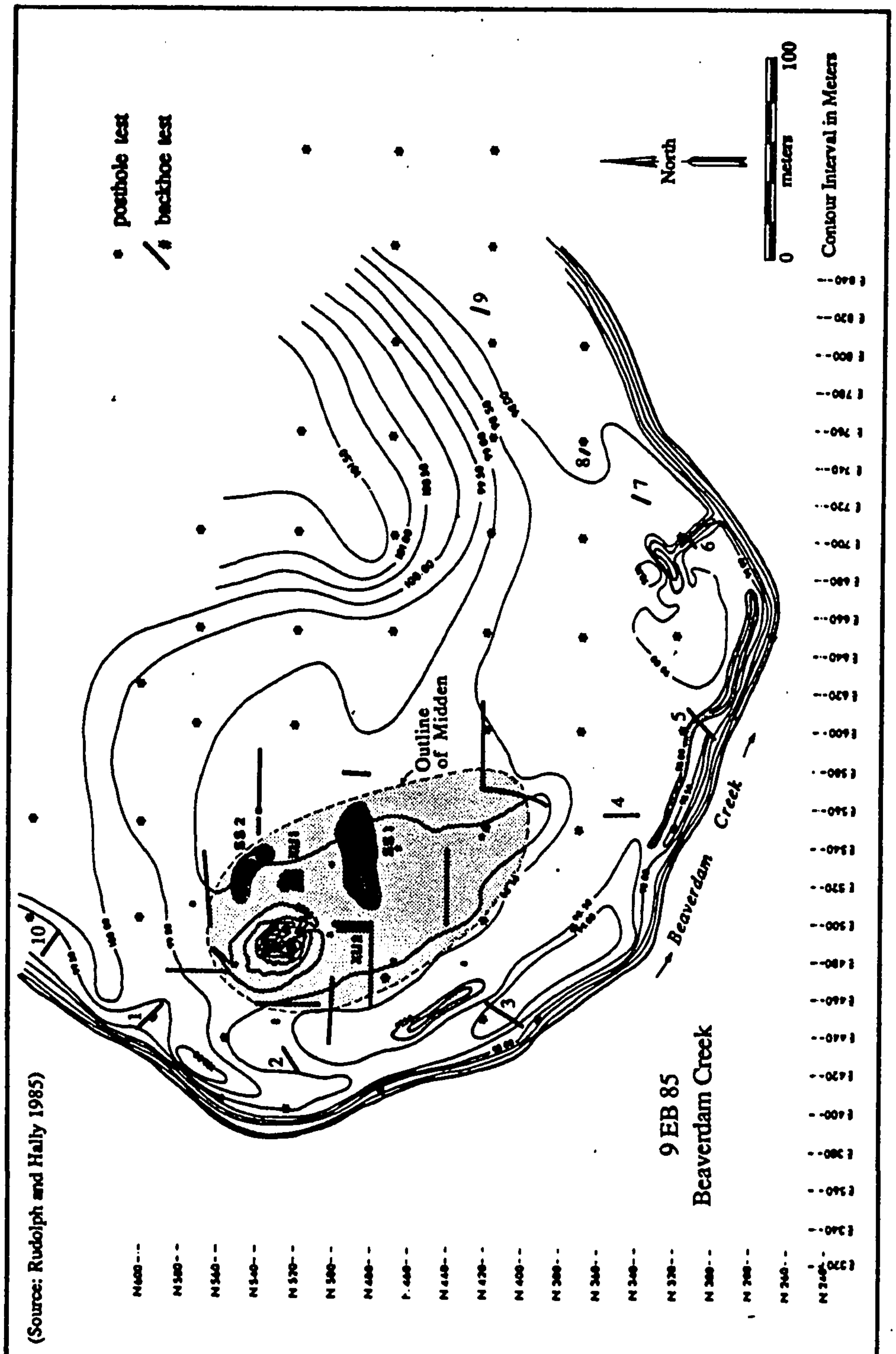
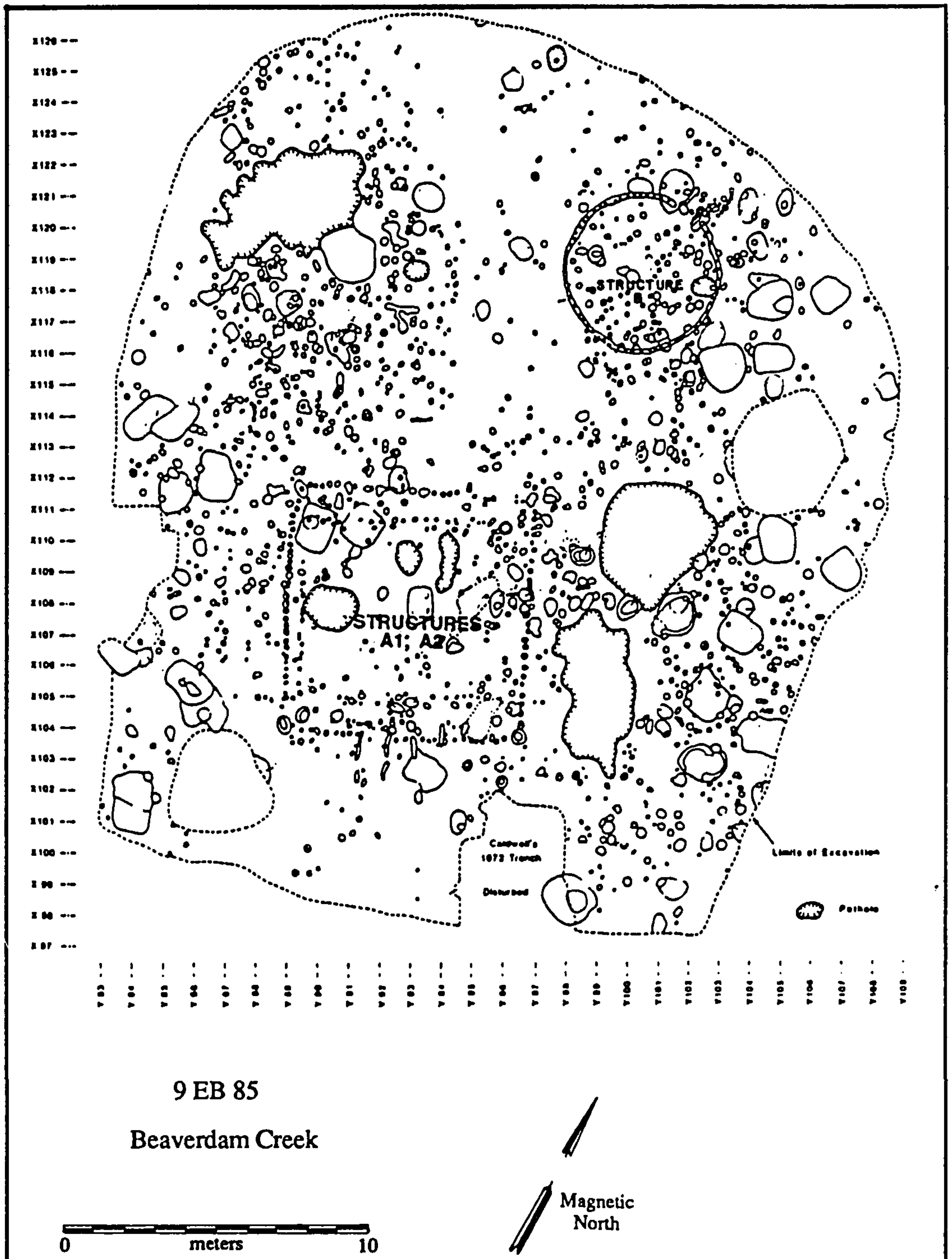


Figure 41. Excavation Units at the Beaverdam Creek Site (9Eb85).

m in extent and 10 backhoe trenches 12 to 46 m in length were opened over the site to delimit the extent of surviving midden deposits. Two large blocks were hand excavated in areas of apparent feature concentrations, following removal of overburden to the top of the midden with the backhoe. XU1, to the east of the mound, measured 10 by 13 m, while XU2, to the south of the mound, measured 6 by 20 m. A bulldozer and a motor grader were then used to remove the overlying plow zone and midden from two other areas. In SS1, southeast of the mound, an approximately 1380 sq. m area was examined, while in SS2, to the east of the mound, a 212 sq. m area was examined. All fill from hand excavated mound and village contexts was processed using 1/4-inch [0.63 cm] mesh, with flotation samples taken from feature and midden areas.

Mound Construction Episodes. Two superimposed earthlodges and four successive mound stages were documented during the excavations (Rudolph and Hally 1985:69-197). The premound midden was from 15 to 20 cm thick, and was contiguous with the village midden surrounding the mound. Several burial pits, portions of three structures, and a large number of miscellaneous postmolds were found on this surface, representing occupations at the time of and immediately prior to the construction of the mound (Figure 42). Many of the premound features appeared to be contemporary with the first ceremonial structures erected at the site, and with the initial stages of mound construction. Two uncorrected radiocarbon dates obtained from features in premound context were 1620±100 BP [calibrated AD 420; Stuiver and Pearson 1986:833] (DIC-2118) and 760±200 BP (BETA-1791) [calibrated AD 1265; Stuiver and Pearson 1986:828]; while the first date was too early, the second was thought to date accurately the period of initial mound construction (Rudolph and Hally 1985:75).

The first two mound structures were surrounded by earth embankments. The first, structure A1 (Figure 43), was square, 7.5 m on a side, covered an area of 56 sq. m, and had a wall trench entranceway on the south side. It was built of individually set



(Source: Rudolph and Hally 1985: 77)

Figure 42. Premound Features at the Beaverdam Creek Mound Site (9Eb85).

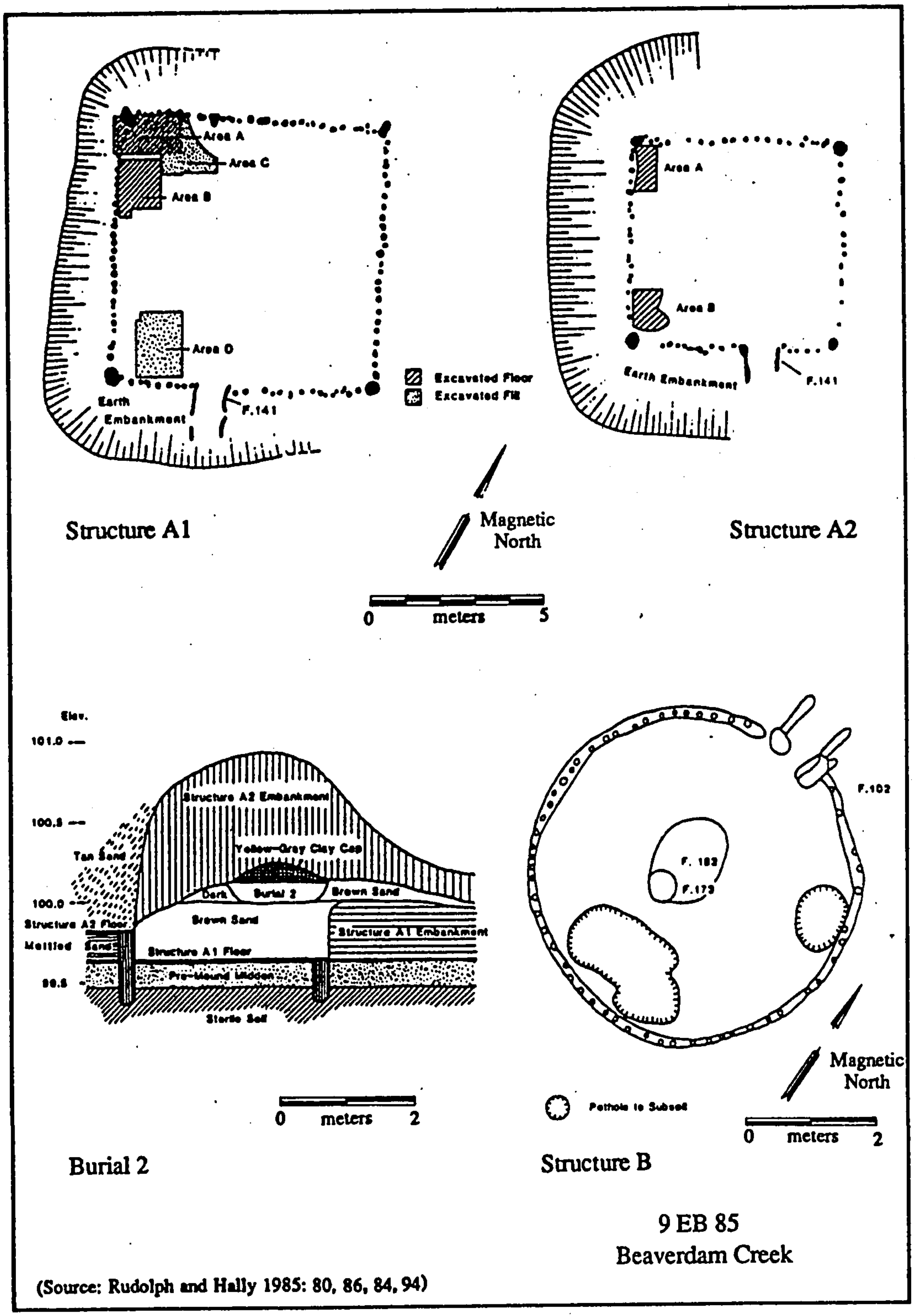


Figure 43. Structures A1, A2, and B, and Burial 2, at the Beaverdam Creek Mound Site (9Eb85).

posts 10 to 15 cm in diameter and spaced 10 to 30 cm apart, with appreciably larger corner posts ca. 30 to 60 cm in diameter. The embankment itself was ca. 1.7 to 1.8 m wide, and was constructed of midden fill to a height of from 40 to 70 cm above the ground surface. It was erected flush with the wall line, after the posts had been set in place. The floor of the structure was highly disturbed, but had been elevated ca. 10 cm above the premound midden. Lithic, ceramic, bone, and other refuse was found on the upper surface, suggesting occupational debris. The only feature found on the small amount of intact floor examined inside the structure was a dense concentration of fish scales and bone in the northwestern corner. The structure was not burned or abandoned, but appeared to have been quickly replaced.

A high-status male aged 30 to 35 years was found buried in fill above the Structure A1 embankment (Figure 43). This individual was interred with approximately 7000 shell beads, a whelk columella, several *Olivella* shells, two copper covered ear spools and a crescent-shaped copper head ornament, and a shell gorget and button (Rudolph and Hally 1985:83-85). The burial was placed in an basin shaped pit covered with a yellow clay cap, with the embankment for Structure A2 built over it. The number and extent of the associated grave goods indicate this individual occupied a very high status position in the local society, and his death may have triggered the abandonment and rebuilding of the initial earth-embanked structure.

Structure A2 resembled Structure A1, although it was smaller, measuring 6.2 m on a side (38.4 square m) (Figure 43). Oriented the same direction as Structure A1, with a wall trench entranceway to the south. the building differed primarily in having a more massive embankment, from 2.2 to 2.7 m wide, and 1.25 m high. The floor of the structure was raised above the fill over Structure A1 by a thin layer of mottled grayish brown sand up to ca. 15 cm thick. Two successive occupation surfaces were found above this layer, separated by a thin band of charcoal flecked sand, suggesting an episode of cleaning and minor restoration. The floor areas of these structures were badly disturbed, and no features other than a sherd cluster and some lumps of gray ashy clay were found on these surfaces. Structure 2 did not burn, but appeared to have been abandoned for no more than a short period of time, and was then replaced by a platform mound. Waterlaid sands around the northern side of Structure 2 indicated it may have been inundated and damaged.

A small circular wall-trench building, Structure B, was found to the north of Structures A1 and A2 (Figures 42, 43). The age of this building in relation to the other early structures in the premound area is uncertain, although it predated Mound Stage 3, which covered it. The building was 5 m in diameter with a floor area of 18.8 square m, and had been built on a layer of tan-gray sand placed on top of the premound midden to level it out. The wall trench was about 30 cm wide and 54 cm deep, tapering to 10 cm wide at the base. Fifty-six postmolds ca. 8 cm in diameter and spaced 15 to 20 cm apart were found in the trench fill; posts that were sectioned were found to have been jammed into the base of the trench. A wall trench entranceway 1 m wide and 0.8 m long was found on the north side of the building. The inside of the structure had waterlaid sand over the floor, suggesting it was flooded after abandonment, or that the flooding had prompted abandonment. A prepared clay hearth with a pronounced rim was found just west of the center of the structure, while the floor had a moderate amount of occupational debris on it. Other than three battered crystal fragments, a single small bead, and a small piece of mica, however, no unusual artifacts indicative of ritual or ceremonial behavior were found. In spite of its unusual shape and location near the ceremonial structures, Structure B appears to have been a domestic building. Given the absence of evidence for burning, Structure B was probably dismantled prior to the construction of one of the nearby earth-embanked structures or the early mound stages overlying it.

Structure A2 was replaced with a platform mound, termed Mound Stage 1, that was raised approximately 20 cm higher than the embankment (Figure 44). The stage was very badly disturbed, with only traces of the northwestern corner found intact. Measuring an estimated 17 m east-west by 14 m north-south, the platform was oriented the same direction as the two earthlodges, with the northern side facing 24 degrees west of magnetic north. Fill was basketloaded sand or sandy clay. Two possible structures were found associated with this stage, a hard-packed floor-like surface, and two lines of posts that had been found in the 1971 excavations. Charcoal obtained from the hard-packed floor yielded an uncorrected date of 800±80 BP (BETA-1792; Rudolph and Hally 1985:113) [calibrated AD 1245; Stuiver and Pearson 1986:828].

Waterlaid sand mixed with clay and ash found around the base of Mound Stage 1 was thought to represent burned material washed down from the summit. Whether this meant the summit structure for Mound Stage 1 was abandoned or burned prior to rebuilding is unknown. Above the waterlaid sands was a gray ashy layer from ca. 1 to 28 cm thick that was rich in pottery, bone, and other debris, including a number of pine log fragments. An uncorrected radiocarbon date of 740±55 (DIC-2119; Rudolph and Hally 1985:119) [calibrated AD 1270; Stuiver and Pearson 1986:828] was obtained from one of the unburned pine pieces. The logs and the rest of the debris in the gray ashy layer were interpreted as debris from the mound summit, rather than steps or a facing like that found covering Stage 1 of the Tugalo mound (Rudolph and Hally 1985:119). Given the excellent faunal and floral preservation in the gray ashy layer, it was probably covered soon after deposition by Mound Stage 2 (Rudolph and Hally 1985:126).

The summit of Mound Stage 2, like Mound Stage 1, had been largely destroyed by pothunting, and no evidence for structures was found (Rudolph and Hally 1985:122-129). The mound was composed of dark red clay and rose approximately 13 cm higher than the highest point on Stage 1. The sides of Stage 2 were steep and furrows were evident in the red clay face, suggesting intentional roughening. Three of the corners were

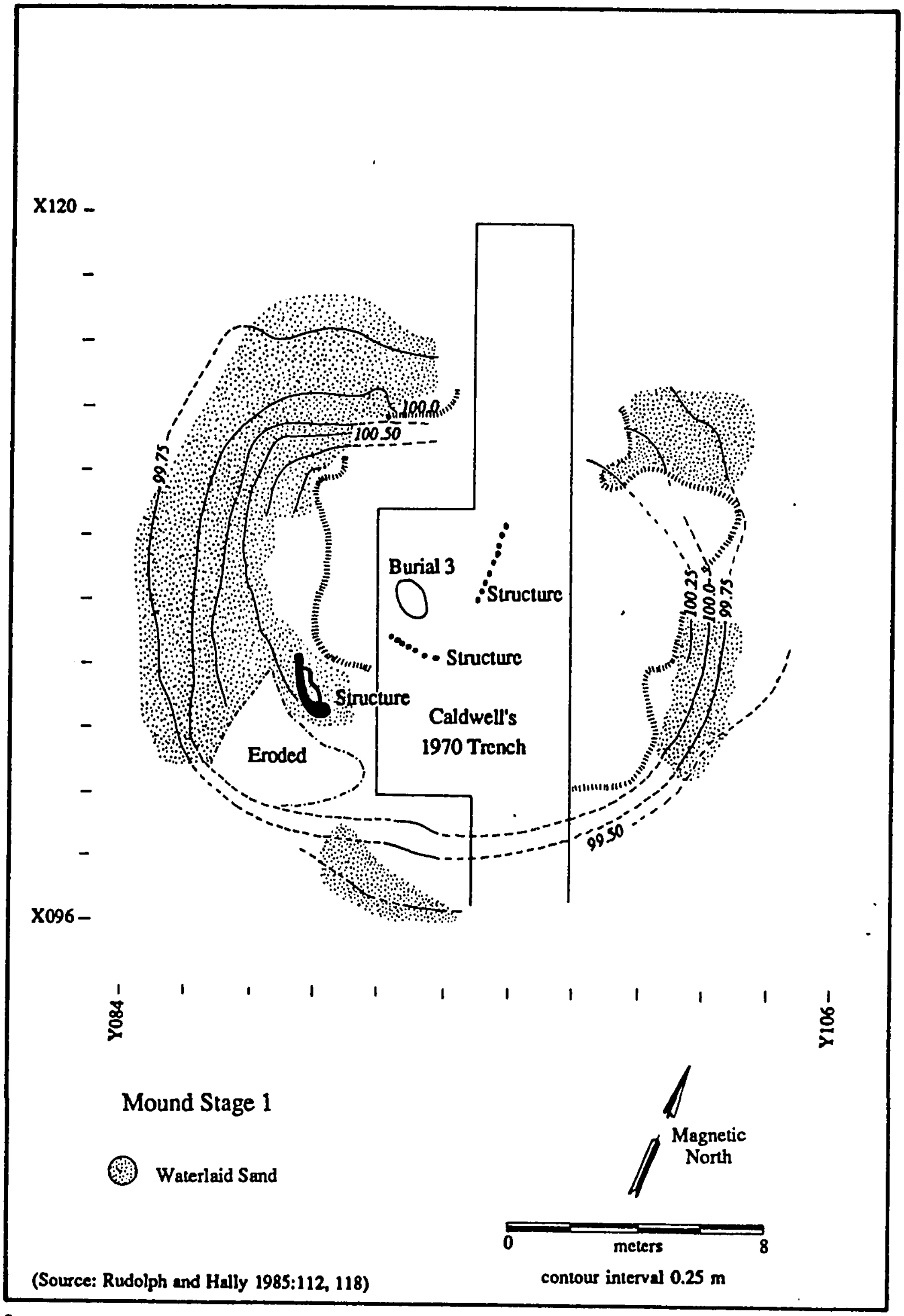


Figure 44. Mound Stage 1 at the Beaverdam Creek Mound Site (9Eb85).

still intact, permitting measurements of size and orientation. The Stage 2 mound measured approximately 18 by 18 m and was oriented 13 degrees west of magnetic north, a shift in orientation of about 11 degrees from the earlier stages and structures (Figure 45). A ramp 2.25 m wide with step remnants cut into the clay was built on the northwest corner of the mound, facing directly on Beaverdam Creek. The shift in mound orientation may have been to accommodate this alignment (Rudolph and Hally 1985:125).

Later mound stages were progressively more heavily disturbed. Mound Stage 3 measured approximately 21 m on a side, and appears to have been at least 12 cm higher than Stage 2 (Figure 46). The orientation of the mound itself could not be determined due to disturbance and spreading of the lower sides, but a fragmentary wall line from a structure on the summit was oriented 11 degrees west of magnetic north, almost exactly the same direction as Mound Stage 2. The summit structure was represented by two wall line fragments and a small patch of floor surface. The floor was a thin layer of tan clay about 6 cm lower than the surrounding summit. The wall trenches were filled with red and yellow clay, with the constituent posts ca. 10 cm in diameter and spaced 5 to 20 cm apart. A small bracing log was placed at the base of the wall trench to provide support for the uprights. Some of the posts were charred, indicating the structure had burned. Waterlaid sands were found on the north side of the mound, suggesting sheet wash from the summit. On the southeastern side of the mound a dark midden layer was found, with lenses indicating at least two or more episodes of deposition occurred. Whether this reflected normal trash discard from the summit or debris from the destruction of a structure could not be determined.

Mound Stage 4 was very poorly preserved, and was apparently no more than a few cm in height above Mound Stage 3, and about the same overall size (Figure 47) (Rudolph and Hally 1985:136-142). Fragments of a wall trench structure found on the

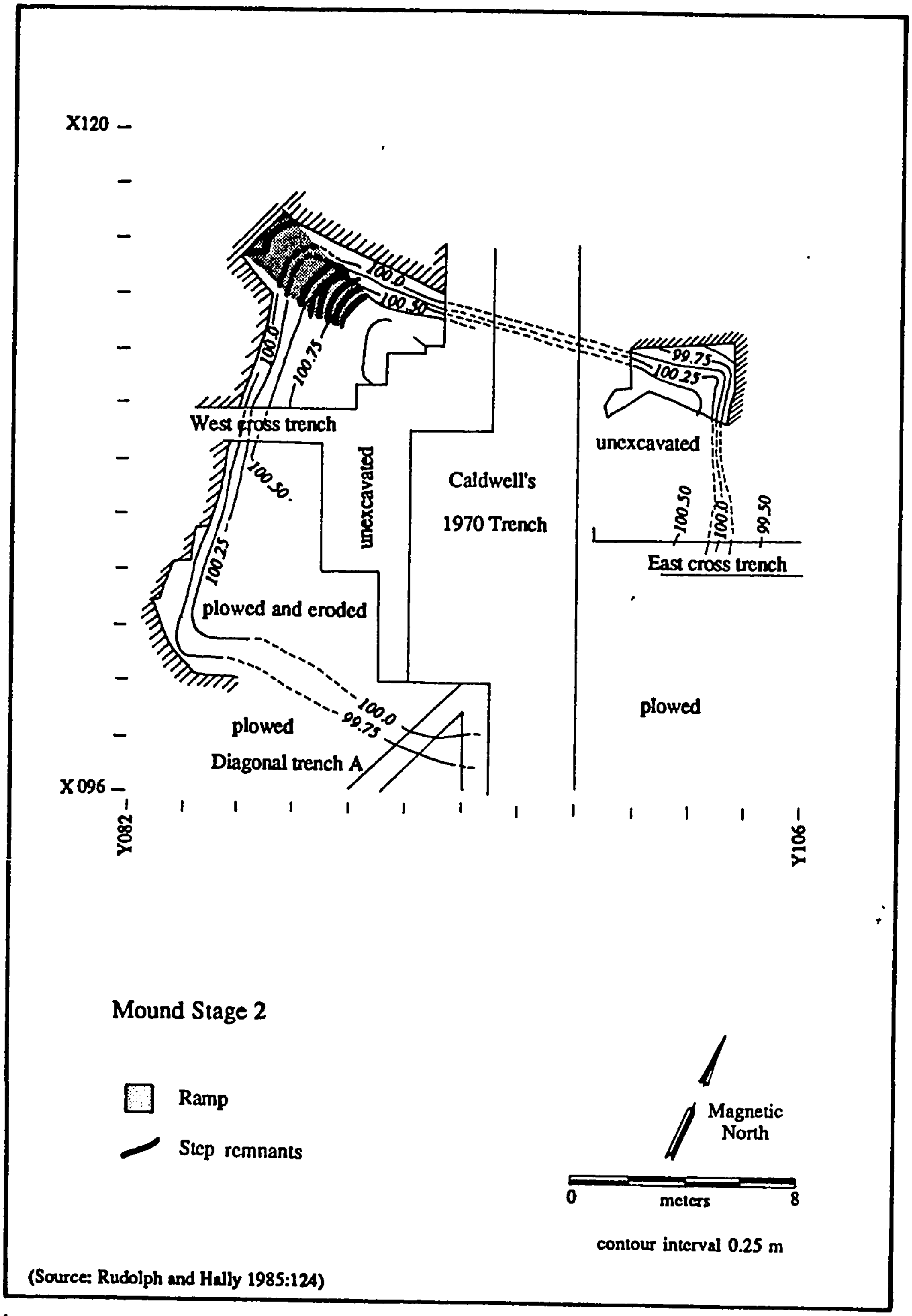


Figure 45. Mound Stage 2 at the Beaverdam Creek Mound Site (9Eb85).

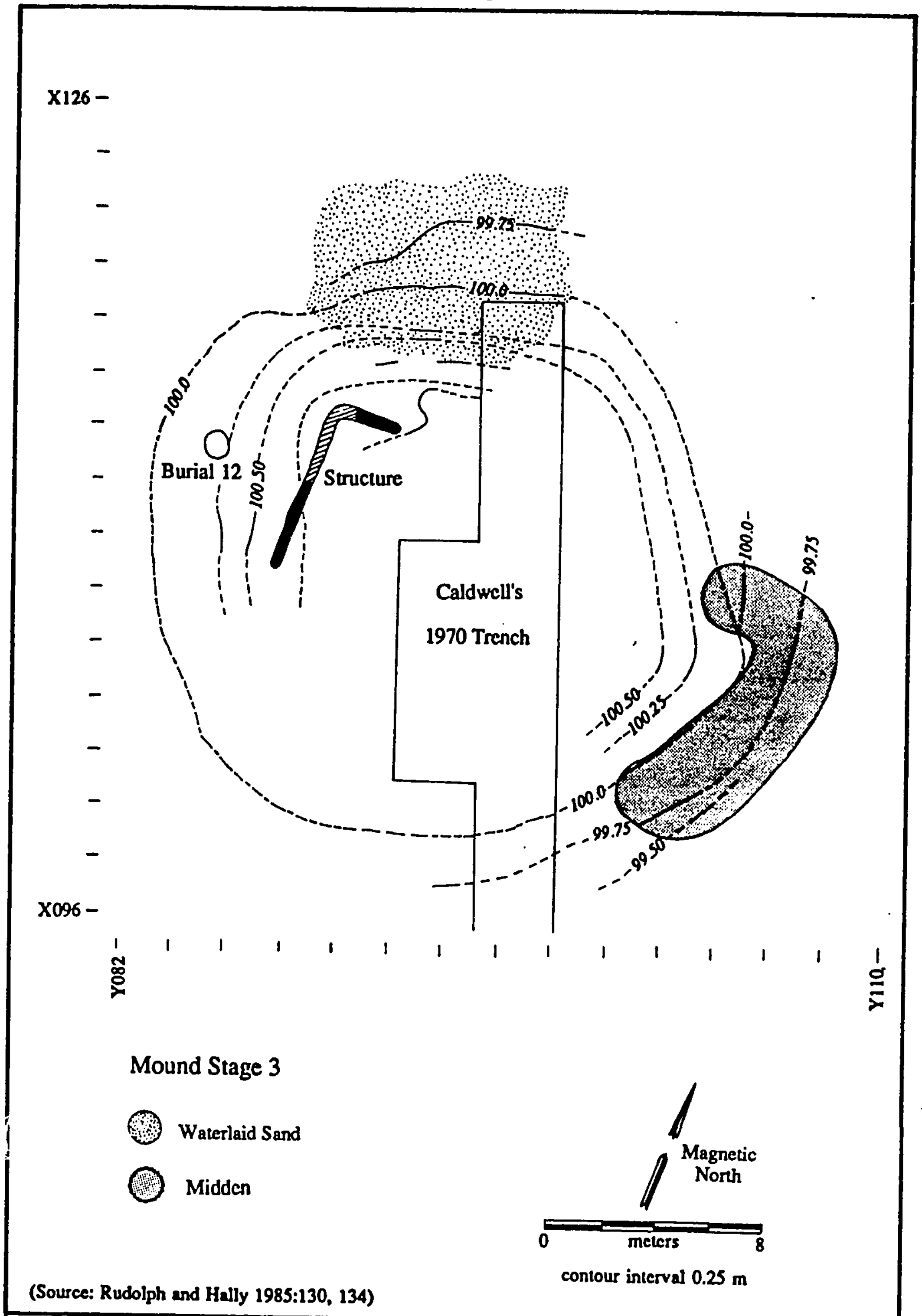


Figure 46. Mound Stages 3 at the Beaverdam Creek Mound Site (9Eb85).

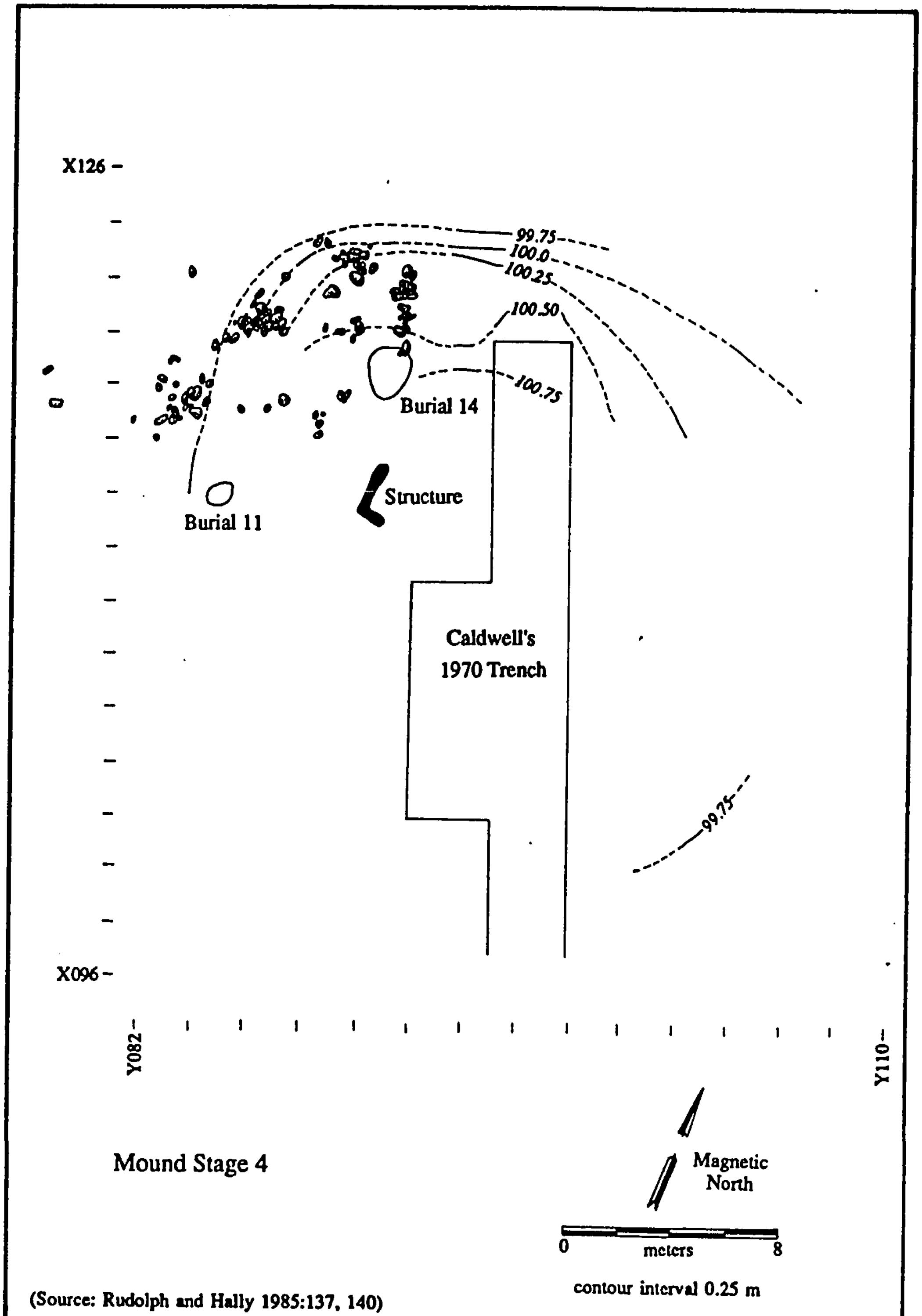


Figure 47. Mound Stage 4 at the Beaverdam Creek Mound Site (9Eb85).

summit were oriented 3 degrees west of magnetic north, presumably also the orientation of the mound. Patches of red and yellow, and gray sandy clay flooring material were found, with Beaverdam phase ceramics in association. A dense concentration of small boulders was found on the northwestern side of Mound Stage 4, over an approximately 90 square m area. Most of the boulders had been moved about by pothunters, but appeared to have originally been on the side of the mound. Not enough rocks were present to provide a mantle like those found at Estatoe and Garden Creek (Dickens 1976:79-83), nor do they seem to have been used to control erosion, cover a smaller structure, or serve as post supports (Rudolph and Hally 1985:141-142). Their purpose remains unknown, although they may have been placed to flank and accentuate the entranceway.

Village Area Results. The various excavation units that were dispersed across the floodplain indicated that Mississippian settlement was restricted to the area immediately around the mound (Rudolph and Hally 1985:239). The four block units opened in this village area found a large number of features, including one possible structure that had undergone one or more episodes of rebuilding (Rudolph and Hally 1985:199-259). This was a dense, roughly square cluster of postmolds approximately 9 m on a side in the northern part of SS1 (Figure 48). No evidence for a central hearth or a wall trench entranceway was found, although any shallow features would have been destroyed by plowing in this area. While somewhat larger than the premound Structures A1 and A2, or the residential structures at Rucker's Bottom, the size and shape were within the range for domestic structures at other sites in northern Georgia (Rudolph and Hally 1985:226). Midden in the general area was characterized by occupational debris. A possible plaza was found in XU2, opened immediately south of the mound. Feature density was much lower than in the other three block units, and no evidence for structures was found. Discoidals or chunky stones were common on the site, indicating some kind of a

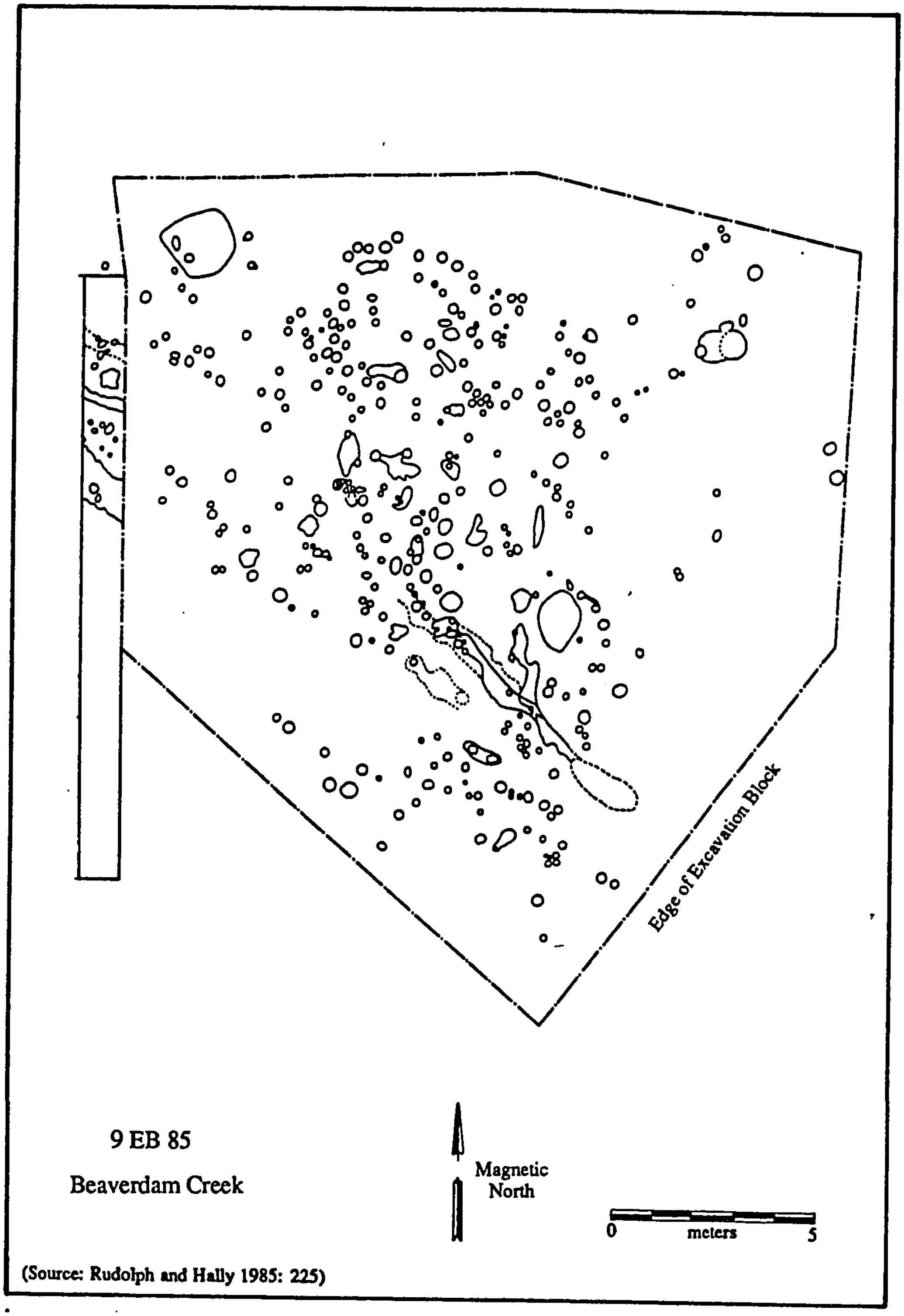


Figure 48. Probable Domestic Structure in SS1 at the Beaverdam Creek Mound Site (9Eb85).

plaza/gaming area had probably been present. Although evidence for formal structures was thus minimal, Beaverdam Creek does not appear to have been a vacant ceremonial center. Lithic, ceramic, and subsistence-related-artifacts were found throughout the midden, indicating a range of domestic activities.

Artifact Analyses. The Beaverdam phase ceramic assemblage was defined by Hally using a sample of 25,002 sherds from the premound midden, the midden strata in XU1, and the gray ashy layer associated with Mound Stage 1 (Rudolph and Hally 1985:261-280). Five principal types dominate this assemblage: Etowah Complicated Stamped, Savannah Complicated Stamped, Savannah Check Stamped, Savannah Plain, and Savannah Burnished Plain. Corncob impressions, typically below the lip on the neck and shoulder area of jars, were common. Complicated stamped motifs attributed to the Etowah series, in order of incidence, were the two-bar cross diamond, the herringbone, and the one-bar cross diamond (design motifs are illustrated in Figures 76 and 77 below). Close similarities with the Etowah III phase from northwest Georgia, and the late Etowah Stillhouse phase from the Wallace Reservoir were inferred. Motifs attributed to the Savannah series, in order of incidence, were concentric circles, filfot cross, two-bar concentric circle, one-bar cross concentric circle, and keyholes. Close similarities with the Savannah materials at the Irene site at the mouth of the drainage were evident. While the filfot motif occurred primarily during the early Lamar Irene I phase at Irene, it is common in late Etowah and Wilbanks assemblages in northwest Georgia (Rudolph and Hally 1985:269-270). The Savannah Check Stamped pottery from Beaverdam Creek was also very similar to material found at Irene, although the designs were typically not as well executed.

Collared rims, formed by the addition of a strip of clay below the lip, were a minority rim form at the site, although the attribute is common in Pisgah assemblages to the north (Dickens 1976:178; Moore 1981). Collar width ranged from 18 to 49 mm, with decorations including cane punctations, fine incised lines, notching, and vertical ridges. A low incidence of notching differentiates the Beaverdam Creek material from typical Pisgah assemblages in western North Carolina, where the decoration is common. Folded rims, more common in the ensuing early Lamar Rembert phase, were present but rare, with those found either plain or notched.

Stratigraphic analyses conducted using sherds from the premound midden, the gray ashy layer, and an area of stratified midden in XU1 showed a decline in the cross-barred diamond motifs from the earlier premound midden to the later gray ashy layer. Barred concentric circles and herringbone motifs showed the opposite relationship, occurring more commonly in the later gray ashy layer. Filfot cross motifs occurred in about the same incidence over all three proveniences, while the herringbone pattern was restricted largely to the mound area. The replacement of nested and barred diamond motifs by concentric circles, reflecting the transition from Etowah to Savannah, has been documented over much of the north Georgia region, (Hally and Rudolph 1986:51-63; Rudolph and Hally 1985:447-462). No evidence for a decline in the incidence of check stamping was observed within the mound, although this pattern was noted in the stratified midden deposits in XU1, in the village area. Check stamping declined appreciably after the Beaverdam phase in the upper Savannah River area, occurring only in low incidence in the Rembert phase assemblages at Rembert and Rucker's Bottom.

Pecked and polished discoidals were fairly common at Beaverdam Creek (N=31), suggesting chunky and related games were played in the immediate area, possibly in a plaza. The presence of quartz crystals, lumps of pigment, and sheet mica fragments in various proveniences (Rudolph and Hally 1985:305-311) indicates that the site elite were plugged in to a long distance prestige goods exchange network. Their own contribution to this network may have been worked soapstone goods, such as discoids and pipes. Small soapstone fragments were found scattered over the site, indicating local manufacturing activity. An outcrop of soapstone was located approximately 1 km away along the Savannah, and would have represented a convenient raw material source. Both clay and soapstone pipes and pipe fragments were found on the site. These artifacts, all variations on a segmented elbow form, tended to occur more commonly in mound and premound areas than in the village, although a much greater volume of fill was screened from the former areas.

Moderate numbers of small Mississippian triangular points were found at Beaverdam Creek (N=139) and at the nearby Rucker's Bottom village site (N=308). While a number of varieties could be differentiated, separable primarily by basal morphology (i.e., straight, concave, convex), no temporally or behaviorally significant categories were evident within these assemblages (Anderson n.d.c; Rudolph and Hally 1985:287-289). Other flaked tools found at Beaverdam Creek included a small number of drills and perforators, other bifaces, and utilized flakes. The perforators may have been used to work shell or bone, although no evidence for bead manufacture was found. Given the large number of beads found in Burial 2, some local manufacture may be plausible (Rudolph and Hally 1985:313). The number of flaked stone tools was fairly low (N=133), suggesting the use of wood or cane for cutting/piercing tasks (Rudolph and Hally 1985:295-298). Other artifact categories found at the site, typically in low numbers, included grooved soapstone objects resembling earlier Late Archaic notched "weights" (Claflin 1931:31-32), hammerstones and anvils, celts, beveled and grooved abraders, grinding stones, probable polishing stones, quartz crystals, lumps of pigment, and sheet mica fragments (Rudolph and Hally 1985:305-311). A small number of modified bone artifacts were recovered, including four awls, eight beads, a polished antler tine, a hollowed deer phalanx, and a cylindrical piece of bone.

The Burial Assemblage. Fifty-two burials were excavated at the Beaverdam Creek site, ten in the village area and the remainder in the mound or premound areas (Blakely et al.

1985; Rudolph and Hally 1985:317-351). Preservation was highly variable, ranging from excellent to extremely poor. Burials were typically extended to semi-flexed. Approximately two thirds of the burials were oriented along a northwest to southeast axis with about an equal preference for southwest and northeast facing positions (Rudolph and Hally 1985:345). Age determinations were possible for 43 individuals and the resulting mortality curve (Figure 49), with a high infant and childhood peak followed by decreased mortality in adolescence and increasing mortality thereafter, is fairly typical of prehistoric agricultural populations (Cohen and Armelagos, ed. 1984; Weiss 1973). Nine of the 11 burials aged between 20 and 30 years at time of death were female, perhaps reflecting deaths associated with the stresses of childbirth and lactation.

Stature estimates could be calculated for seven males and five females, with males ranging from 166 to 178 cm and females from 156 to 163 cm (Blakely et al. 1985:343). Fronto-occipital cranial deformation was common among females at Beaverdam Creek, and appeared to have been caused by binding a board to the back of the head. Nine of 16 identifiable adult females and one of 15 adult males had this trait; the adult male was elderly (>65 years of age), and the observed cranial deformation may have been due to age-thinning and post-depositional warping. General skeletal pathologies such as arthritis, localized periostitis, chronic osteomyelitis, blastomycosis, and possibly tuberculosis were present but were uncommon, as was evidence for dental decay.

Shell beads were found in appreciable numbers in Burial 2, and much lower numbers in several other burials. Three types of beads were present, perforated disks, perforated barrel shapes from whelk or conch shells, and whole *Olivella* shells (Rudolph and Hally 1985:312-313). Most of the beads found at the site came from two burials; Burial 2 had 7043 disk and barrel-shaped beads, while 450 barrel-shaped beads were found with Burial 31. Only small numbers of bone or shell beads (one to eight specimens) were found with the remaining burials. Other shell artifacts from the site, all found with burials, included a columella pendant, a whelk shell cup, two square shell

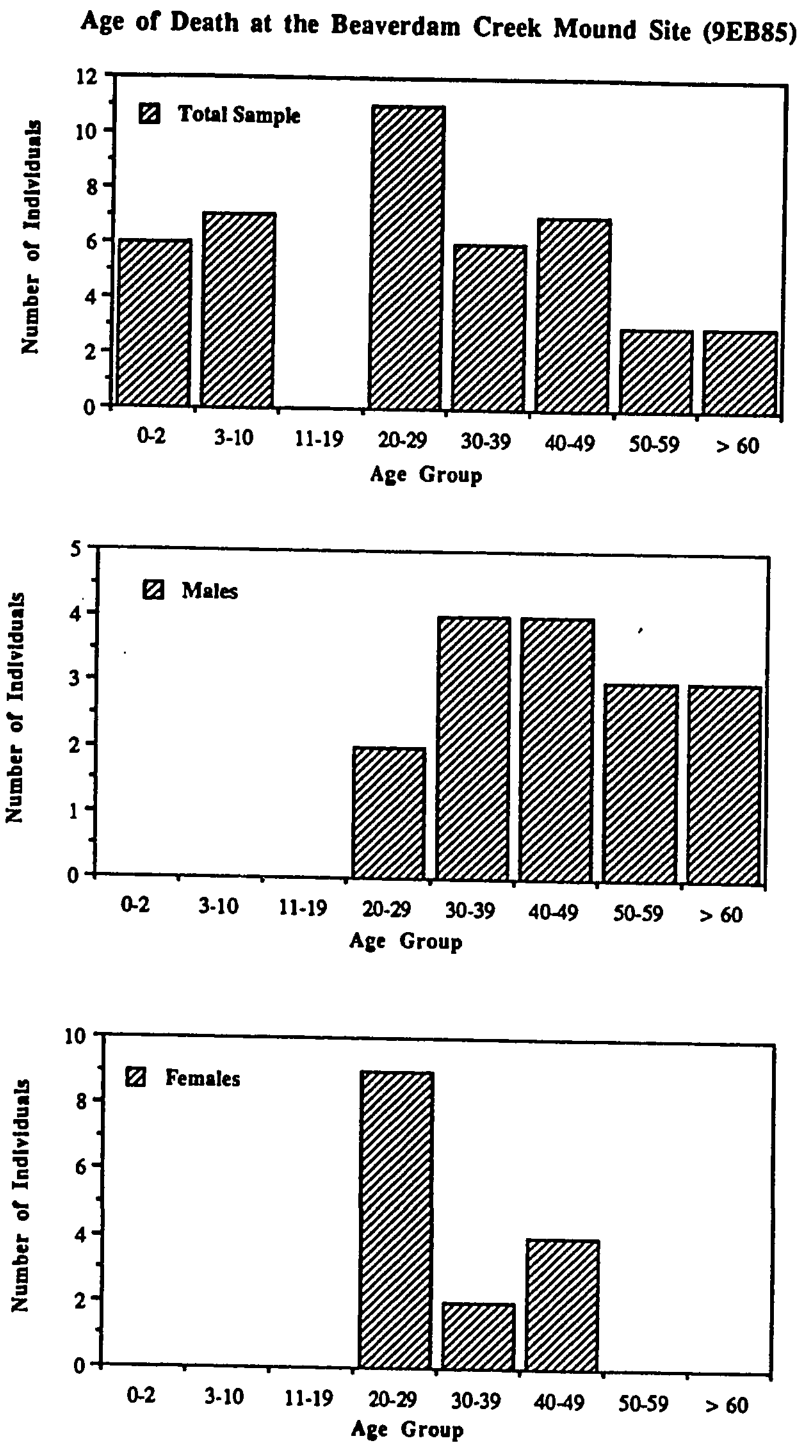


Figure 49. Mortality Distribution for the Beaverdam Creek Mound Site (9Eb85).

ornaments, a button-like object, two earspools, and three gorgets. Three copper ornaments were found with Burial 2. These included a crescent-shaped sheet from a probable headdress and two circular copper discs ca. 5.5 cm in diameter that were probably earspools (Rudolph and Hally 1985:314-315). The discovery of a largely intact copper-covered celt in pothole spoil dirt during the 1971 fieldwork indicated that other elaborate burials were once present in the mound (Lee 1976:41-42; Rudolph and Hally 1985).

Burial in the mound apparently demarcated high status at the Beaverdam Creek site, and this status was age and sex-linked. Approximately one-third of the interments in the mound were characterized by grave goods or unusually elaborate burial treatment. Only one of the burials found in the village, in contrast, had associated grave goods. All of the identifiable burials found in the village area were either female or subadolescents; no identifiable adult males were found in this area (Figure 49). Within the mound the average age of death for males receiving special mortuary treatment (N=6, 46.7 years) was virtually identical to that for males buried with no special treatment (N=8, 46.2 years) (Rudolph and Hally 1985:345). In contrast, the average age of death of adult females receiving special mortuary treatment (N=5, 40.2 years) was considerably higher than that for adult females buried without special treatment (N=11; 27.7 years). Female status seems to have depended, in part, on surviving peak child-bearing years. Adults of both high and low status tended to be buried considerably deeper than subadults, with burial pit depth averaging 79 cm as opposed to 39 cm (Rudolph and Hally 1985:348).

Paleosubsistence Analyses. Beaverdam Creek is currently the only Mississippian mound center in the valley where detailed paleosubsistence analyses have been conducted. A wide range of carbonized plant remains was identified at the site, including maize, squash, gourd, sunflower, sumpweed, hickory, acorn, walnut, hazelnut, maypops, persimmon, grape, bramble (raspberry), strawberry, plum, maygrass, panic grass, chenopodium, purslane, carpetweed, amaranth, and eyebane (Gardner 1985:400-411). Wood charcoal was not identified to species, but both hardwoods and softwoods were noted in the collection. Both acorn and hickory nuts were common, occurring in over 80% of the samples; hazelnut and walnuts were much less common, and may not have played a major role in subsistence. Maize was the most frequently occurring plant food, present in 93% of the samples, and accounting for 53% of the food remains by weight. Cobs were common, with the majority eight-rowed Northern Flint or *Maiz de Ocho*; lesser quantities of 10- and 12-rowed corn were also present (Gardner 1985:405). Squash and gourd were represented by one rind and one seed, and one rind fragment, respectively. The sunflower and sumpweed were present in incidental quantity; while the single identified sunflower seed was within the range of other reported Mississippian examples, the three sumpweed seeds (two of which were measurable) were small and more typical of Late Archaic or Early Woodland forms from the region.

Fruits appear to have been extensively utilized. Maypop seeds were present in almost three quarters of the samples, and grape in almost 40% of the samples. The other fruits that were identified occurred in a much lower number of samples. The amaranth, chenopod, maygrass, and panic grass seeds may derive from ground disturbance associated with the use of the site area, although utilization as a food source cannot be ruled out (Asch and Asch 1985; Cowan 1978). Purslane, carpetweed, and amaranth could have been used as potherbs, while eyebane was a medicinal herb; all could have grown in the disturbed habitat about the site, and may have been encouraged (Gardner 1985:407). The fairly wide range of plant foods exploited indicated something of a generalist foraging strategy, with clear dietary preferences for certain plants, particularly maize, nuts, and fruits (Gardner 1985:409-411).

A sample of 7573 bones representing a minimum of 161 animals were collected and examined from Beaverdam Creek, from both 1/4 inch [0.63 cm] mesh and flotation samples (Reitz 1985:416-428). A wide range of species from a number of habitats were exploited, most occurring in close proximity to the site. Both aquatic and terrestrial resources were exploited in some quantity, although terrestrial mammals, particularly deer, contributed the bulk of the food. Assemblage diversity and equability were high, indicating a diffuse, or generalist subsistence strategy was practiced (Reitz 1985:427). An analysis of deer elements indicated that kills were returned intact to the site. The approximately equal occurrence of both hind and forequarters indicated that meat probably did not leave the site as tribute, something that was suggested at the nearby Rucker's Bottom village. Many of the bones were burned, suggesting that roasting over an open fire was a common cooking practice. Carnivore gnawing was also observed, but no dog remains, one of the probable scavengers, were found.

Community Organization. The Beaverdam Creek Mound site undoubtedly served as a ceremonial center for populations in this part of the upper Savannah River Valley. The extent of its influence is unknown, however, since only minimal investigations have been undertaken at the other three centers located in this part of the drainage, at Tate, Fortson, and Rembert. Whether it was the primary ceremonial center for this part of the drainage during this period, or one of four relatively autonomous centers (i.e., Beaverdam Creek, Fortson, Rembert, and Tate) remains unknown. The number of people actually living at the center remains unknown. The intensive examination of ca. 1140 sq. m of the village area revealed large numbers of features but only one definite house pattern. Another 1500 sq. m were stripped and less intensively examined for features, again with no obvious evidence for structures. Structure B, the small circular wall trench building near the earthlodges in the premound midden area, was also probably a habitation. The presence of only two readily identifiable domestic structures, given the area examined, may point to low resident populations. The midden deposits around the mound, however, and the large numbers of postmolds in this area, argues for fairly intensive use.

Rudolph and Hally (1985:356) have suggested that the postmolds in the village lacking obvious patterning may have supported "racks, screens, platforms, arbors, and other short-lived constructions" like those inferred at Irene. If Beaverdam Creek was the ceremonial center for a larger area, evidence for these kinds of structures would be expected, to provide temporary shelter for groups visiting the site for ritual or other public activities.

Tate

Tate (9Eb86) is a single mound site overlooking the floodplain of Beaverdam Creek about 8 km upstream from its confluence with the Savannah. The site was found during Hutto's reconnaissance survey in the Georgia portion of the Russell Reservoir in 1969 (Hutto 1970:23-25). The mound was described as approximately 30 m in diameter and 4.6 m high, although due to erosion and looting its original shape could not be determined. Approximately one-sixth of the mound had been destroyed by looters at the time of the survey, with most of the damage occurring on the northeast side, and the rest from isolated potholes scattered over the summit. Hutto (1970:24) thought that at least five successive mound stages were present, but how he arrived at this cannot be determined. Hutto noted that Tate was the largest mound he had observed in the reservoir area, larger than the Beaverdam Creek Mound, which was also visited at this time. A village area located to the north and west of the mound was inferred based on the distribution of surface debris. Savannah Check Stamped, Cord Marked, and Complicated Stamped pottery was found at the site during the 1969 survey, arguing for a Beaverdam phase placement (Hally and Rudolph 1986:54). In 1977 Taylor and Smith (1978:193, 388, 427) revisited the site and made a general surface collection that produced a number of Beaverdam phase burnished plain, check, corncob impressed, and complicated stamped ceramics. The mound was estimated to cover approximately 400 sq. m, and its preservation was urged. Because Tate lay outside of the reservoir floodpool, it saw no subsequent examination after these initial visits.

Tugalo

The Tugalo mound and village site (9St1), located near the headwaters of the Savannah in Georgia, was a major Lower Cherokee town in the 18th century (Williams and Branch 1978). In the 1880s the single mound, which at that time was ca. 4.3 m high and 30 m in diameter, was explored with a single vertical shaft with little result (Appendix A) (Thomas 1894:314-315). In 1952 an approximately 2540 sq. m area was examined in village deposits southeast of the mound by William Edwards. Aside for brief descriptions of the historic artifacts (Harmon 1986; Smith and Williams 1978), this work remains unpublished. A possible ditchline was found suggesting the site may have been fortified at some point in its history. Only three pages of fieldnotes describing two burials are on file from the excavation, so our knowledge of what was found in the village area is limited. The artifacts that were recovered are curated at the University of Georgia, and were cataloged by provenience (i.e., square and level data), fortunately, so some reconstruction of the findings remains possible. Because Tugalo was in the floodpool of the Hartwell Reservoir, federally funded excavations were conducted in the mound between October 1956 and March 1957 under the direction of J. R. Caldwell (1956). In the central portion of the mound the upper three of four surviving structures were examined, and a small block was opened on the north side of the mound. Although no final report was ever produced, extensive fieldnotes, maps, and photographs are on file at the University of Georgia and brief summaries of the fieldwork have been prepared by Williams and Branch (1978) and Duncan (1985:17-25). Caldwell had prepared a series of detailed illustrations of the mound profile and structures prior to his death, four of which are reproduced here for the first time.

The Tugalo site appears to have been continuously occupied from late Swift

Creek/Woodstock to historic Cherokee times, with a possible break only during the Savannah period. Nine construction episodes were recognized in the mound. The first four stages, each consisting of a rectangular mound surmounted by a well-defined earth-embanked structure, were found to be largely intact (Figure 50), while evidence for the remaining stages, which had been truncated by plowing and erosion, was found on the edge of the mound. Mound Stages 1 through 4 were erected during the Jarrett phase. Mound Stage 4 (Caldwell's Mound I), the latest intact construction episode, and the last dating to the Jarrett phase,was a truncated pyramid ca. 23.8 m on a side with rounded corners and elevated about 2.4 m (Figure 51). The summit and upper sides of the mound were covered with an orange sand, while the lower portion of the mound was covered with a bluish clay like the capping noted over the Jarrett phase stages at Chauga (see below). The upper flanks of this mound stage were covered by a mantle of logs arranged parallel with the summit margin, with single logs placed every 1.2 m or so, presumably to hold the underlying logs in place. The lower flanks of the mound were covered with logs arranged perpendicular to the mound summit margins, and had fewer single covering logs. The clay cap underlay these logs, however, and may have reduced the need for as many covering logs. The log mantle covering Stage 4 had burned, accounting for its unusual preservation. Some orange clay from probable wall debris was found in the fill above the mantle, possibly eroded from the summit.

The summit of Stage 4 was surmounted by a square earth-embanked structure ca. 7 m on a side with four well-defined corner posts, a series of lesser posts suggesting inner partitions, and a large central fire basin. This summit structure was in a rectangular depression surrounded by a low wall of earth up to ca. 38 cm high that Caldwell (1956:2) called a parapet. Similar earthen embankments were around the three lower structures (Stages 1 through 3), prompting Caldwell's designation of them as earthlodges. A screening fence or palisade was located around the base of the mound. Two rows of

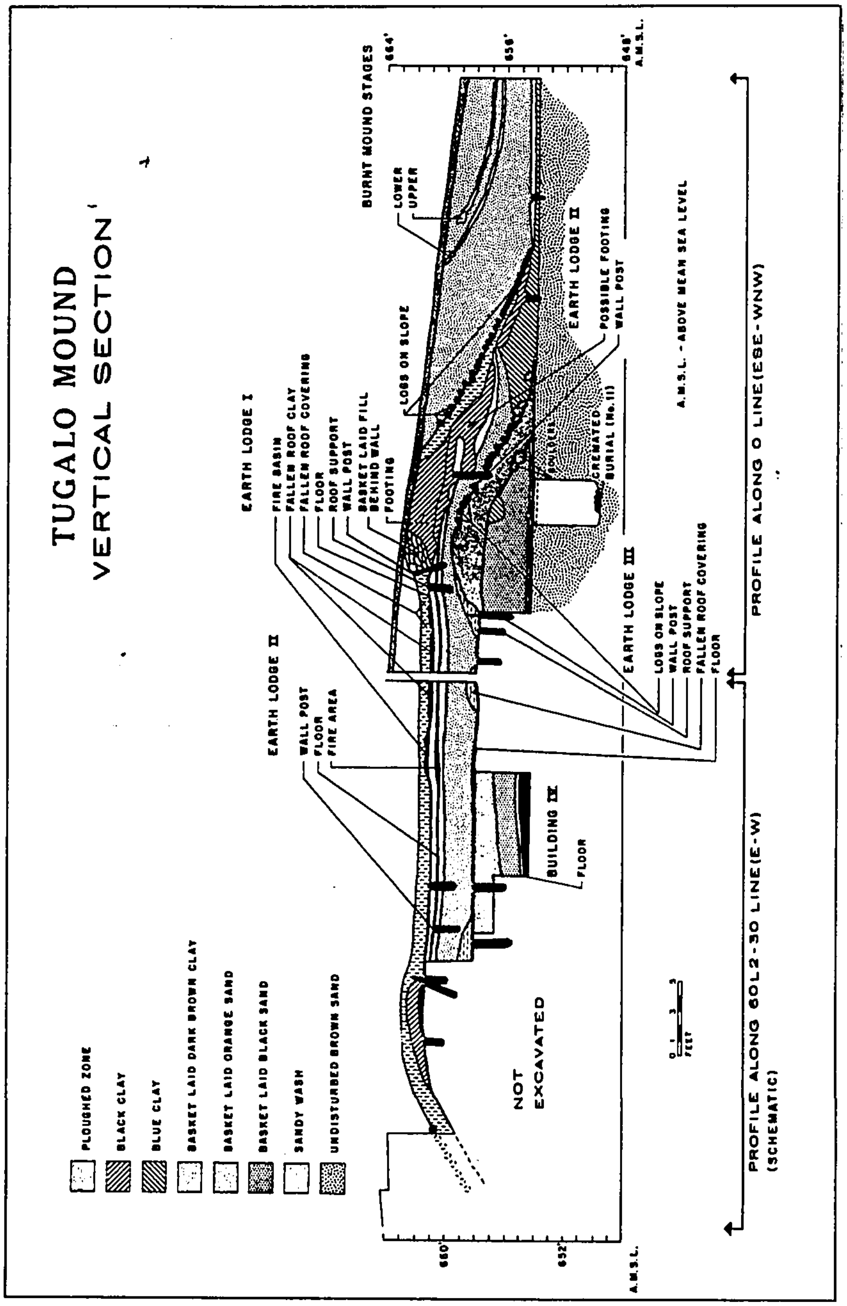
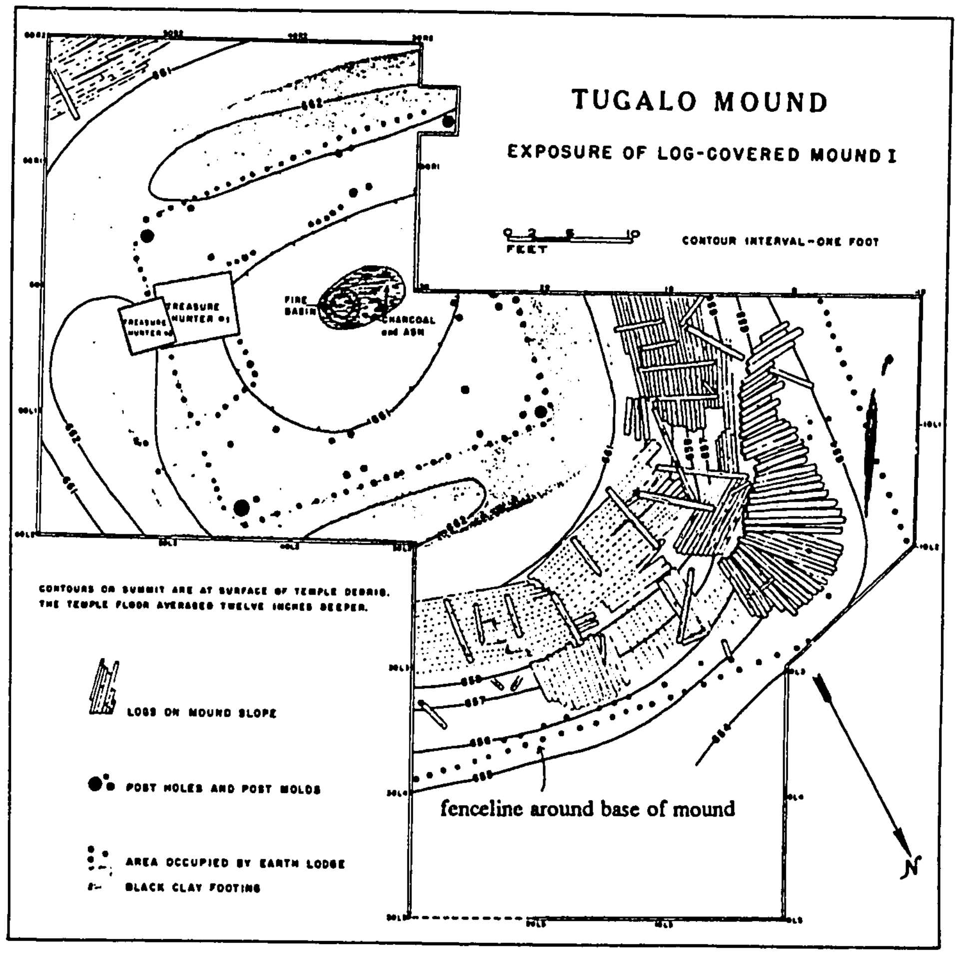


Figure 50. Profile of the Mound at the Tugalo Site (9St1). (Drawn by Joseph R. Caldwell)



Note: The "Treasure Hunter" unit may be the single shaft sunk into this mound by BAE Mound Division archaeologists in the mid 1880s.

Figure 51. Mound Stage 4 at the Tugalo Site (9St1). (Drawn by Joseph R. Caldwell)

posts ca. 18 cm in diameter and 30 cm apart were found, suggesting either one episode of rebuilding during the period when Stage 4 was in use, or that the inner fenceline belonged to the previous mound, Stage 3. Both fencelines had burned, and the absence of fired clay indicates they were not wattle and daub walls. The presence of blue clay in the fill of the postmolds in the inner row, and the fact that burned posts from this wall extended through the clay cap, which covered the earlier wall line, indicates the wall was burned prior to the construction of Stage 4.

Fewer details are available for Stages 1 through 3, although all were apparently similar to Stage 1. Stage 3, also a truncated pyramid, was ca. 30 cm lower than Stage 4 and ca. 20 m across at the base (Figure 52). A squared structure ca. 7 m on a side was found on the summit. Like the structure atop Stage 4, it lay within a shallow depression bounded by a low embankment, had well-defined corner posts, and a number of smaller interior posts suggesting the presence of partitions. A well-defined hearth occupied the center of the structure. The fill over the floor had an appreciable quantity of roof debris on it, indicating the structure had collapsed or been pulled down prior to the construction of the next stage. The flanks of Mound Stage 3 were covered with logs arranged parallel to the summit, and a layer of boulders had been placed around the base, presumably to hold the slope and logs in place. Whether this mound covering and the summit structure had burned could not be determined, although Caldwell's profile (Figure 50) refers to "Burnt Mound Stages," suggesting they may have burned.

Mound Stage 2 was about 60 cm below Stage 3, and stood about 1.5 m high. Like Stages 3 and 4, it was surmounted by a squared structure ca. 7 m on a side with well-defined corner and wall posts, a central hearth, and evidence for internal partitions (Figure 53). The summit structure was in a shallow depression ca. 50 cm deep formed by the surrounding embankment.. The sides of the mound were covered with logs arranged parallel to the summit. Scattered posts were observed at the base of the mound

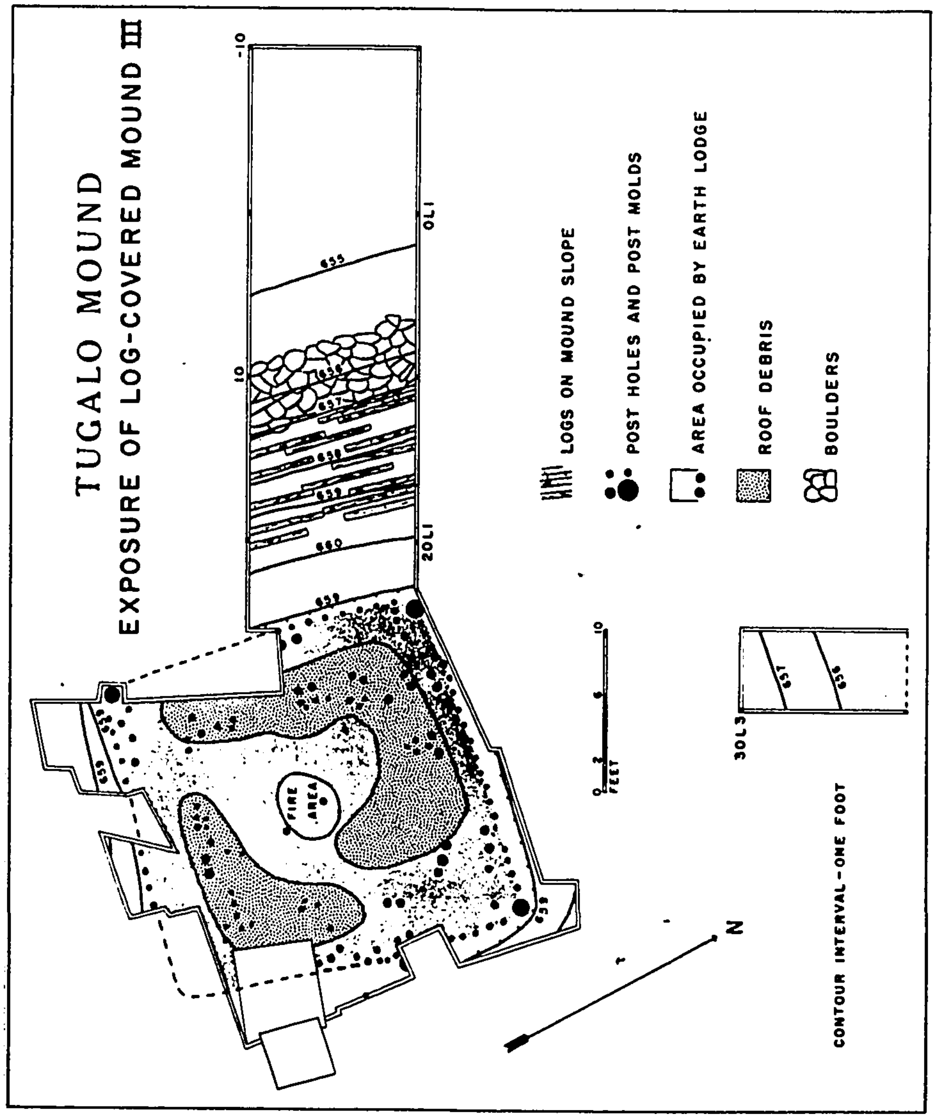


Figure 52. Mound Stage 3 at the Tugalo Site (9St1). (Drawn by Joseph R. Caldwell)

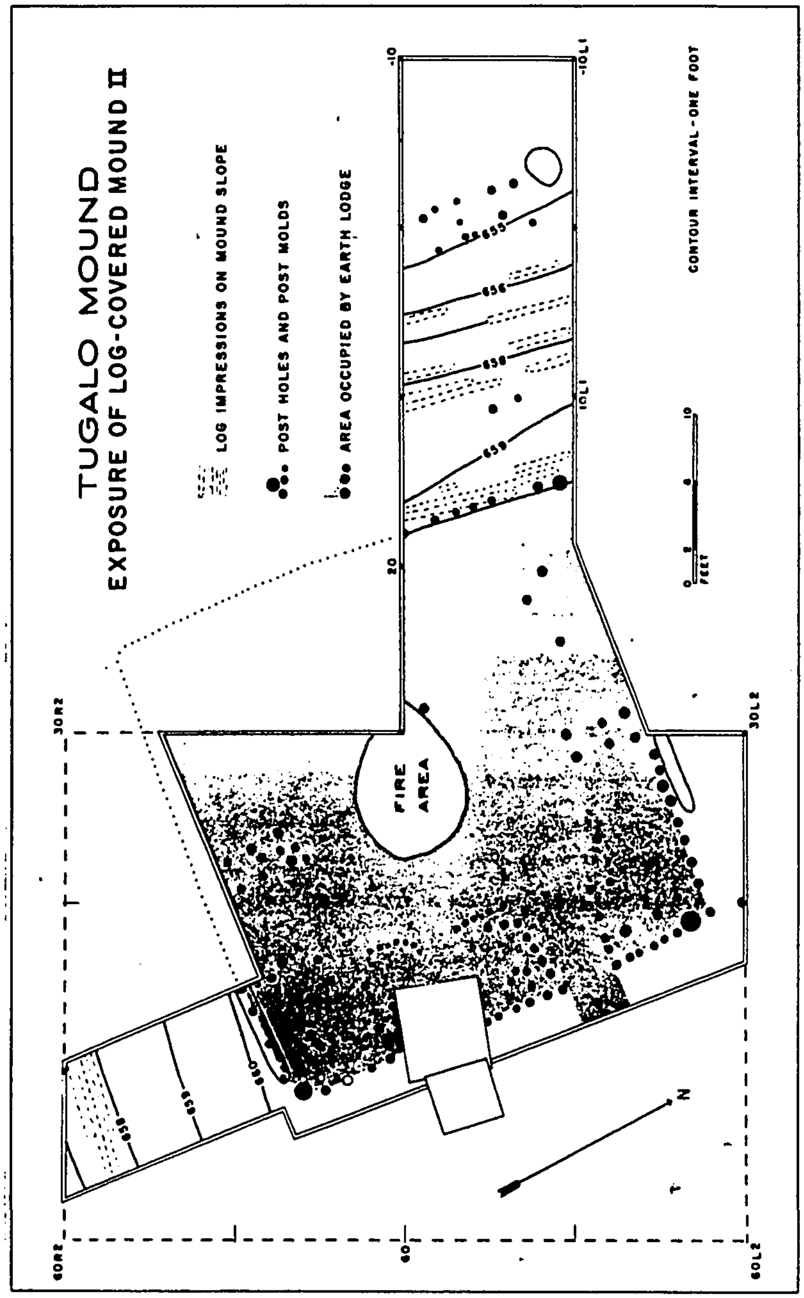


Figure 53. Mound Stage 2 at the Tugalo Site (9St1). (Drawn by Joseph R. Caldwell)

on the eastern side, but whether these were from a fenceline could not be determined. From their arrangement, it is equally likely they came from a structure near the mound.

Due to the comparatively small amount of excavation that occurred in the lower portion of the mound, very little was determined about Mound Stage 1. From the profile it appears a structure was built immediately above the premound surface, possibly on a layer of fill ca. 10 to 20 cm thick (Figure 50). This structure was approximately 8 to 9 m across, assuming the structures atop the later stages were centered above it. and either surrounded by an earthen embankment, or subsequently covered by fill to a depth of about 1 m at the margins and thinning to ca. 30 cm in the center. A cremation, Burial 11, was found in a deep pit below the western margin of the structure, and may have been roughly contemporaneous.

Above Stage 4 the summit area had been destroyed by plowing and erosion, and construction episodes were recognizable only on the periphery of the mound. Five strata from later occupations or stages were recognized spanning late Etowah through historic Cherokee periods. These strata included two ash layers, the first probably terminal Jarrett phase in age and the second dating to the early Lamar Rembert phase. The first strata may have been a true mound stage, although this was uncertain. Above this was a brown earthen layer that dated to the Rembert phase. A dense concentration of later, Tugalo phase debris on the northeast side of the mound was found above this, a deposit which was in turn overlain by a layer of historic Estatoe phase Cherokee material (Williams and Branch 1978) How many true mound stages were present above the four Jarrett phase levels is unknown, although at least one possible later Jarrett phase stage, one or two Rembert stages, and one Tugalo stage may have been present.

Immediately outside the fencelines around Stage 4 a small block was opened on the northern side of the mound (Figure 54). Eleven semi-flexed burials were found, all apparently lacking grave goods, which caused Caldwell (1956:4) to suggest they were of

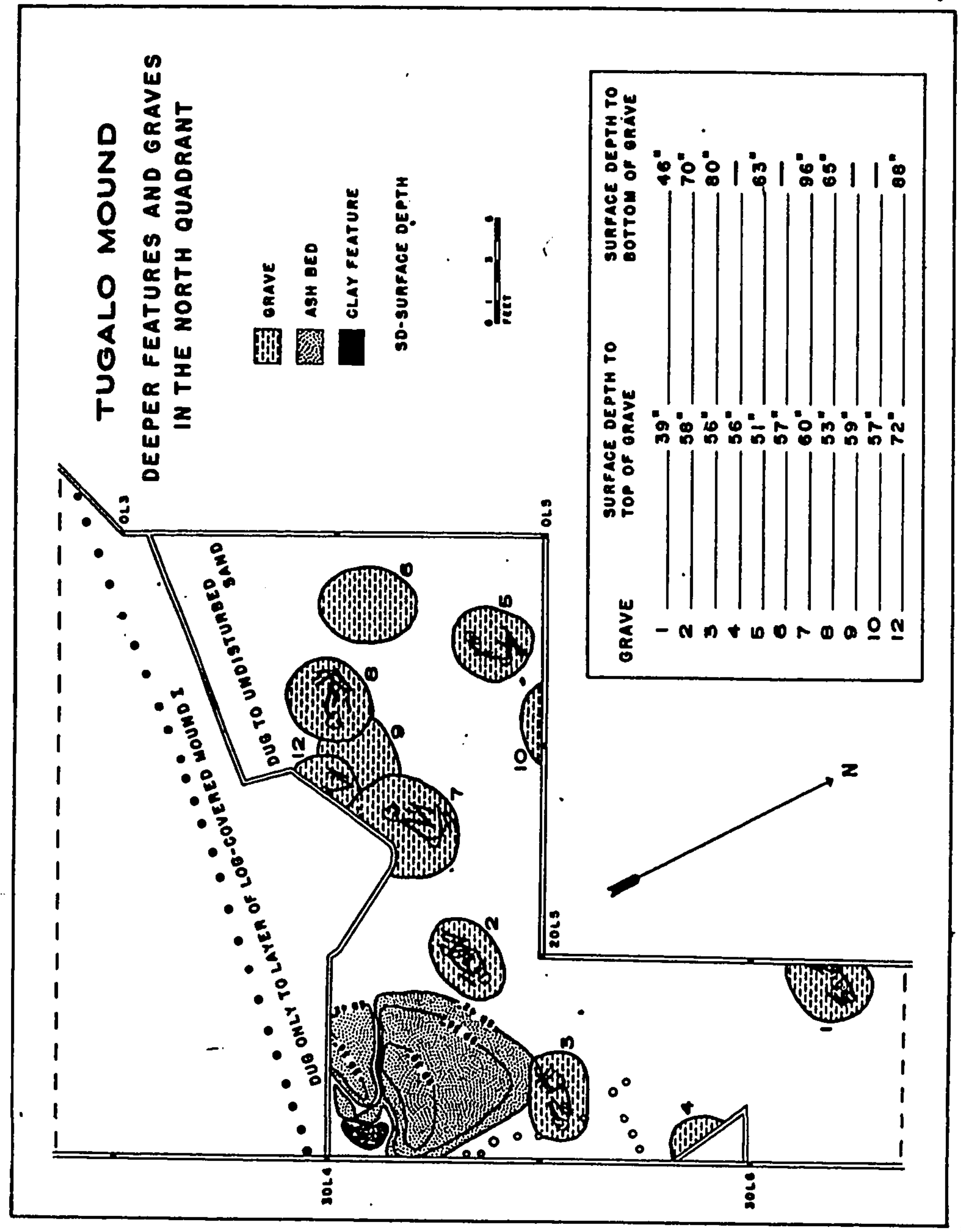


Figure 54. The Burial Area on the Northern Side of the Mound at the Tugalo Site (9St1).
(Drawn by Joseph R. Caldwell)

"less distinguished members of the community." These were in poor condition and were apparently not saved. A large ash bed was also found in this area that might be debris from summit occupations. Perhaps the most important finding was a thick stratified deposit containing thousands of large sherds from vessels presumably used and discarded in the mound area. This finding has prompted the discovery of debris dumps at several other mounds in the general region (Shapiro 1985a; Williams and Shapiro 1986b).

Ceramics from the northeast dump at Tugalo were examined by Hally to define the Late Lamar Tugalo phase in the upper Savannah River Valley, dated from ca. A.D. 1450 to 1600 (Anderson et al. 1986:42-43). Tugalo ceramics also occur at Estatoe and Chauga, and the phase appears restricted to the upper part of the basin. Hally (1986a) has argued that the Tugalo phase developed directly out of the preceding Rembert phase with no break in continuity, and in turn developed into the historic Cherokee Estatoe phase ceramics. Williams and Branch (1978:36), in a separate analysis of the Tugalo material, argued that a dramatic change occurred in the ceramic assemblage at Tugalo between the terminal Etowah ashbed and the Rembert materials in the lower level of the northeast dump, layers dated to 595±60 BP (UGA 1348) [calibrated ca. AD 1320, 1340, or 1392; Stuiver and Pearson 1986:811, 827] and 470±65 BP (UGA 545) [calibrated ca. AD 1434; Stuiver and Pearson 1986:811, 827], respectively. The first date appears too late for a Jarrett phase occupation, while the second falls within the range for the Rembert phase. Given the number of possible calibrated absolute dates for the first date, the charcoal sample generating it could very well come from either the late Etowah (Jarrett phase) or subsequent Lamar (Tugalo phase) components. Williams and Branch (1976:36) argued from this that "the lower Cherokee whose discards formed the historic stratum in the mound had occupied Tugalo at least since the third quarter of the 15th century A.D" and suggested that they may have been intruders, taking over the site from earlier groups. While continuity in ceramic tradition throughout the Mississippian period is indicated in the upper Savannah River Valley (Hally 1986a), there is also a suggestion that fairly dramatic changes were occurring in the 15th century (Chapters VI and VII).

Estatoe

The site of Estatoe was located about 10 km north of Tugalo on the south side of the Tugaloo River in extreme northeast Georgia (Figure 55). Late Lamar through historic Cherokee components were documented in the single mound found at Estatoe, which was excavated in 1959 and 1960 by Kelly and De Baillou (1960) as part of the investigations in the Hartwell Reservoir. Six construction episodes were were identified, the lower five of which, designated Stages 1, 2, 3, 4a, and 4b were a series of superimposed structures ca. 12 m on a side separated from one another by thin earthen platforms a 5 to 10 cm thick (Figures 56, 57). A layer of large cobbles and small boulders up to a meter thick was placed over the fifth stage (4b), evenly covering the underlying structure (Figure 58). At least one mound stage was erected above this, surmounted by a structure, although this and any possible later stages that may have been present had been truncated by plowing. As at Tugalo, a dump was found on the northeast side of the mound.

Continuous occupation through all six stages is indicated by the re-use of major corner support post holes in the mound summit structures. These holes even extended through the rock layer separating stages 5 and 6, and hence were used in the construction of the structure on Stage 6 (Figure 58) (Kelly and De Baillou 1960:9). The rock layer marked a major change in construction procedures, and may have been intended to symbolically separate the earlier from later stages (Kelly and De Baillou 1960:19). Based on ceramic evidence, use of the Estatoe mound began during the Late Lamar Tugalo phase and was coeval with the use of Stages 8 to 10 at Chauga and with the deposition of

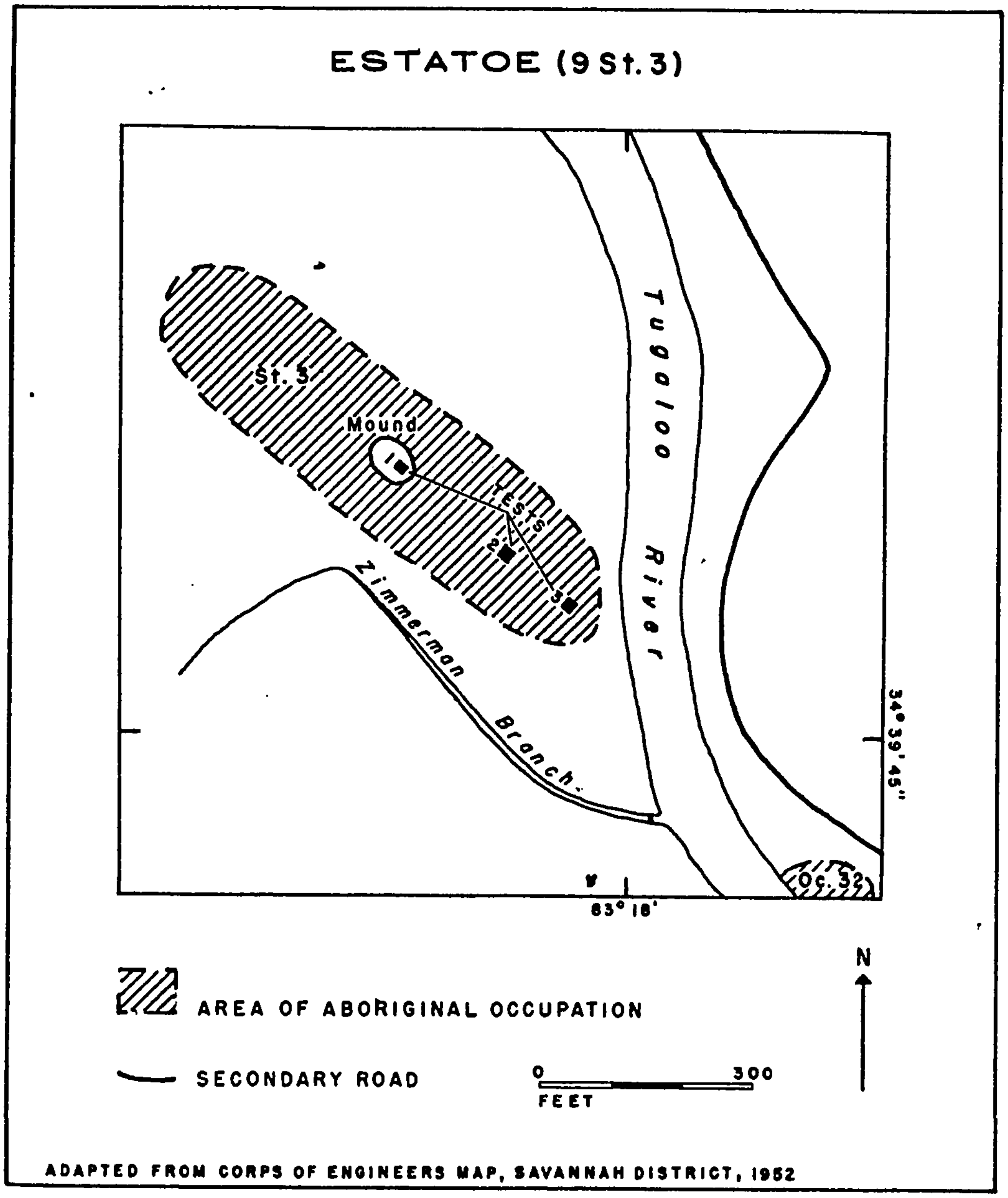


Figure 55. The Location of the Estatoe Mound and Village Site (9St3).
(Figure courtesy Laboratory of Archaeology, University of Georgia)

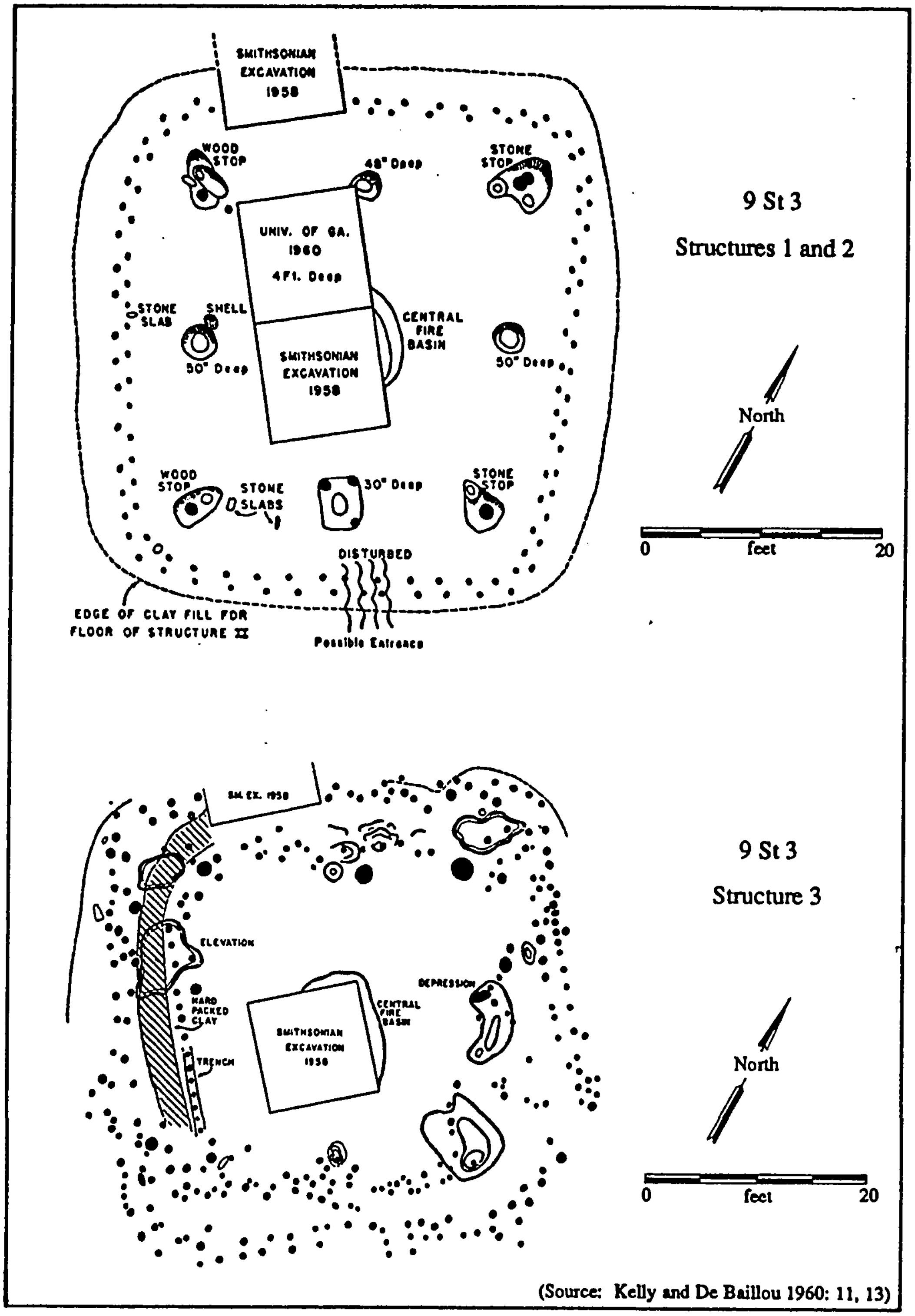
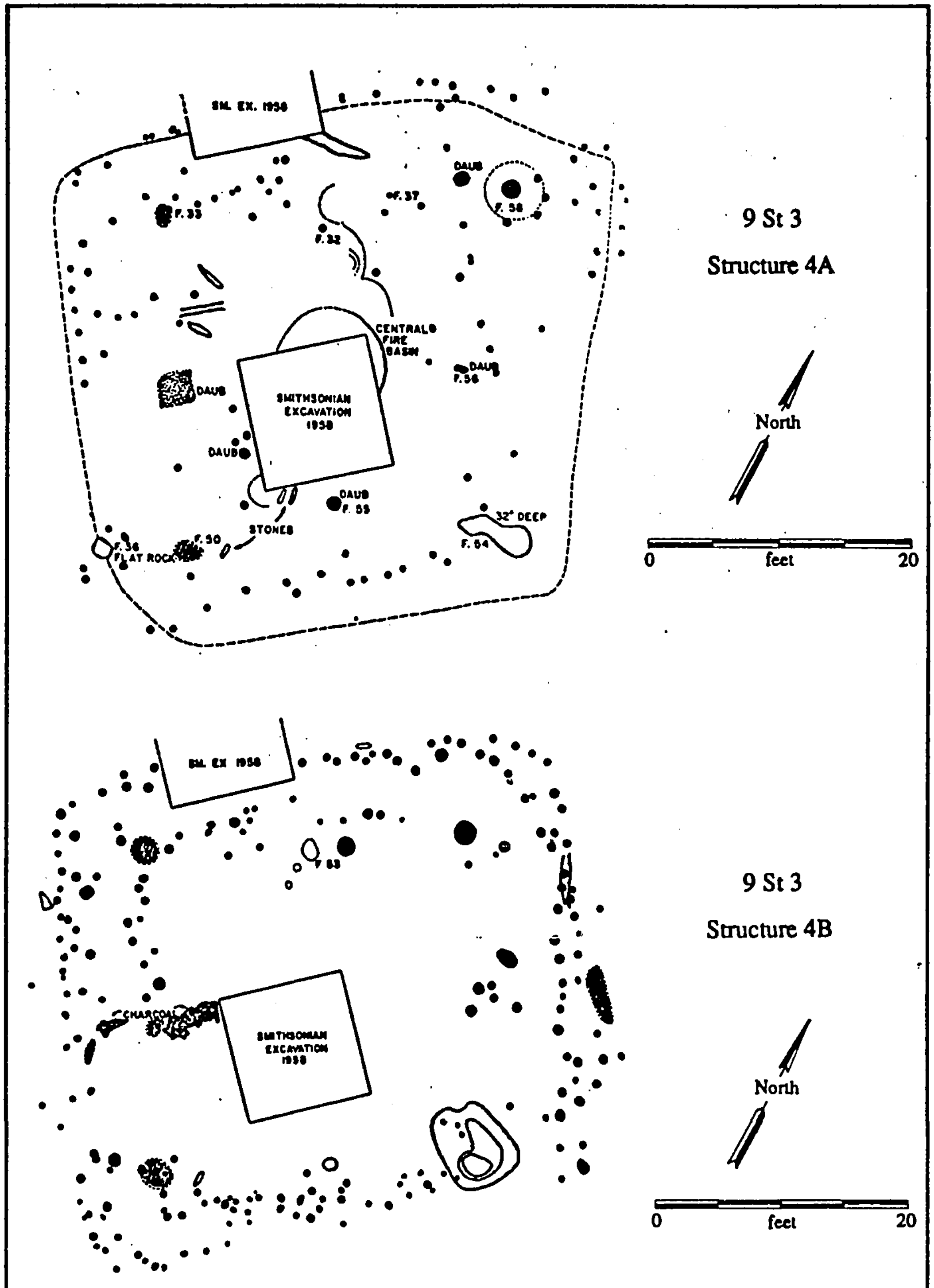


Figure 56. Mound Stages 1, 2, and 3 at the Estatoe Site (9St3).



(Source: Kelly and De Baillou 1960: 14-15)

Figure 57. Mound Stages 4 and 5 at the Estatoe Site (9St3).

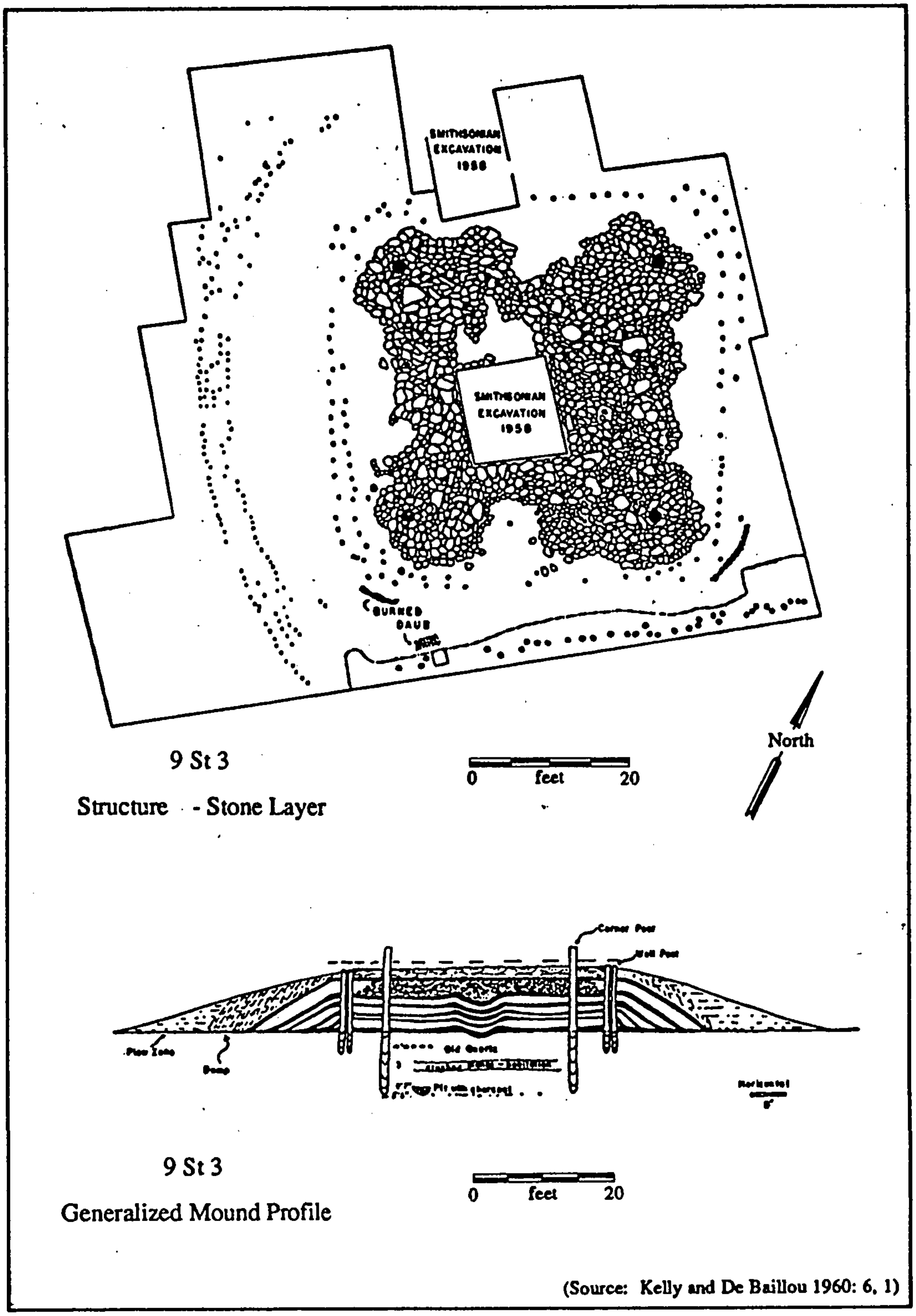


Figure 58. Mound Stage 6, and Generalized Mound Profile, at the Estatoe Site (9St3).

the northeast mound dump at Tugalo (Kelly and De Baillou 1960:29). Occupation continued through the historic Cherokee period until the site was destroyed and abandoned near the end of the American Revolution. Two tests were opened in the village area southeast of the main mound, finding evidence for both burials and structures (Figures 58, 59). Limited earlier occupation in the general site area is also indicated by the presence of some Woodland and Etowah-like materials, but the nature of these occupations is unknown.

Mound construction began at Estatoe early in the Tugalo phase (ca. A.D. 1450 to 1600) and possibly as early as toward the end of the preceding Rembert phase. The stone layer was laid down some time during the Tugalo phase, probably sometime around or shortly after ca. A.D. 1500. As at Tugalo, the late 15th and early 16th centuries seem to see major changes occurring in the ceremonial centers of the chiefdoms of the upper Savannah River. Site use continued into the succeeding Estatoe phase, which was defined, in large measure, on the basis of materials from this site (Hally 1986a; Hally et al. 1985). The Lower Cherokee found in this area in the late 17th and 18th centuries thus had a long record of occupation (Hally 1986a).

Chauga

The Chauga mound and village site, located in Oconee County, South Carolina, between the confluence of the Tugalo and Chauga rivers, was examined in from August through December 1958 by A. R. Kelly and R. S. Neitzel (1959, 1961), as part of salvage investigations undertaken in the Hartwell Reservoir. The site was a Lower Cherokee town that had been intermittently documented by colonial travelers during the first half of the 18th century. A single mound was present at the site which, upon excavation, was found to have ten construction stages, most with associated structures. Site occupation appears to have taken place during two major periods, during the Early

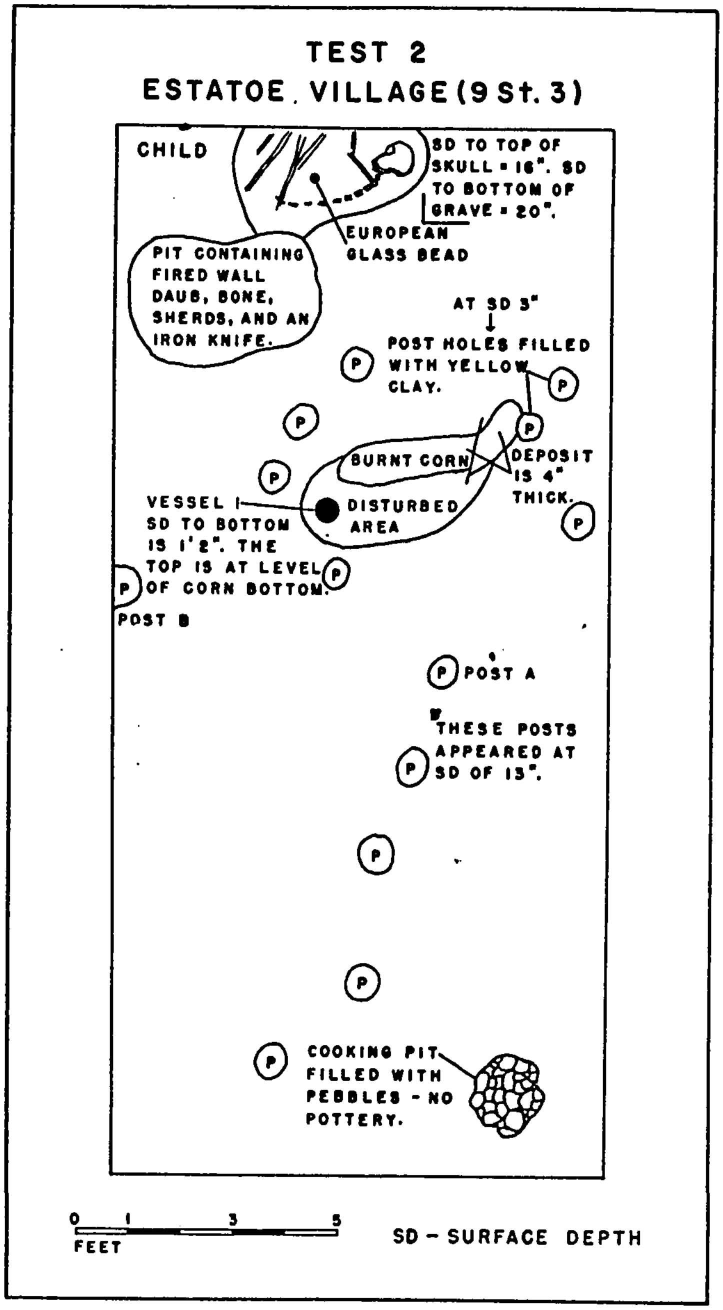


Figure 59. Features in Test 2 in the Village Area at the Estatoe Site (9St3). (Figure courtesy Laboratory of Archaeology, University of Georgia)

Mississippian Jarrett phase and the late prehistoric/early historic Tugalo and Estatoe phases (Hally 1986a:97; 1987). The first seven mound stages have been dated by Hally (1986a:97) to the Etowah culture Jarrett phase while the last three stages have been assigned to the Late Lamar Tugalo phase. Kelly and Neitzel (1961:63), in contrast, date only the first six stages to the earlier Etowah occupations, and start the Late Lamar occupations with Mound Stage 7. Hally (1989:personal communication) has since accepted a Late Lamar Tugalo phase dating for Stage 7. Historic 18th century Cherokee Estatoe phase ceramics were found in the associated village area and in slopewash near the mound, which led Hally (1986a:97; see also Kelly and Neitzel 1961:6-7) to conclude that these occupants used but did not add to the mound.

The upper levels of the mound had been badly damaged by cultivation and looting, and evidence for structures was minimal. No evidence for submound earth-embanked structures was evident. The first six stages were built in a consistent fashion, with "a zone of [basket] loaded fill surmounted by a clay cap" and had a truncated pyramidal shape (Kelly and Neitzel 1961:9). The clay capping was of a distinctive blue-gray clay ranging in thickness from a few cm on the summit to 30 cm or more on the margins, and extending up to 3 m away from the mound base in places. The upper four mound stages, in contrast, were not capped, although these were very badly disturbed and could only be reconstructed from remaining portions on the mound slopes.

Evidence for a palisade or screening fence was found around the first mound, Stage 1 (Figure 60). A number of small boulders were found in the fill of this stage, near the northeast side of the mound, like the boulders noted on the northwest side of Stage 4 at the slightly later Beaverdam Creek site. As at that site, however, the function of these stones could not be determined. Waterworn boulders were found in the clay cap on the southwest, northwest, and northeast margins of the mound, and scatters of boulders, and an occasional log, were characteristic features of the clay lining on the slopes of each of

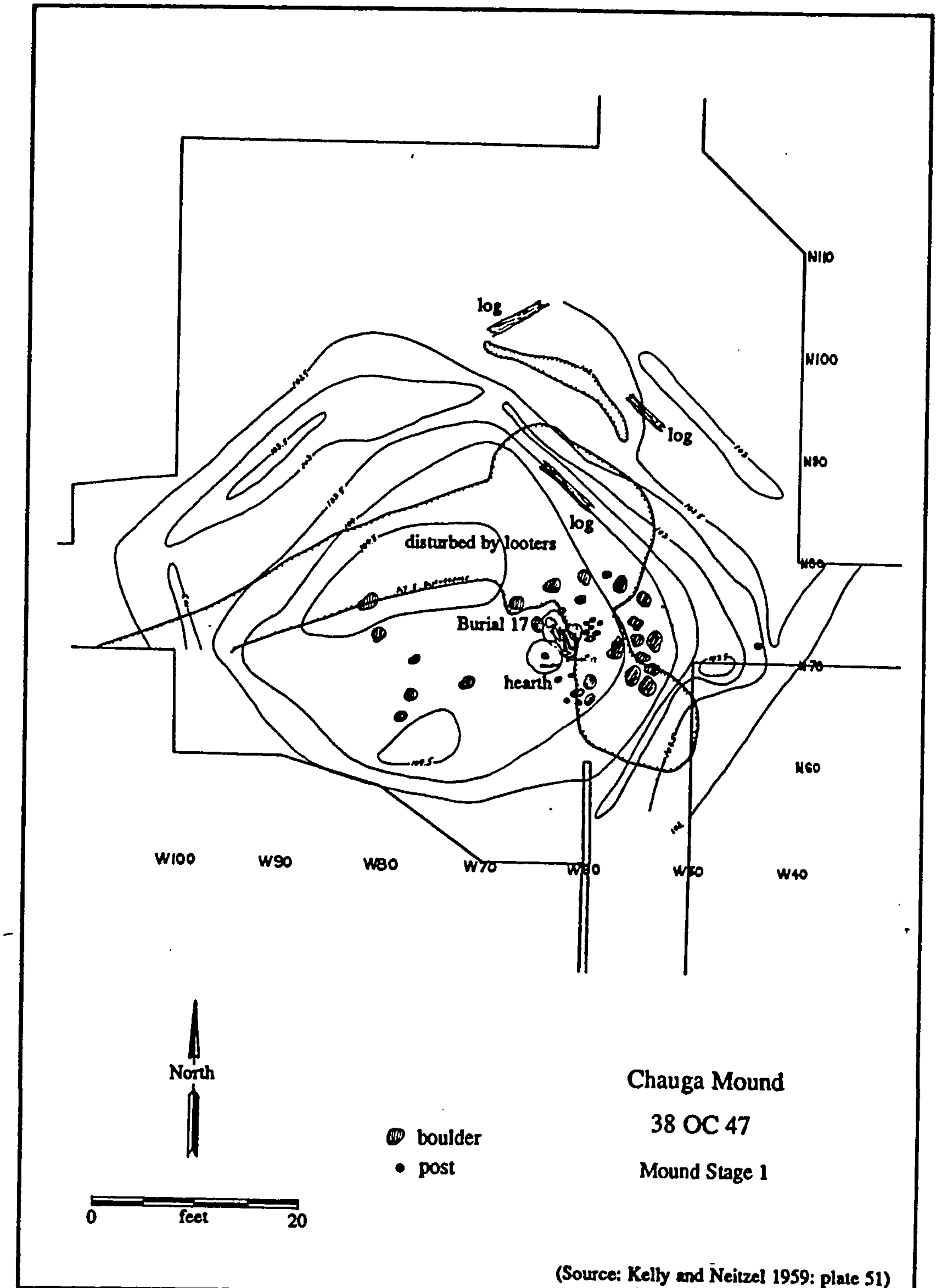


Figure 60. Mound Stage 1 at the Chauga Site (38Oc47).

the six Jarrett phase construction stages. Stage 2 was similar in size to Stage 1 (Figure 61). Fragments of what may have been an extensive log covering were observed on Mound Stage 3, on the northwest and northeast sides of the mound (Figure 62). This covering is like that noted over Mound Stage 1 at Tugalo, which also dated to the Jarrett phase. Mound Stages 2 and 4 at Chauga had unusually large numbers of boulders on their margins, although there was no evidence for a cap of boulders over either summit, like that noted over Mound Stage 5 at Estatoe (Figures 61, 63).

Large numbers of bone tools were found in the fill of Mound Stages 1 and 2, an incidence the authors described as similar to deposits at Mound B at Etowah (Kelly and Neitzel 1961:12). A copper repoussé plate with a figure of an Eagle dancer found with Burial 48 on the surface of Mound Stage 3 may have been produced at Etowah (Kelly and Neitzel 1961:52, 62). This, and the early Mississippian pottery assemblage, which was dominated by Etowah motifs, comprise limited evidence to suggest the site may have been founded by people from the Etowah paramount chiefdom. Arguing against such an interpretation, however, is the fact that the principle Etowah ceramic motif present at Chauga, the ladder-based oval, differs from the ladder-based diamond motif found at Etowah (Kelly and Neitzel 1961:37). This may be more a matter of chronology, and the periods of occupation that have received the most attention at the Etowah site. Most work at that center has focused on the Wilbanks and Lamar occupations, which probably date to well after the founding of that center (Larson 1989). Sears (1958:164-169) has shown, through stratigraphic analyses of ceramics from the nearby Wilbanks site, that the barred oval motif occurs earlier than the barred diamond in the Etowah sequence. The occupation at Chauga may thus be fairly early. Since a substantial terminal Woodland/initial Mississippian Woodstock component is present in the premound and early mound levels at Chauga, either local development or, possibly, population movement into the area very early during the Etowah or immediate pre-Etowah period

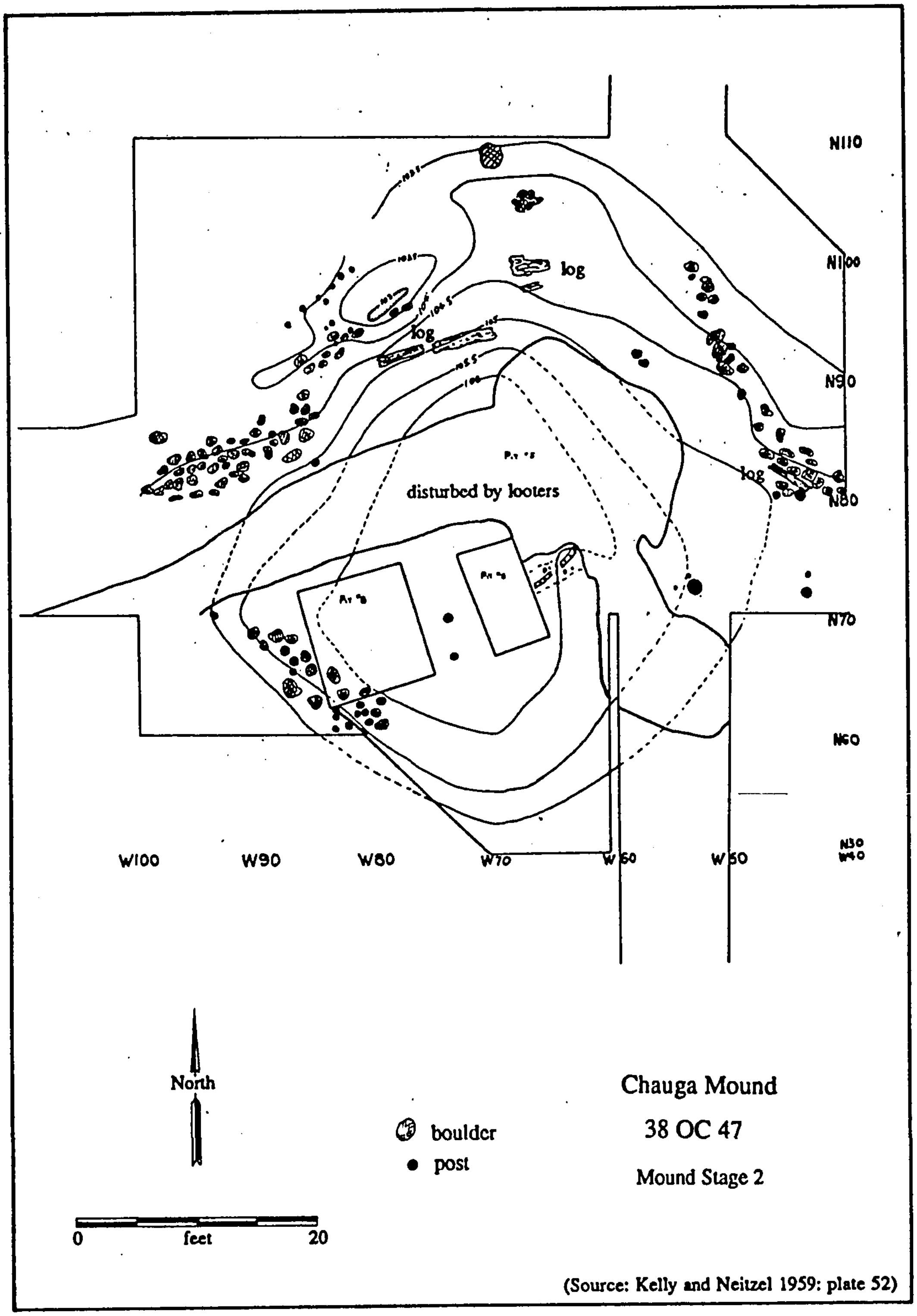


Figure 61. Mound Stage 2 at the Chauga Site (38Oc47).

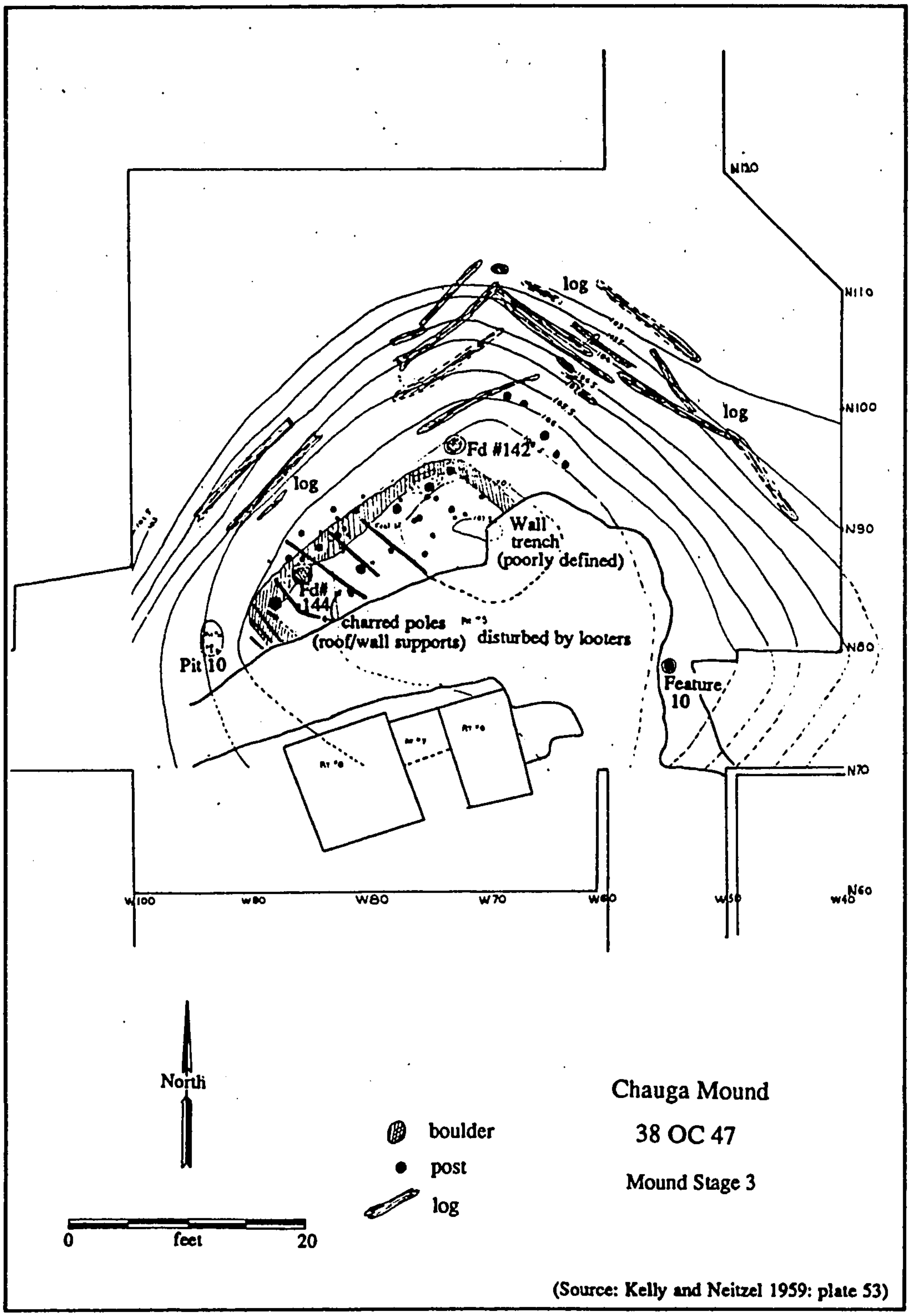


Figure 62. Mound Stage 3 at the Chauga Site (38Oc47).

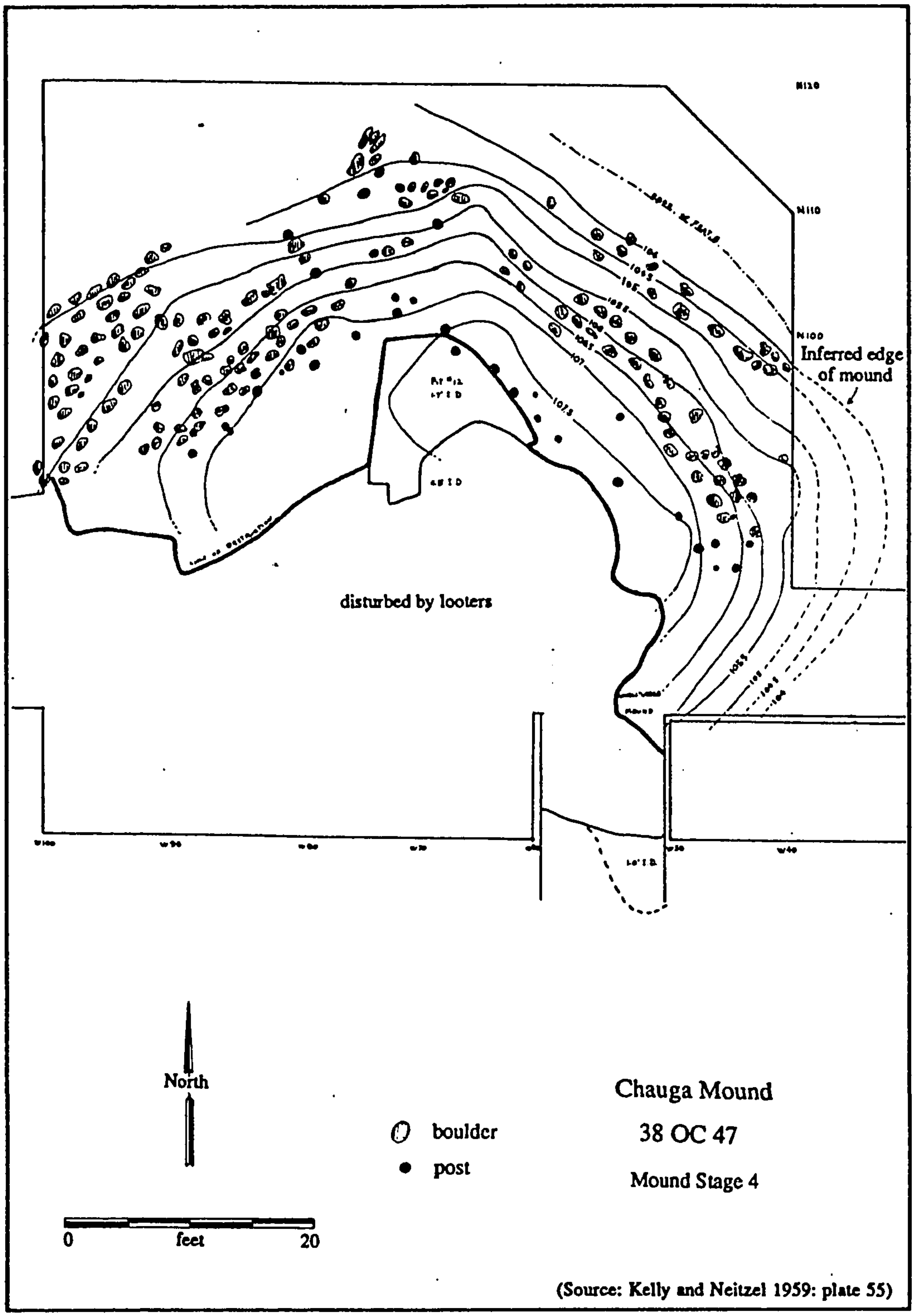


Figure 63. Mound Stage 4 at the Chauga Site (38Oc47).

may have occurred.

No evidence for structures was found atop Stages 1 and 2 which, occurring in the central part of the mound, had been largely cored out by looters. Fragmentary traces of a large wall trench structure were found atop Stage 3. This building had burned and the debris had been cleared off prior to the construction of Stage 4. Linear arrangements of postmolds were also noted atop Stage 4, indicating a structure had been present. The presence of ash on the side of the mound suggested an episode of burning, but since the summit surface had been damaged by plowing, this could not be ascertained with any certainty.

Evidence for the remaining stages survived only on the mound flanks. Stage 6 was the last capped, and a palisade or retaining wall was built around at least part of its base (Kelly and Neitzel 1961:19). While an association of this palisade with burials placed around the mound perimeter was inferred, its appearance just prior to site abandonment may suggest an increased concern for security at this time. While Stages 7 and 8 represented a fairly appreciable additions, raising the height of the mound 30 cm or more, the final two construction episodes, Stages 9 and 10, were minor, and may have been little more than "apron-like appendages" or ramps added to the mound (Kelly and Neitzel 1961:57).

A large block unit encompassing 2450 square feet [248.8 sq. m] was opened in the village area about 25 m southeast of the mound (Figure 64). Numerous postmolds were found, including a number of lines and arcs, but no complete structures were identified. Two faint narrow parallel linear stains, possibly from a palisade or plank wall line, were found at the edge of the block in two areas, but their age and function could not be determined. The features in the village included both prehistoric and historic Cherokee materials. In all, 53 burials were found in the mound and nine in the associated village area (Kelly and Neitzel 1961:33-34; see Chapter VI).

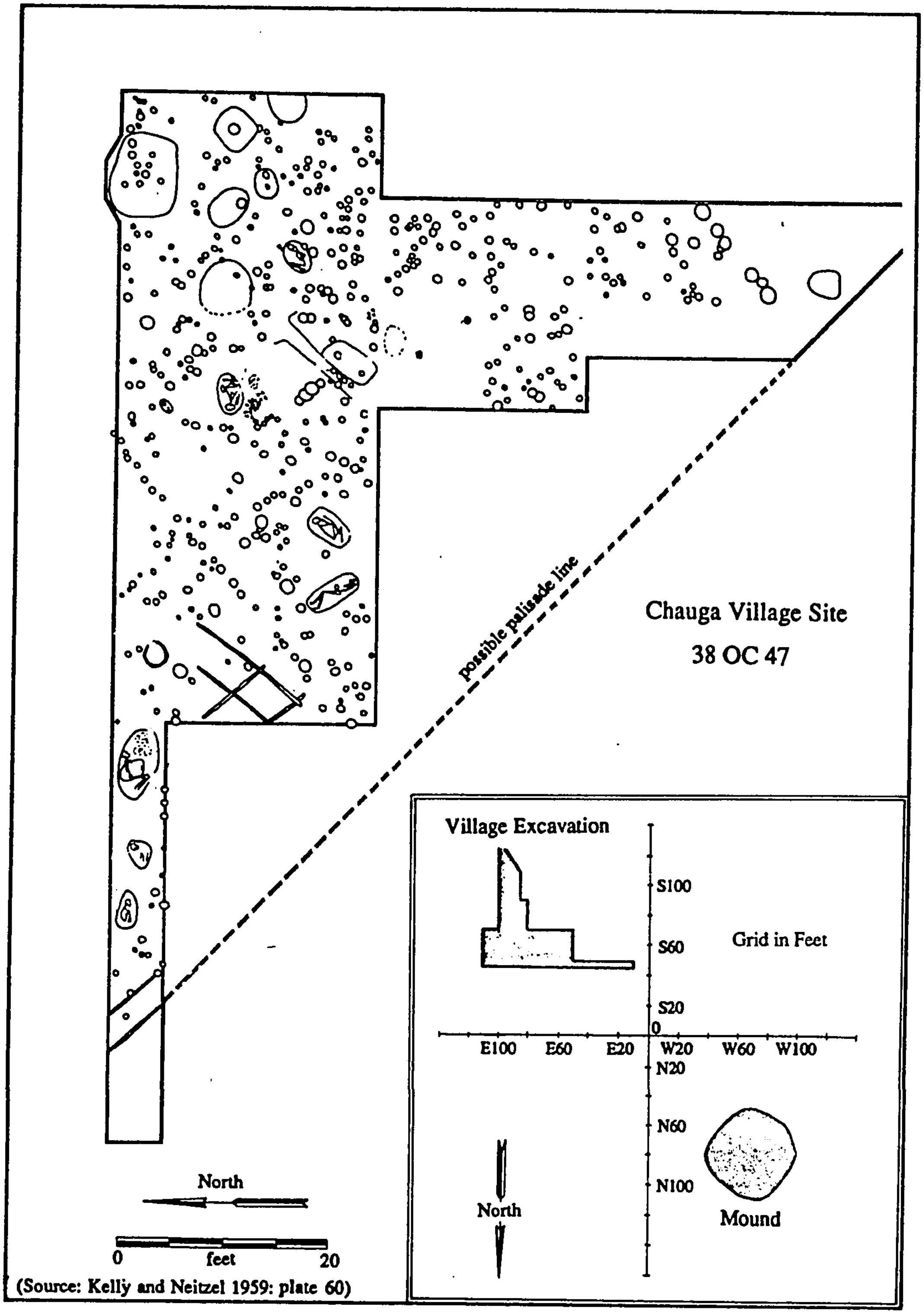


Figure 64. The Village Excavations at the Chauga Site (38Oc47).

I. C. Few

At the I. C. Few site (38Pi2) on the Keowee River in Pickens County, South Carolina, evidence for Late Woodland through Mississippian Napier, Etowah, Savannah, Early Lamar/Pisgah and historic Cherokee components was found during excavations conducted in 1967 as part of the Keowee Reservoir project (Grange 1972). Fieldwork at the site included the excavation of one of three small low circular mounds present, and a number of transects in an associated village area. Located near Fort Prince George, which was established in the mid-18th century, the area was visited by Bartram (1791:332; see Appendix A) in 1776, who reported the present of "several Indian mounts or tumuli, and terraces, monuments of the ancients, at the old site of Keowe." Because of the documented Cherokee occupations near the fort, prior to the fieldwork the mound was assumed to date to the historic era.

Historic artifacts were rare on the I. C. Few site, and none were found in features, however, indicating most occupation dated to the prehistoric era. The mound appears to have been built in a single construction episode over a burned, poorly defined structure (Grange 1972:52). The presence of numerous hearth, pit, and post features, including evidence for two or more small circular structures, indicated a village area was located around the mound. Four dates from the mound were obtained (Grange 1972:183). These were 1060±60 BP (Uga-322) [calibrated AD 985; Stuiver and Pearson 1986:830]; 1065±60 BP (UGa-3240 [calibrated ca. AD 982; Stuiver and Pearson 1986:811]; 1175±65 BP (UGa-325) [calibrated ca. AD 880; Stuiver and Pearson 1986:812]; and 725±75 BP [calibrated ca. AD 1275; Stuiver and Pearson 1986:811]. The ceramics in the mound fill and surrounding site features, however, were characterized by distinctive Early Lamar and Pisgah attributes, including notched and incised collared rims, rosettes and finger-pinched rim strips. Rectilinear design motifs dominated the complicated stamped assemblage. The primary period of use of the mound and surrounding village area was, the ceramics indicate, during the Rembert phase, from ca. A.D. 1300 to 1450, with construction possibly beginning somewhat earlier, during the Beaverdam phase (Grange 1972;110-175; Anderson et al. 1986:35). The inappropriate radiocarbon dates appear to have been the result of contamination from earlier deposits. An appreciable incidence of simple stamping was noted in the site assemblage, together with a few sherds of Napier Complicated Stamped. Moderate to extensive site occupation during the Middle/Late Woodland is indicated, and the early dates may come from debris dating to those occupations that was used as mound fill.

The mound, which was approximately 20 m in diameter, was elevated ca. 0.5 to 0.7 m above the surrounding floodplain. Unfortunately, it had been very badly damaged by looting and plow reduction, so its original shape is unknown. Two bundle and eight flexed burials were found in the mound, and four other flexed burials were found in the village area to the north of the mound (Table 5). Eight of the burials in the mound had associated grave goods compared to only one in the village area. All but one of the burials in the mound that could be identified to sex were male, while two of the three identifiable burials in the village were female. Children and infant remains were underrepresented in both areas. One of the bundle burials, of an adult male, had 1373 shell beads around the skull. The long bones of this burial, which was fragmentary, had rodent gnawing marks on them, indicating the body may have been exposed for some time prior to burial. Burials with shell beads were found only in the south part of the mound, suggesting this area was reserved for higher status individuals.

Excavation Assemblages: Non-Mound Sites

While most of the mound sites in the Savannah River Valley have seen at least some level of professional archaeological examination, until quite recently comparatively little effort was directed to non-mound Mississippian sites. In recent years this pattern

Table 5. Mississippian Burials from the I. C. Few Mound: Summary Data by Provenience.

Burial Number	Sex	Age	Alignment	Provenience	Grave Goods
1	M	Adult	Flexed	Main mound	One unworked stone*
2	?	Adult	Flexed	Main mound	None
3	?	?	?	Main mound	None
4	M	Adult	Bundle	Main mound	1373 shell beads
5	M	Adult	Semi-flexed	Main mound	Two unworked stones*
6	?	Juvenile	Bundle	Main mound	186 shell beads, 2 shell pins
7	F	Adult	Flexed	Main mound	161 shell beds, 2 shell gorgets, 1 soapstone gorget
8	?	?	?	Main mound	One clay pipe, one triangular projectile point
9	?	Infant	?	Main mound	182 shell beads
11	M	Adult	Flexed	Main mound	49 shell beads, one hematite ball, one triangular projectile point, and one quartz crystal
12	F	Adult	Flexed	Village	None
13	?	Adult	Flexed	Village	None
14	F	Adult	Flexed	Village	One large and one small stone disk
15	M	Adult	Flexed	Village	None

(No Burial 10 excavated)

* may not be grave goods

Sources: Grange 1972, Stout 1972

has changed dramatically, due primarily to federal environmental (CRM) legislation, which has directed research attention to a wide array of site types. As a result, a number of Mississippian village, hamlet, and special activity sites have been examined in the Savannah River basin in recent years (Table 6). Most of these sites were found in the Richard B. Russell Reservoir, and were excavated in the 1980s. As a result, given the greater concern for comprehensive artifactual and paleoecological data collection that has characterized most recent excavations, our knowledge of the archaeological assemblages at these sites is better than it is for many of the mound centers.

Rucker's Bottom (9EB91)

Rucker's Bottom was a large, multicomponent prehistoric site in Elbert County, Georgia extending for almost a kilometer along the Savannah River immediately to the north of the confluence of Van Creek, a small tributary. Extensive excavations were conducted at the site from 1980 to 1982 in conjunction with the work in the Richard B. Russell Reservoir, documenting a sequence of prehistoric occupations spanning the PaleoIndian through the Mississippian periods, when Beaverdam and Rembert phase villages were present (Anderson and Schuldenrein 1985:251-590). The site was situated on a well-drained terrace elevated 4 to 6 m above the river channel. A low-lying swale was situated behind the levee, between it and the Van Creek floodplain, which drained the terrain to the west. This swale would have been a seasonally flooded marsh, enhancing the microenvironmental variability in the site area. The site, in one of the largest tracts of bottomland along this stretch of the Savannah, was thus adjacent to both the main river channel and a swampy, partially filled oxbow or swale. The location offered access to extensive arable land and to a range of riverine and backswamp resources. The occurrence of a major Mississippian settlement in such a setting is thus not altogether unexpected (Larson 1972; Murphy and Hudson 1968; B. Smith 1978:480-

Table 6. Mississippian Non-Mound Excavation Assemblages from the Savannah River Valley.

Site Number	Site name	Site Type	Phases of Primary Occupation	References
9Eb91	Rucker's Bottom	Village	Beaverdam, Rembert	Anderson and Schuldenrein 1985
9Eb357	Clyde Gulley	Village	Jarrett	Tippitt and Marquardt 1984
38An8	Simpson's Field	Hamlet?	Beaverdam/Rembert	Wood et al. 1986
9Eb92	Beaverdam Site Group	Hamlet?	Beaverdam, Rembert	Campbell and Weed 1984
9Eb207	Beaverdam Site Group	Hamlet?	Beaverdam	Campbell and Weed 1984
9Eb208	Beaverdam Site Group	Hamlet?	Beaverdam	Campbell and Weed 1984
9Eb219	Beaverdam Site Group	Hamlet?	Jarrett, Beaverdam	Campbell and Weed 1984
38An126	Big Generostee Creek	Hamlet?	Rembert	Wood et al. 1986
9Eb76	Rufus Bullard	Village?	Beaverdam, Rembert	Anderson and Schuldenrein 1985
9Eb382	Van Creek	Hunting Camp?	Rembert	Wood et al. 1986

486).

Field Investigations. The Rucker's Bottom site, which had been in pasture for many years, was discovered in 1969 when Hutto (1970:28) located nine "scattered chips... along eroded areas on the Savannah riverbank." In 1977 the site was revisited by Taylor and Smith (1978:188, 388, 427), who noted that surface visibility was effectively zero. A 1 by 2 m testpit opened to a depth of 1.25 m in the northern part of the terrace produced an appreciable number of Mississippian sherds, pieces of debitage, and other artifacts. Based on these findings the site was revisited in 1979, and three 2-m and one 1-m test pits were opened (Gardner et al. 1983:116-132). Dense Mississippian remains and several possible postmolds were found in the fill of the three larger units opened in the northern part of the terrace, while stratified Archaic remains were found in the 1 by 1 m unit opened some 160 m to the south. It is now known that the tests yielding Mississippian artifacts were placed almost exactly in the middle the fortified Rembert phase village.

An intensive testing program was conducted at the site in 1980, followed by two seasons of large scale excavations in 1981 and 1982. The 1980 testing included controlled surface collections over the entire site area followed by the excavation of twenty 4 by 4 m and two 2 by 2 m test pits dispersed at roughly 20 m intervals along the terrace, 25 backhoe trenches to collect geoarchaeological data and probe for deeply buried deposits, and four bulldozer transects to look for subplowzone features (Figure 65). Extensive Woodland remains were found in the plow zone at the south end of the site, underlain by stratified Archaic assemblages at depths of up to 1.0 m below the surface. Dense Woodland and Mississippian materials were found in a dark, well-defined midden extending over almost 20,000 sq. m in the central and northern parts of the terrace. The thickness of the midden varied, with the deepest deposits near the terrace crest, and thinning out as the swale or the river margin was approached. Pits, posts, hearths, and

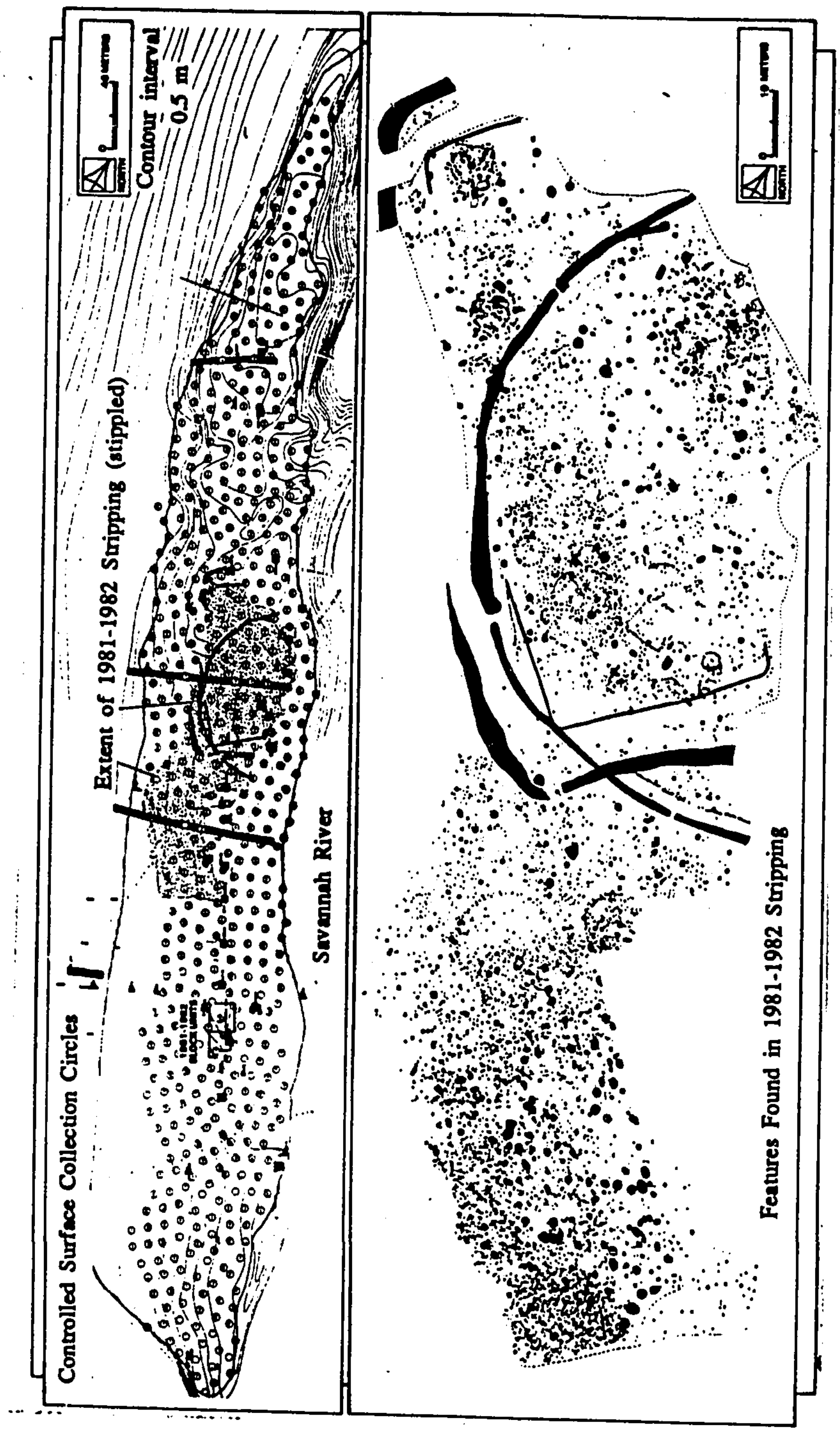


Figure 65. All Excavation and Controlled Surface Collection Units, 1980-1982 Field Seasons, at the Rucker's Bottom Site (9Eb91).

daub concentrations were observed in many of the units, most recognized at or near the base of the midden, intruding into the underlying lighter soils. A thin stratum of Mississippian pottery was found at a depth of almost a meter in the swale, indicating use of this area.

In 1981 a 16 by 24 m block was opened into the Archaic and Woodland deposits at the south end of the terrace. In all, 141 features, 254 diagnostic projectile points, 785 tools, and 134,102 pieces of debitage were found in these units. Almost all of the material was Woodland or earlier in age; only three of 308 Mississippian Triangulars and less than 50 of the more than 15,000 diagnostic Mississippian sherds found on the site came from these blocks, indicating the degree of spatial separation between the Mississippian and earlier pre-Mississippian components on the terrace (Anderson and Schuldenrein 1985:255, 321).

In 1981 and 1982, using first a D-6 bulldozer and then a motor grader, the plow zone was removed from an approximately 10,000 sq. m area in the central and northern portions of the terrace. The area examined formed a contiguous if somewhat irregular block approximately 200 by 50 m in extent (Figure 65). Once the feature level was reached with the heavy equipment, final clearing was done with a small tractor pulling a scraping blade, followed by shovel skimming. Features exposed in this manner were flagged, scribed with a trowel, and then mapped using an alidade and plane table. Although an extensive feature assemblage was found, factors of preservation constrain interpretation somewhat. Historic plowing had occurred over the entire area, and plow scars were evident in the upper parts of many features. Additionally, many shallow features were lost during the stripping operations, when the midden was removed. In spite of these problems, considerable information about the Mississippian community plan and occupational history was recovered. The stripping program located several thousand features including two ditch and stockade lines, evidence for upwards of 20 structures, and well over 100 large pits.

Features were selected for excavation employing both judgemental and random sampling procedures. While many features were intuitively selected, a simple random sample of 212 features was excavated in 1981 to evaluate the exposed assemblage and to ensure that features were examined that might otherwise have been avoided. Three-quarters of this sample proved to be cultural features, most dating to the Mississippian period. In all, 584 features were excavated, 457 of which could be identified as Mississippian in age. Counting three Mississippian features found in the 16 by 24 m block, a total of 460 Mississippian features were excavated at Rucker's Bottom. All feature fill was waterscreened through 1/8-inch [0.32 cm] mesh, and 402 four-liter flotation samples were collected and processed using a modified SMAP machine (Watson 1976) to maximize the recovery of paleosubsistence data and small artifacts. Project zooarchaeologists were on the site throughout the first and second field seasons (Scott 1985), while the ethnobotanist visited the project the second season to test the data recovery procedures as well as collect samples of the local flora (Moore 1985). Fifty-eight backhoe trenches were opened over the site area to examine the archaeological, geomorphological, and paleoenvironmental deposits. The backhoe proved useful in delimiting the semicircular Mississippian palisade ditch, a small portion of which had been exposed in the stripping. Extrapolating the arc of the ditch, additional segments were detected using short cross trenches, quickly defining its extent.

Late Woodland Settlement. Later Woodland ceramics were observed over a large area at the south end of the Rucker's Bottom site, with several pronounced artifact and feature concentrations evident. A dense occupation, probably consisting of a number of hamlets or one or more small villages, appears to have been present during this period. One definite and one or more possible Middle or Late Woodland structures were found in the 16 by 24 m block unit opened at the south end of the terrace (Figure 66), and a number of

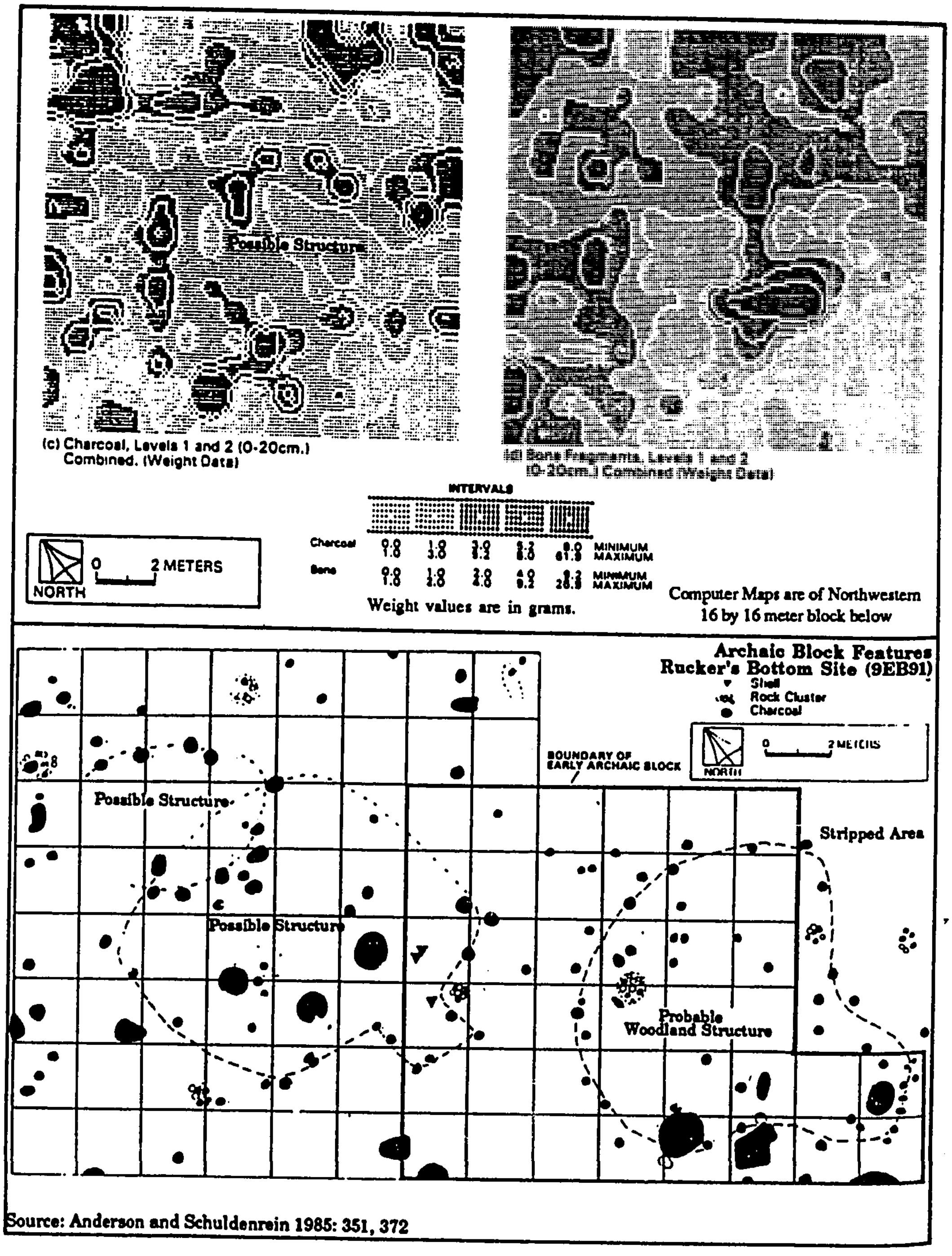


Figure 66. The Late Woodland Feature Assemblage at Rucker's Bottom (9Eb91).

later Woodland features were found toward the south end of the stripped area. The well-defined structure was an oval-shaped grouping of posts roughly 7 by 10 m in extent, with central support posts and a jumbled clustering of posts immediately to the southeast that may represent an entranceway or an associated storage facility. Several large pits and a small shell lens were found along the southern edge of the structure that may reflect storage facilities and trash disposal, respectively. The fill of these features included small numbers of plain, check, and simple stamped ceramics, and an occasional Yadkin Triangular or small stemmed point, suggesting a Middle or later Woodland age for the structure. No Mississippian diagnostics were found in these features.

One or more additional structures may have been present in the area to the north of the first structure, where an irregular concentration of pit and post features was found. A circular structure roughly 8 m in diameter is suggested by the occurrence of large pits near the south side of the post concentration, an arc of charcoal that occurred in this area, and the hint of an entranceway to the southeast (Figure 66). A smaller circular structure may have been located just to the north. As with the first structure, plain and simple stamped ceramics were found in the fill of many of the features. Probable later ceramics present in low numbers in several features included a burnished plain ware with a narrow rim fold and Swift Creek Complicated stamped pottery. Uncorrected radiocarbon dates of 770±45 BP (DIC-2295) [calibrated ca. ca. AD 1262; Stuiver and Pearson 1986:811, 828] and 860±50 BP (DIC-2296) [calibrated ca. AD 1181; Stuiver and Pearson 1986:829] were obtained from the fill of two of the large pits, suggesting a terminal Late Woodland/initial Mississippian age for these structures.

In spite of an intensive program of flotation and laboratory ethnobotanical analysis, no evidence for domesticates was found in any of the Late Woodland (or earlier) features excavated at the site. Carbonized nutshell was fairly common, indicating possible fall occupations, and appreciable use of wild plant foods. Shellfish were collected and eaten in small quantity, and a thin-section analysis of growth rings indicated late fall or spring collection (Blanchard and Claassen 1985:672). The shellfish and nutshell data, when combined with the evidence for a fairly sturdy construction, suggest that these structures may have been winter houses (Faulkner 1977; Swanton 1946:368).

Mississippian Community Organization. Extended village occupation is indicated by the numerous features, house patterns, burials, and ditch and stockade lines found at Rucker's Bottom. To facilitate examination and discussion of the feature assemblage, the stripped area was subdivided into a series of strata, each consisting of a structure or ditch line, or a concentration of features such as the plazas or the high feature density areas around them (Figure 67). Through radiocarbon and ceramic cross-dating, the Mississippian artifact and feature assemblage was dated to between ca. A.D. 1200 and A.D. 1450 (calibrated), during the Beaverdam and Rembert phases. Occupation appears to have been continuous over this interval, with settlement shifting from an open, roughly circular arrangement of houses about a central plaza in the south-central part of the terrace during the Beaverdam phase to houses within first a semicircular and later a rectangular ditched and stockaded enclosure in the north-central part of the terrace during the Rembert phase.

The Mississippian community to the south of the enclosures dated to the Beaverdam phase and was centered about a comparatively open area that may have been a plaza. Besides having a markedly lower feature density, several large rock-filled pits were present may have functioned as trophy or gaming post supports. Around the possible plaza were the remains of numerous structures. Unfortunately, resolving patterns in the dense feature scatter proved difficult, particularly since many structures were only partially represented. When they could be identified, buildings were typically circular in shape and from 4 to 8 m in diameter, although evidence for a few squared structures was also noted. A large building approximately 14 m in diameter appears to

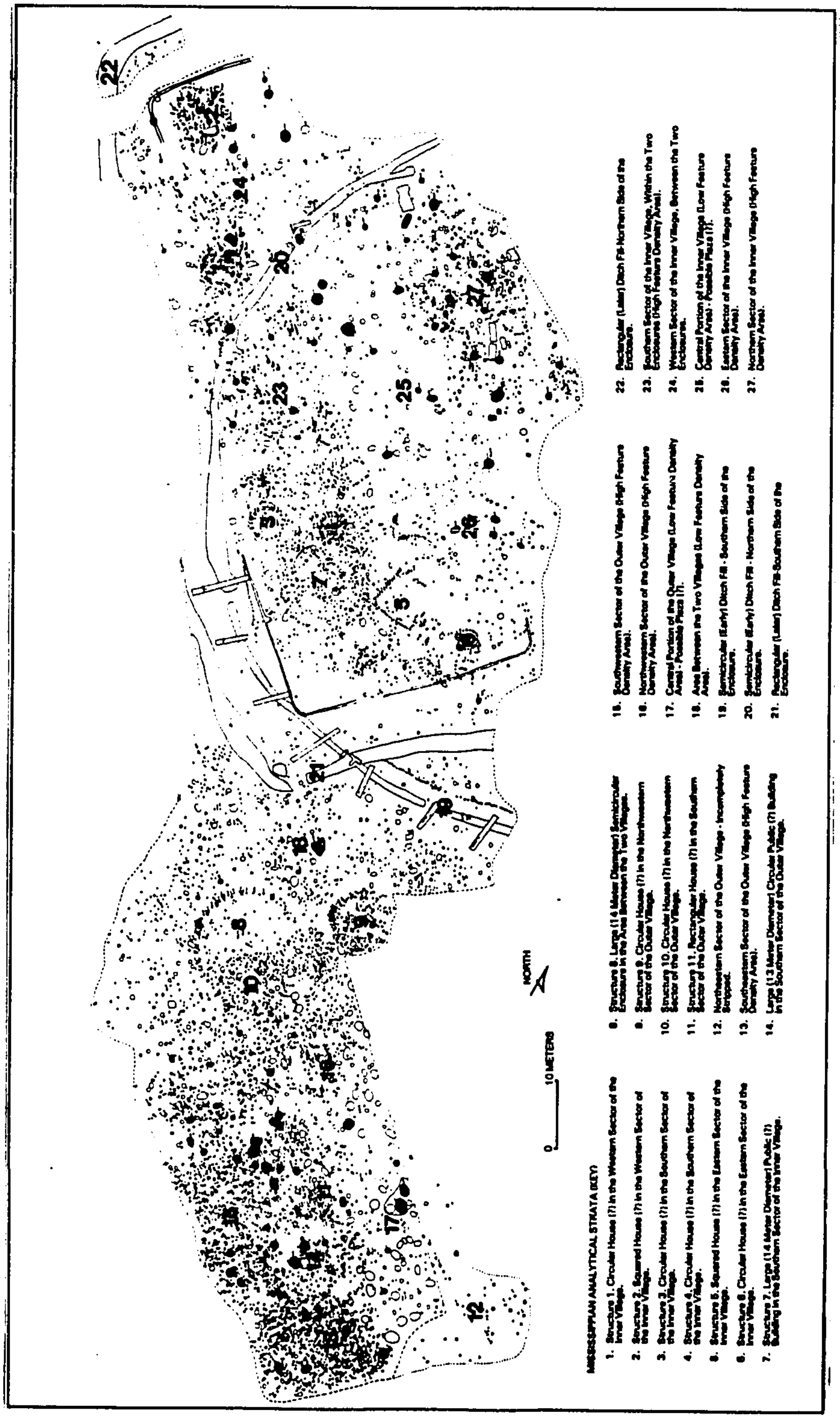


Figure 67. The Mississippian Feature Assemblage at Rucker's Bottom (9Eb91).

have been present in the south-central part of the village, facing the plaza. This structure was roughly similar in plan to descriptions of 18th-century Cherokee and Creek town houses or rotundas (Bartram 1791:452-454; Hawkins 1848:71-72; Swanton 1928:170-188). Burials were found scattered over the village, some below house floors, and several tight clusters of burial pits were found, suggesting family interments. One burial from the plaza had a large number of shell beads with it, suggesting higher status individuals may have been interred in this area. No ditches or well-defined stockade lines were found associated with this early village, and it appears to have been unfortified.

The later, Rembert phase village on the northern part of the terrace was initially characterized by a semicircular and then later a rectangular ditch and stockade network. A moderate decrease in feature density was evident between the two villages, indicating a deliberate relocation of settlement occurred. This intervening area saw some construction activity, as indicated by the partial postmold patterns from a number of structures, including a very large arc of posts. This arc, which was poorly defined on its south side, may have been a public building or, more likely, given the absence of interior support posts, some kind of an open-air enclosure. A massive pit, located approximately 10 m south of the southern opening in the later rectangular ditchline, was also present in this area, and may have been a major post support.

Like the earlier village, a pattern of houses or areas of high feature density about a plaza, or area of comparatively low feature density, characterized the Rembert phase village. As in the plaza area in the earlier village, several large rock filled pits were found in the presumed plaza area inside the enclosures. Although containing up to several hundred kg of large rocks, these pits typically had only low to moderate amounts of sherds, bone, or other midden debris in their fill. Low artifact density, in fact, characterized many of the features found in the plazas on the site, suggesting somewhat less surface debris, or intentional refuse disposal elsewhere. Such a pattern is in keeping with historic accounts of Cherokee and Creek village maintenance which, as documented below, describe the sweeping of plaza areas.

A large circular structure ca. 13 to 14 m in diameter (Strata 7, Figure 67), a possible town house or rotunda, was found in the southern part of the enclosed village, in approximately the same position with respect to the plaza as the large structure observed in the earlier village. Smaller circular and square, presumably domestic structures were also found within the ditch lines. Over the site assemblage there was a suggestion that squared buildings with rounded corners became more prevalent over time. At least two of the three squared structures found within the enclosure could be unambiguously dated to the Rembert phase, based on the occurrence of modified rims in associated features.

The ditches themselves were from 1 to 2.5 m across and from 0.5 to 1.2 m deep. Distinct gaps were found in both ditch lines, three in the earlier and one in the later, that may delimit entranceways. The ditch fill near these gaps contained large quantities of artifactual debris, far more than observed in other sections, suggesting a pattern of intentional refuse disposal near entranceways. As at Irene, extensive debris was found in the ditch immediately behind the Rembert phase council house at Rucker's Bottom, although unlike Irene, where only vessel fragments were found, in this case both pottery and food remains were present. An entrance gap was also located here in the semicircular ditch, however, something that may have prompted more generalized dumping. Rows of posts from probable banked stockade lines were found in several areas from 3 to 6 m inside these ditch lines. The rectangular enclosure clearly intruded the semicircular one and, given its larger size, indicates the Rembert village expanded somewhat over its history.

Plaza Areas. As noted, a marked decline in the density of post stains was evident in the northern and eastern parts of the Beaverdam phase village, and across the central part of the enclosed Rembert phase village. Fewer structures and far less rebuilding of structures occurred in these areas than in the areas around them. These open spaces have been interpreted as plazas, a feature characteristic of both Creek and Cherokee village organization (Swanton 1928:170-190). A fair number of large pits were present in both plazas, some of which contained burials, while others were supports for major posts. No unambiguous evidence was found for a formal square ground, a square-to-rectangular arrangement of four covered sheds serving as seating areas, although this was a near universal feature on 18th- and 19th-century Creek town sites (Bartram 1789:54-56; Swanton 1928:170-183). While nothing resembling such a feature was found in the southern village, a squared structure was found south of the rotunda in the northern village (Figure 68). Interpreting its function is difficult, however, although given the absence of major interior supports, it may well have been comparatively open.

Bartram (1789:34-36) has provided a detailed description of a Creek plaza, or chunky yard, that included several of the features noted at Rucker's Bottom:

> The Chunky-Yard of the Creeks, so called by the traders, is a cubiform area, generally in the centre of the town, because the Public Square and the Rotunda, or great winter Council-house, stand at the two opposite corners of it. It is generally very extensive, especially in the large old towns, is exactly level, and sunk two, sometimes three, feet below the banks or terraces surrounding it, which are sometimes two, one above and behind the other, and are formed of earth cast out of the area at the time of its formation; these banks or terraces serve the purposes of seats for the spectators. In the centre of the yard there is a low circular mount or eminence, in the centre of which stands erect the chunky-pole, which is a high obelisk, or four square pillars declining upwards to an obtuse point, in shape and proportion much resembling the Egyptian obelisk. This is of wood, the heart or inward resinous part of the sound pine-tree, and is very durable; it is generally from thirty to forty feet high, and to the top of this is fastened some object to shoot at with bows and arrows, the rifle, etc., at certain times appointed. Near each corner of the lower and further end of the yard stand erect a lesser pillar or pole, about twelve feet high: these are called the slave-posts, because to them are bound the captives condemned to be burnt, and these posts are usually decorated with the scalps of their slain enemies; the pole is usually crowned with the white dry skull of an enemy. In some of these towns I have counted six or eight scalps fluttering on one pole in these yards. Thus it appears evidently enough that this area is designed for a public place of exhibition of shows and games, and formerly some of the scenes were of the most tragical and barbarous nature. ..I am

Figure 68. The Rotunda and Possible Square Ground in the Rembert Phase Village at Rucker's Bottom (9Eb91).

> convinced that the Chunky-Yards now, or lately, in use amongst the Creeks, are of very ancient date - not the formation of the present Indians. But in most towns they are cleaned out and kept in repair, being swept clean every day, and the poles kept up and decorated in the manner I have mentioned [Bartram 1789:34-36; also cited in Swanton 1928:188-189].

The central location of the Creek chunky yard in the village, near a large public building, was a pattern seemingly duplicated at Rucker's Bottom, where the plaza areas in both the northern and southern villages were located just to the north of large circular buildings that may have been rotundas. Chunky poles or major posts are indicated by the large, rock-filled pits, some of which were clearly post supports, near the center of the plazas. Comparable major post supports, it should be noted, have been found in the plazas at the King site in northwest Georgia (Hally et al. 1975:60), the Ledford Island site in southeastern Tennessee (Sullivan 1987:20), the Cemochechobee site in southwest Georgia (Schnell et al. 1981:34-35), and at the Zebree site in northeast Arkansas (Morse and Morse 1980:21-23). Finally, the low artifact density noted in many plaza features suggests these areas were periodically swept clean.

Domestic Structures. Over 40 circular or rectangular arrangements of posts from possible buildings were found surrounding the two plaza areas at Rucker's Bottom. Domestic and public structures, as well as storage or other non-residential structures appear to have been present in both villages. Buildings over 3 or 4 m in extent were presumably domestic residences or, if very large, that is, over 10 to 12 m across, public buildings. Mississippian village life was described in some detail by early explorers, and differences in structure size and construction are linked to functional and seasonal considerations and to the status of their owners. A 1540 account from the De Soto entrada of a Mississippian village in south-central Georgia illustrates some of the variability observed:

> The houses of this town were different from those behind, which were covered with dry grass; thenceforward they were roofed with cane, after the fashion of tile. They are kept very clean: some have their sides so made of

> clay as to look like tapia. Throughout the cold country every Indian has a winter house, plastered inside and out, with a very small door, which is closed at dark, and a fire being made within, it remains heated like an oven, so that clothing is not needed during the night-time. He has likewise a house for summer, and near it a kitchen, where fire is made and bread baked. Maize is kept in barbacoa, which is a house with wooden sides, like a room, raised aloft on four posts, and has a floor of cane. The difference between the houses of the masters, or principal men, and those of the common people is, besides being larger than the others, they have deep balconies on the front side, with cane seats, like benches; and about are many barbacoas, in which they bring together the tribute their people give them of maize, skins of deer, and blankets of the country [Elvas in Bourne 1904, I:53].

Summer and winter houses have been reported from throughout the southeast on prehistoric Mississippian sites (Faulkner 1977), and comparable structures were undoubtedly present at Rucker's Bottom. Considerable variability in size and construction was evident in the structures on the site; some had well-defined wall lines with closely set posts, while others were more open or ambiguous in size and shape. The larger well-defined structures may be from winter houses, while the less well-defined post clusters as well as many of the seemingly isolated or unconnected posts may be from summer houses, lean-tos, storage buildings or barbacoas, or other features.

Council Houses or Rotundas. Evidence for possible public buildings, in the form of rings of posts ca. 13 to 15 m in diameter were found on the south sides of both the Beaverdam and Rembert phase villages at Rucker's Bottom (Strata 7 and 14, Figure 67). A detailed description of Creek town life, and the rotunda or assembly room (also sometimes called a "hot house"), was made by Benjamin Hawkins around 1799:

> The Micco, counsellors and warriors, meet every day, in the public square; sit and drink a-cee, a strong decoction of the cassine yupon, called by the traders, black drink; talk of news, the public and domestic concerns, smoke their pipes, and play Thla-chal-litch-cau, (roll the bullet.) Here all complaints are introduced, attended to, and redressed. They have a regular ceremony for making, as well as delivering the a-cee, to all who attend the square...the rotunda or assembly room, called by the traders, "hot-house." This is near the square, and is constructed after the following manner: eight posts are fixed in the ground, forming an octagon of thirty feet diameter. They are twelve feet high, and large enough to support the roof. On these, five or six logs are placed, of a side, drawn in as they rise. On these, long poles or rafters, to suit the height of the building, are laid, the upper ends

> forming a point, and the lower ends projecting out six feet from the octagon, and resting on posts five feet high, placed in a circle round the octagon, with plates on them, to which the rafters are tied with splits. The rafters are near together, and fastened with splits. These are covered with clay, and that with pine bark; the wall, six feet from the octagon, is clayed up; they have a small door into a small portico, curved round for five or six feet, then into the house [Hawkins 1848:71-72].

A second quotation, from Bartram, provides additional detail about Creek rotundas:

> The great council house or rotunda is appropriated to much the same purpose as the public square, but more private, and seems particularly dedicated to political affairs. It is a vast conical building or circular dome, capable of accommodating many hundred people; and constructed and furnished within, exactly in the same manner as those of the Cherokees already described, but much larger than any I had seen of them; there are people appointed to take care of it, to have it daily swept clean, and to provide canes for fuel, or to give light [Bartram 1791:448-449].

The use of cane for light and fuel was supported by the ethnobotanical analysis at Rucker's Bottom; charred cane was found in appreciable numbers of Mississippian features, including in several possible hearths (Moore 1985). As noted previously, the ditch behind Structure 7, the Rembert phase rotunda, was full of debris, a pattern of trash disposal also noted behind the rotunda at Irene (Caldwell and McCann 1941). Unlike the Irene rotunda, which doubled in size over its period of use, no clear evidence for rebuilding or enlargement of these structures was observed at Rucker's Bottom. Structure 7 does have at least three concentric rings of posts, though, so it is possible that the outer ring reflects a slight enlargement of the original structure (Figure 68).

Ditch and Stockade Lines. The two overlapping ditch lines found in the central portion of the Rucker's Bottom site formed semicircular and rectangular enclosures fronting on the river. Traces of stockade lines were found inside both ditches, suggesting a probable ditch and bank arrangement, with the ditch fill used to elevate and support the stockade posts. In both stockade lines the posts were extremely shallow, with few surviving sections. Only portions of the stockade lines were found, something probably due to the plowing and stripping, which had removed shallower features on the site. A shallow wall trench roughly 30 cm wide by 10 to 20 cm deep was found some 5 m within and paralleling portions of the rectangular ditch, while scattered posts were found paralleling and 2 to 3 m inside the semicircular ditch line. The posts making up the stockade lines were fairly small, averaging 15 cm in diameter in the semicircular enclosure, and under 15 to 30 cm in diameter in the rectangular enclosure. The fill in the wall trench was mottled, suggesting one or more episodes of rebuilding, with posts pulled up and replaced, or the tamping of soil and other debris around the posts. Gray or orange clay contributed to the mottling, and was also present in a number of the individual postmolds making up the semicircular stockade line. The clay may reflect a conscious attempt to coat and hence extend the life of the posts or, alternatively, it may represent an attempt to solidly fix them in the sandy soils of the terrace (Cole and Albright 1981; Lafferty 1973:102).

The three pronounced gaps in the semicircular ditch, on the northern, western, and southern sides of the enclosure, were interpreted as entranceways. Post lines from probable screening walls were observed inside these gaps. The largest surviving sections of the semicircular stockade were typically noted just inside the openings, suggesting that portions of the stockade near entrance areas, if that is what the gaps represent, may have been better constructed than other sections. Three uncorrected radiocarbon dates obtained from debris in the fill of the semicircular ditch indicated that it was probably dug late in the 14th or early in the 15th centuries. These dates were 590±60 BP, DIC-2304 [calibrated ca. AD 1322, 1340, or 1392; Stuiver and Pearson 1986:827]; 540±60 BP, DIC-2305 [calibrated ca. AD 1407; Stuiver and Pearson 1986:827]; and 500±70 BP, DIC-2303 [calibrated ca. AD 1422; Stuiver and Pearson 1986:826] (Anderson and Schuldenrein 1985:8). The rectangular ditch passed through the semicircular ditch and hence was dug later. Given the lifespan of timbers in this climate, this ditch and stockade line was probably built soon after the first ditch, the since no evidence for rebuilding was noted along the semicircular wall line. The three dates document an early Rembert phase age for the enclosures, an attribution that was supported by the ceramics found in the fill. No evidence for bastions was noted along the stockade line of either enclosure, although two curious features were found flanking the northern entrance gap in the semicircular ditch that may have been sentry posts of some kind. No comparable features were observed near the other gaps, or elsewhere along the ditches. Ditches like those found at Lawton and Rucker's Bottom were noted at a number of sites in the South Appalachian area in early historic and early archaeological accounts (Blanding 1848; Hawkins 1848:33), and they have been found and excavated at a number of Mississippian sites in the southeast (Cole and Albright 1981; Lafferty 1973; Morgan 1984; Morse and Morse 1980, 1983). Gaps have been noted in the ditch lines at well-fortified sites, including at Etowah (Cornelius 1818; Morgan 1984:42), indicating these were normal features designed to facilitate normal access to the community.

The nature of the stockade/defensive system along the river, an area that was not stripped, could not be determined. Several backhoe trenches were opened from the bluff edge out into the field, but failed to detect any evidence for a ditch or stockade line, although the latter could very well have been missed. Alternatively, fortifications in this area may have since been washed into the river. The ca. 4 m high river bank would have afforded some protection, but it is probable that a stockade of some kind was also present. A large, semicircular depression approximately 20 m across and cutting 5 to 10 m into the bank was present in the bank margin below the center of the semicircular enclosure that may have been an eroded entrance area. Canoes could have been kept tied up in this general area, for use in both fishing and travel, and trips to the river margin by the village inhabitants for water, bathing, subsistence pursuits, and other activities would have been facilitated by a path of some kind.

A description of what the Rucker's Bottom village might have looked like from the river was provided by Henry Woodward, who in 1674 visited an Indian village on the upper Savannah somewhere just north of Augusta:

> ...we came in sight of the Westo town...which stands upon a point of the river...upon the western side...the next day I viewed the Town, which is built in a confused manner, consisting of many houses whose sides and tops are both artificially done with bark, upon the tops of most wherof fastened to the ends of long poles hang the locks of hair of Indians that they have slain. The inland side of the town being doubly palisaded, and that part which fronts on the river having only a single one. Under whose steep banks seldom lie less than one hundred fair canoes ready upon all occasions... [Woodward 1674, in Salley 1911:132-133].

Although referring to a different, later village, many of his observations could apply to the Rucker's Bottom community:

Ceramic Analyses/Chronological Controls. Internal chronological control of the Mississippian assemblage at Rucker's Bottom was provided primarily by the ceramic analyses, although three radiocarbon dates were obtained from the semicircular ditch, as described previously, dating it to about A.D. 1400. All sherds over 1/2 inch [1.27 cm] in size from the site, 43,461 specimens, were examined and categorized by paste and surface finish, with rims and recognizably stamped sherds subjected to additional attribute analyses (Anderson and Schuldenrein 1985:321). Overall, the Mississippian assemblage was dominated by plain, burnished plain, check stamped, and complicated stamped finishes. Corncob impressions, cord marking, and modified (i.e., pinched, folded, punctated, notched or incised) rims were also present, but were less common. The most common design motifs observed within the complicated stamped assemblage were nested diamonds, concentric circles, herringbone patterns, and the filfot cross. The assemblage included both Beaverdam and later Rembert phase materials, and bore strong similarities to Reid's (1965, 1967) Pee Dee series, and to Savannah period assemblages from Irene and other lower Savannah River sites. Affiliations with Pisgah assemblages were also suggested by a moderate incidence of rim notching, and nested diamond motifs were also common.

Examining the distribution of plain, complicated stamped, check stamped, corncob impressed, and modified rims, clear differences were evident between the northern and southern parts of the terrace, indicating different periods of occupation. The area outside of the ditches, for example, had a much higher proportional incidence of check stamped pottery (8.4%) than the area inside the enclosures, where the finish accounted for only 3.7% of the total (Table 7). While some of the 'Mississippian' check stamped pottery on the site, particularly from the area outside of the enclosures, was probably earlier Deptford or Cartersville material, these types were usually separable, and the incidence of misclassification is thought to be low. The proportion of check stamping relative to other wares in the southern village, at 8.4%, was comparable to that observed at Beaverdam Creek, suggesting the two communities were contemporaneous. The proportion of check stamping in the northern, enclosed village, in contrast, was closer to that noted at Rembert. A comparable pattern was observed in the proportional incidence of rim modification, which increased from between 0.2% and 0.6% of the total ceramic assemblage at Beaverdam Creek to 0.5% in the southern and 1.1% in the northern village at Rucker's Bottom, and to between 5.6% and 6.2% at Rembert.

Design motif distributions also helped to document temporal variability within and between these sites (Table 8). The nested diamond motif, for example, was common at Rucker's Bottom, but fell from a total of 63.2% of the identifiable complicated stamped assemblage in the southern village area to about 54.3% inside the enclosures. A decrease in the occurrence of this motif was also noted at the Beaverdam Creek Mound, between the premound midden and the mound fill itself. At Rembert the motif accounts for an even smaller fraction of the assemblage. Other design elements appear to exhibit some temporal or at least spatial variability in their occurrence at Rucker's Bottom. The herringbone motif was considerably less common outside as opposed to inside the enclosures, while the filfot cross was more common in the earlier village. Concentric circles occurred in roughly equal proportions in both areas.

Table 7. A Comparison of Mississippian Ceramic Finishes at the Rucker's Bottom, Beaverdam Creek, and Rembert Mound Sites, Elbert County, Georgia.

	Rucker's Bottom *		Beaverdam Creek Mound**			Rembert Mounds**	
Finishes	Outside Enclosures	Inside Enclosures	Pre-mound Midden	Mound Fill	Village Area	Mound	Village
All Complicated Stamped	2968 (29.4%)	5846 (33.0%)	708 (12.4%)	531 (18.9%)	428 (6.5%)	136 (46.9%)	196 (45.6%)
All Check Stamped	852 (8.4%)	652 (3.7%)	553 (9.7%)	194 (6.9%)	529 (8.1%)	3 (1.0%)	8 (1.9%)
All Corncob Impressed	272 (2.7%)	717 (4.1%)	105 (1.8%)	125 (4.5%)	179 (2.7%)	2 (0.7%)	7 (1.6%)
Modified Rims	55 (0.5%)	196 (1.1%)	12 (0.2%)	18 (0.6%)	14 (0.2%)	18 (6.2%)	24 (5.6%)
Plain	5961 (59.0%)	10277 (58.1%)	4342 (75.9%)	1941 (69.1%)	5391 (82.5%)	131 (45.2%)	195 (45.3%)
TOTALS (100.0%)	10108 (100.0%)	17688 (100.0%)	5720 (100.0%)	2809 (100.0%)	6541 (100.0%)	290 (100.0%)	430 (100.0%)

*= All 1980 EU's, 1981-1982 Features, and Structure 2 fill.

**= Data derived from Rudolph and Hally 1985

Table 8. A Comparison of Mississippian Complicated Stamp Design Elements at the Rucker's Bottom, Beaverdam Creek, and Rembert Mound Sites, Elbert County, Georgia.

	Rucker's Bottom *		Beaverdam Creek Mound**			Rembert Mounds**	
Finishes	Outside Enclosures	Inside Enclosures	Pre-mound Midden	Mound Fill	Village Area	Mound	Village
Nested Diamonds	127 (63.2%)	89 (54.3%)	42 (49.4%)	17 (22.7%)	25 (49.0%)	6 (21.4%)	17 (60.7%)
Concentric Circles/ Figure 8's	37 (18.4%)	36 (22.0%)	26 (30.6%)	30 (40.0%)	20 (39.2%)	5 (17.9%)	4 (14.3%)
Herring Bone Bone	14 (7.0%)	34 (20.7%)	8 (9.4%)	19 (25.3%)	1 (2.0%)	- (0.0%)	1 (3.6%)
Filfot Cross	23 (11.4%)	5 (3.0%)	9 (10.6%)	9 (12.0%)	5 (9.8%)	17 (60.7%)	6 (21.4%)
TOTALS (100.0%)	201 (100.0%)	164 (100.0%)	85 (100.0%)	75 (100.0%)	51 (100.0%)	28 (100.0%)	28 (100.0%)

*= All 1980 EU's, 1981-1982 Features, and Structure 2 fill.

**= Data derived from Rudolph and Hally 1985

The evidence from the Beaverdam Creek and Rembert Mound sites showed that collared, fine-incised rims, which were characteristic of the Beaverdam phase,were earlier than folded pinched, notched, and punctated rims, which were characteristic of the Rembert phase (Rudolph and Hally 1985). At Beaverdam Creek most of the modified rims were collared and incised forms. While incised rims were about evenly distributed between the fortified northern and unfortified southern village areas at Rucker's Bottom, folded pinched, punctated, and notched rims were most common in the northern village, suggesting a later date (Table 9). Incised rims were about evenly distributed over the site, while folded, pinched, punctated, and notched rims were about three times more common in the area inside the enclosures.

The occupations in the unfortified southern village area at Rucker's Bottom were thus contemporaneous or slightly earlier than those at Beaverdam Creek. The Rucker's Bottom occupation continued after the latest occupation at Beaverdam Creek, however, into the succeeding Early/Middle Lamar Rembert phase, and it was during this period (ca. A.D. 1350 to 1450) that the village was relocated and fortifications appeared. The changes in village organization observed at Rucker's Bottom were undoubtedly tied to changes in the political power structure within the region, particularly the replacement of the Beaverdam center by the one at Rembert (Chapter VII).

The Burial Assemblage. A total of 41 human burials were positively identified during the fieldwork at Rucker's Bottom, and 24 of these were removed; isolated human bones were also found in another eight features (Weaver et al. 1985). Large pits, excluding those filled with rocks in the plaza areas, commonly contained burials (41 of 69 examined, or 59.4%). Over 125 pits large enough to have contained burials were mapped during the fieldwork, and it is probable that upwards of a hundred burials were originally present on the site, including both stripped and unstripped areas. The burial pits occurred in isolation or in small clusters that may be fortuitous associations, or may

Table 9. Occurrence of Modified Rim Elements at the Rucker's Bottom Site (9Eb91)

Provenience (Beaverdam Phase Village)	Folded Rims Pinched	Folded Rims Notched	Folded Rims Punctated	Unfolded Rims Punctated	Unfolded Rims Rosettes	Unfolded Rims Lugs	Unfolded Rims Notched	Unfolded Rims Incised	Grand Totals
Northeastern sector	0	0	0	0	0	0	0	0	0
Southeastern sector	0	0	0	0	0	0	0	0	0
Council House?	1	0	0	0	1	0	0	2	4
Southwestern sector	1	0	1	0	1	0	0	1	4
Structure 11	1	0	0	0	0	0	0	2	3
Northeastern Sector	1	0	0	0	0	0	0	0	1
Structure 10	0	0	0	0	0	0	0	0	0
Structure 9	0	0	0	0	0	0	0	0	0
Plaza Area	0	0	0	0	0	0	0	1	1
Area between villages	0	0	1	0	0	0	0	1	2
Structure 8	0	0	0	0	0	0	0	0	0
EU's Opened Outside Enclosures	13	5	10	3	1	10	4	29	75
Totals	17	5	12	3	3	10	4	36	90

Provenience (Rembert Phase Village)	Folded Rims Pinched	Folded Rims Notched	Folded Rims Punctated	Unfolded Rims Punctated	Unfolded Rims Rosettes	Unfolded Rims Lugs	Unfolded Rims Notched	Unfolded Rims Incised	Grand Totals
Northern sector	1	3	0	2	1	1	0	1	9
Eastern sector	0	0	0	0	0	0	0	0	0
Structure 6	0	0	0	0	0	0	0	0	0
Structure 5	0	0	0	0	0	0	0	0	0
Southern sector	0	0	0	0	0	0	0	1	1
Structure 3	0	0	0	0	0	0	0	0	0
Structure 4	2	0	0	0	0	2	9	0	13
Structure 7	0	0	0	0	0	0	0	0	0
Western sector	0	2	0	1	0	0	1	0	4
Structure 1	0	1	0	0	0	0	0	0	1
Structure 2	0	0	0	0	0	1	1	0	2
Plaza area	1	0	1	0	0	0	1	2	5
									0
Semicircular Ditch	0	0	0	0	0	0	0	0	0
Rectangular Ditch	4	1	1	1	2	0	0	3	12
EU's Opened Inside Enclosures	36	15	26	15	9	12	7	36	156
Totals	44	22	28	19	12	16	19	43	203

EU= 1980 Excavation Units.

Source: Anderson and Schuldenrein 1985:462-463 reflect kin or sodality groupings. No mortuary buildings like those reported from Irene or Town Creek (Caldwell and McCann 1941:25-26; Graham 1973) were found, and burial appears to have been far less formal an affair than at the larger centers.

The 24 burials included nine from inside and 15 from outside the enclosures. Diagnostic artifacts were recovered in the fill of a number of the burial pits, and this, and general locational data, that is, whether they occurred inside or outside the Rembert phase enclosure, permitted the rough dating of 23 of the 24 burials (Table 10). Thirteen burials were assigned to the Beaverdam and ten to the Rembert phase. No major differences in burial patterns were evident between the two assemblages. Most adults were found semiflexed lying on their side. Two infants were, however, found in vessels, and one group of three individuals was found in an extended position lying on their backs. Grave goods were simple and were found with about half (N=7, 53.8%) the individuals in the earlier Beaverdam phase samples. Interestingly, grave goods were found in only one of the 10 burials tentatively dated to the later Rembert phase component, pointing to a possible difference in interment practices, if the samples were representative. No spectacular grave associations indicative of marked status differentiation were noted at the site, nor was an appreciable age or sex bias evident in the occurrence of grave goods. Adult males, however, did tend to have slightly more elaborate grave goods — pots or beads as opposed to bone pins, rattles, or cobble tools — than adult females.

In general, the sample presented a picture of a population of rather short stature, gracile physique, and subject to considerable disease stress. Stature estimates were calculated for eight of the adults and yielded a range from 156 cm to 175 cm. Based on this very small sample, the mean stature for males was 170.6 cm, while the mean stature for females was 163.9 cm. Each individual was examined for the presence of gross skeletal pathology, radiographic anomaly and pathology, microscopic anomaly and pathology, dental enamel hypoplasia, and for the concentrations of several trace elements

Table 10. Mississippian Burials from the Rucker's Bottom Site: Summary Data by Provenience.

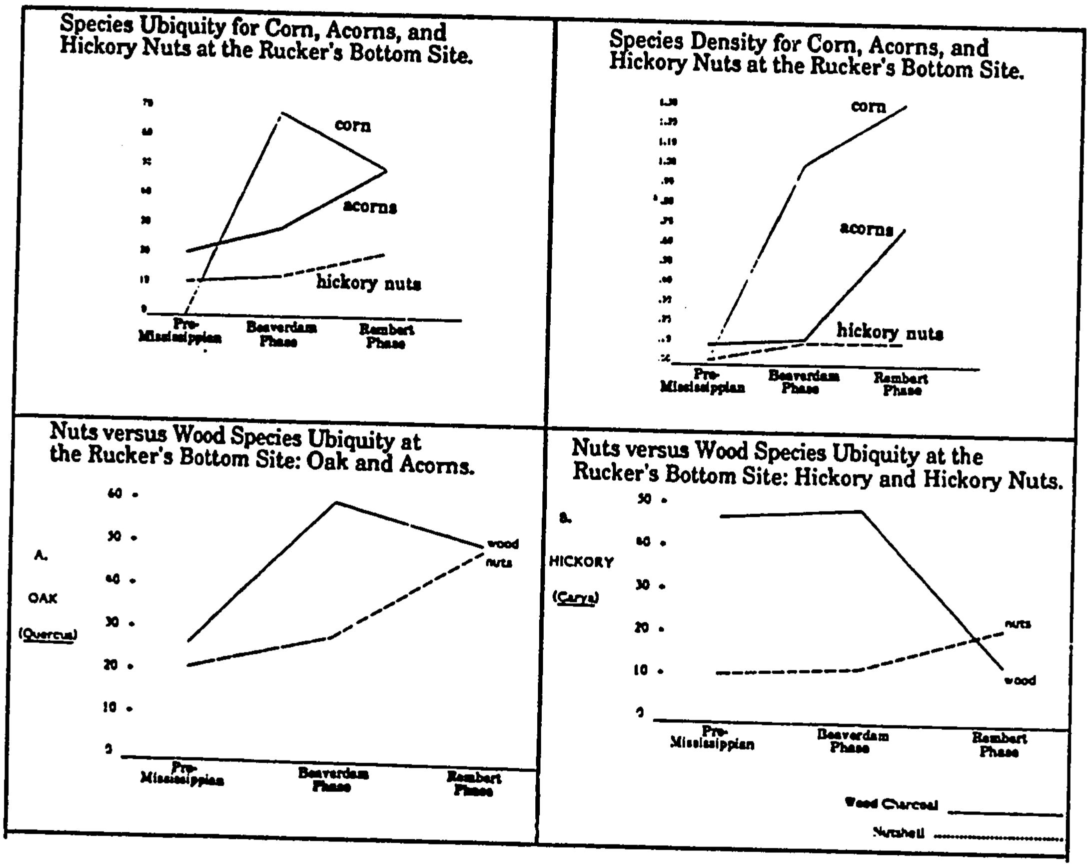
Burial Number	Feature Number	Phase	Sex	Estimated Age	Alignment	Grave Goods	Relative Health
1	M1	Beaverdam	-	1.5	In vessel	Savannah Check Stamped jar	fair
2	M3	Beaverdam?	-	3-6 months	In vessel	Burnished Plain bowl	-
3	M13	Beaverdam?	F	30+	Tightly flexed	Turtle shell	poor
4	M149	Beaverdam?	M	20-30	Tightly flexed	Plain jar	fair
5	M425/426	Beaverdam	F	30	Tightly flexed	Hammerstone, possible tomb structure	fair
6	M1201	Beaverdam	M	25	Semi-flexed		fair
7	M1202	Beaverdam	F	40-50	Partly extended		fair
8	M1331	Rembert?	M	35+	Semi-flexed		fair
9	M1318	Rembert	-	20+	Semi-flexed		fair
10	M1314	Rembert	F	15+	Semi-flexed	Two shell ear pins	good
11	M1213	Beaverdam?	M	30+	Tightly flexed	18 conch shell beads, 2 bifaces	good
12	M1301	Rembert	F	35+	Tightly flexed		good
13	M1205	Beaverdam	-	15	Tightly flexed		good
14	M1353	Rembert?	-	15+	Semi-flexed		fair
15	M1214	Beaverdam	-	20-30	Tightly flexed		fair
16	M1215	Beaverdam	F	30-40	Partly extended		fair
17	M1221	Beaverdam	F?	15-18	Semi-flexed		fair
18	M2100	Beaverdam	M	20+	Semi-flexed	>200 shell beads, stemmed biface, skull fragment	fair
19	M1324	Rembert?	F	25-30	Extended		good
20	M1324	Rembert?	-	30+	Extended		poor
21	M1324	Rembert?	-	7-Jun	Extended		good
22	M1222	Beaverdam	F	20-25	Semi-flexed		good
23	M1224	Rembert	-	30+	Semi-flexed		good
24	M1340	Rembert?	-	30+	Semi-flexed		fair

(Butler 1986; Weaver et al. 1985). The primary epidemiological problems in the sample were dental diseases and their attendant consequences. The skeletal remains exhibited no evidence for violence or trauma, but instead showed gradual, progressive dental problems as well as a range of general systemic and skeletal pathologies, including the accumulation of osteophytes and osteomyelitic bone infections. Osteomyelitis was surprisingly frequent in the skeletal sample, occurring in eight of the 24 individuals. Although occurring on six of the Beaverdam phase individuals, as opposed to on only two individuals dated to the Rembert phase, this difference was not found to be statistically significant (Fischer's Exact Test, $p = 0.343$; Butler 1986:173). Enamel hypoplasia was observed on about half of the burials in each phase (Beaverdam = 6; Rembert = 5), again with no statistically significant difference observed (Fischer's Exact Test, $p = 0.272$; Butler 1986:172). Combined with the somewhat surprising rarity of Harris lines in the radiographs of the long bones, the incidence of dental enamel hypoplasia implied that childhood stresses, while moderate, were not extraordinarily severe.

Trace element values for zinc, calcium, magnesium, and strontium were obtained for each individual using atomic absorbtion spectrometry (Butler 1986; Weaver et al. 1985:602) (see Chapter VII). Individual trace element values presented no discernible patterns between age- or sex-defined groups, although a significant difference in zinc values was observed between the earlier and later skeletal samples, suggesting possibly greater meat consumption during the Beaverdam phase. This was also faintly suggested by the mean strontium values, although no statistical significance can be attached to these patterns. The trace analyses did not indicate markedly different patterns of skeletal health in the Beaverdam and Rembert phase occupations at the site. Whether and how seriously these results were affected by diagenesis remains unknown, although all the burials appear to have been interred within an approximately two century period.

Paleosubsistence Analyses. Standardized 4-liter flotation samples were collected from 119 Mississippian features at Rucker's Bottom, and from 54 1-m squares from the floor of one of the Rembert phase structures. The heavy and light fractions were examined for ethnobotanical remains by Josselyn F. Moore (1985), and three standardized measures were employed in the analyses: species density, diversity, and ubiquity. Species density is the count or weight of a species in a standardized sample, with count/liter and weight/liter used at Rucker's Bottom. Species diversity is a measure of the number of different species of a given analytical category (i.e., cultigens, seeds, nuts, wood types) in a given sample. Species ubiquity refers to the percentage of all samples or features in which a specific species was present.

Corn was common at the site, occurring in over half of the features, with a ubiquity of 57% (Figure 69). Corncob fragments represented the bulk of the sample, with only a few kernels and one small complete cob recovered. Although corn was found in a greater number of Beaverdam phase features (ubiquity of 65% as opposed to 48% in the Rembert phase features), considerably more corn was found in the later occupation. Carbonized nutshells were recovered from just under half the Mississippian features at Rucker's Bottom, with no difference in ubiquity between the earlier and later occupations. Hickory and acorn were the only species identified. While hickory nut showed a fairly constant pattern of utilization between the early and later Mississippian occupations, use of acorns increased dramatically, measured over both ubiquity and density (Figure 69). Four identifiable species of seeds were found in the Mississippian features, maypops, grape, lambs-quarter, and doveweed. Maypops and grape were found in both the early and later occupations, while lambs-quarter was identified only in Beaverdam phase features, and doveweed in later Rembert features. Seeds were more common in the later occupation (ubiquity of 33%, as opposed to 21% in the Beaverdam phase), suggesting some subsistence intensification was occurring.



Source: Moore 1985

Figure 69. Species Ubiquity and Density Among the Paleoethnobotanical Samples at the Rucker's Bottom Site (9Eb91).

Examining the ubiquity of the wood versus nut charcoal for hickory and oak between the earlier and later Mississippian occupations, a slight decline in oak occurred, together with a sharp drop for hickory (Figure 69). If wood charcoal ubiquity can be considered an indicator of species availability and nutshell a measure of species utilization, then a decline in both tree species, but particularly hickory, appears to have occurred in the Rucker's Bottom area. The utilization of hickory nuts, in contrast, increased slightly while acorn use increased dramatically. Scarry (1981:95) has suggested that changes such as these in wood and nut utilization may have been due to intensive land clearance associated with agricultural intensification. As larger areas were cleared, the availability of wild resources would have declined. Plant succession would have been affected by this farming activity, with subclimax plant communities (which include pine and oak) becoming dominant. The high incidence of pine observed in the wood charcoal from the site, a pattern also noted in the pollen samples collected at the Beaverdam Creek Mound (Fish 1985), was probably due in part to this clearing.

A total of 13,094 identifiable bone fragments were found at Rucker's Bottom and were examined by Susan L. Scott (1985), whose analysis is summarized here. All bone was weighed, with counts and MNI (Minimum Number of Individuals) data recorded for identified taxa. The analysis focused on the 1/8-inch [0.32 cm] mesh waterscreened sample, since an inspection of the flotation heavy fractions yielded only one additional species, minnow (Cyprinidae). The bone sample from Rucker's Bottom was typically poorly preserved, exhibiting extensive pre- and post-depositional modification, although in some contexts preservation was quite good. Virtually the entire identifiable assemblage came from the Mississippian components. While bone fragments were recovered from some of the Woodland features, most of it was poorly preserved. Beside natural weathering, carnivore scavenging had removed some portion of the assemblage. Gnawed bones were found in several features, although surprisingly no dog remains were found on the site. In general, many of the bones that survived did so because they were relatively dense, and hence more resistant to normal weathering processes.

Three species dominated the assemblage: white-tailed deer, turkey, and box turtle. In terms of economic importance, white-tailed deer was the most important species, followed by wild turkey. The apparent abundance of box turtles was probably related more to factors of preservation, and the use of carapaces for vessels and rattles, than to subsistence importance. Elements associated with the forequarters and hindquarters of large mammals, mostly deer, were more common in the assemblage than expected based on bone density, indicating these relatively meaty sections were probably brought onto the site in greater quantities than other, economically less valuable parts. Limb elements from Rucker's Bottom also exhibited a high degree of intentional fragmentation, suggesting a concern for subsistence maximization, possibly to facilitate boiling and marrow extraction. Given the evidence for subsistence stress observed in the skeletal sample, this procedure may have helped reduce famine. The degree of fragmentation may have been influenced by the size of the cooking vessel used to boil the bones, which may have in turn been related to the size of the consumer group. The degree of fragmentation was similar to that observed at the Yarborough site (Scott 1981, 1982) where family unit cooking practices were documented. Comparable family or household-sized groups were probably present at Rucker's Bottom. A very high frequency of burned deer phalanges was also observed in the assemblage that suggests the roasting of whole limbs over open fires. Once the flesh had been removed from these limbs and stored or eaten, the bones may have then been smashed and boiled, something that would explain the high degree of fragmentation observed.

Intra-assemblage comparative analyses were restricted to 30 features producing large (>25 g), comparatively well-preserved faunal remains; these features accounted for over 90%, by weight, of the total Mississippian faunal assemblage. Features dating to the later Mississippian Rembert component typically contained species procured during cooler weather. Earlier Mississippian Beaverdam phase features, in contrast, yielded both warm and cool weather species. Small mammals and fish were common in these deposits, as were shellfish. Warm-weather indicators from the Beaverdam phase features included a sunfish vertebra, probably from a mid-summer catch, and a tarsal from a fawn probably killed either in late summer or early autumn. Cold-weather indicators, consisting of deer mandibles and frontals with antler attached indicating fall/winter kills, were found in the fill of the initial, semicircular ditch, indicating the move to fortifications at the site may have been accompanied by changes in subsistence.

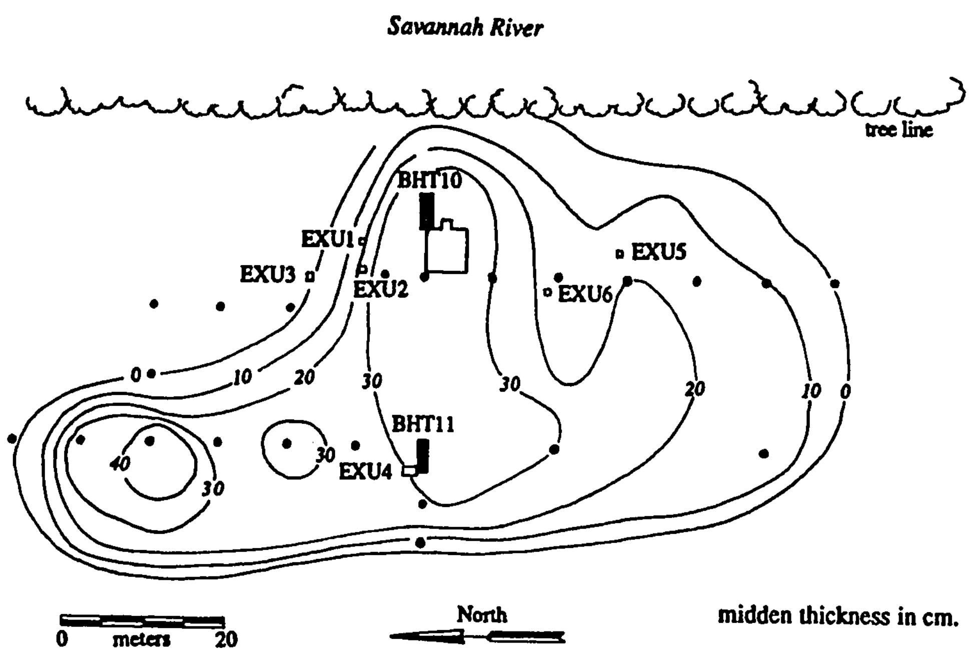
Shellfish remains were found in a number of Mississippian features at Rucker's Bottom, in varying but typically low quantity (Blanchard and Claassen 1985). Three species were found, all belonging to the Genus *Elliptio*, and including *E. fraterna* (Lea), *E. congaraea* (Lea), and *E. icterina* (Conrad). *E. fraterna* was the most common, with *E. congaraea* and *E. icterina* only incidentally represented. *E. fraterna* is found in swiftly moving water, typically on sand bars in large rivers (Johnston 1970:312). Given this, it is likely that the specimens found at the site came from the Savannah River. *E. icterina*, in contrast, occurs in a wide range of habitats and, where present, is usually the dominant species (Johnston 1970:328). This is not indicated in the shellfish assemblage from the site, suggesting they were collected from some other source than the Savannah, such as from Van Creek. *E. congaraea* is also a sandy substrate swift water species, and probably came from the Savannah River. Over the site assemblage as a whole, shell was more common in the earlier Beaverdam phase occupation than in the later Rembert phase occupation.

Clyde Gulley (9EB387)

A major Early Mississippian Jarrett phase component, possibly the remains of a small village, was examined at the Clyde Gulley site during the investigations in the Richard B. Russell Reservoir (Tippitt and Marquardt 1984:8-9 to 8-14; 8-20 to 8-37). The site was located approximately 400 m below the confluence of Pickens Creek with the Savannah River, on a low rise on the terrace. A dark midden stain, measured using a split-spoon sampling auger, was found extending over a roughly half hectare area (Figure 70). The midden was thickest on a low rise on the levee crest and thinned rapidly away from this area. Slightly thicker midden deposits were observed in three places that may represent the locations of structures or refuse disposal areas. Overburden on the top of the midden surface was removed using a pan, and a 10 by 10 m block unit was opened in 2-m squares and 10-cm levels on the levee crest near the river. Six other 2-m units were randomly placed across the midden to sample the remaining deposits. All units were taken to the base of the midden, and any features that were encountered were excavated.

A number of pits, postmolds, and artifact concentrations, including the outline of a small circular structure 3 m in diameter were found (Figure 70). Two pits within this structure contained burned earth and bone, while a ground stone tool fragment, several large sherds, and a number of small triangular points were found on the floor, suggesting a domestic residence (Tippitt and Marquardt 1984:8-23). Given the low artifact density the structure, which had not burned, appeared to have been cleaned prior to abandonment. No other evidence for structures was found.

Over 8,300 sherds were collected, the majority plain, burnished plain, and complicated stamped. The complicated stamped sherds were predominantly two-bar and two-bar cross diamonds, suggesting a later Etowah, Jarrett phase occupation. A similar ceramic assemblage was found at 9Eb388, a small surface scatter on a ridge overlooking the Clyde Gulley site that may have been an outlying hamlet or some other activity area, such as a seasonally occupied agricultural camp (Tippitt and Marquardt 1984:9-5). Burnished bowls were common, and one had a duck head effigy lug. Other artifacts recovered included plain and incised pipe fragments, pottery discs, small isoceles



Excavation Units and Midden, Clyde Gulley (9EB387)

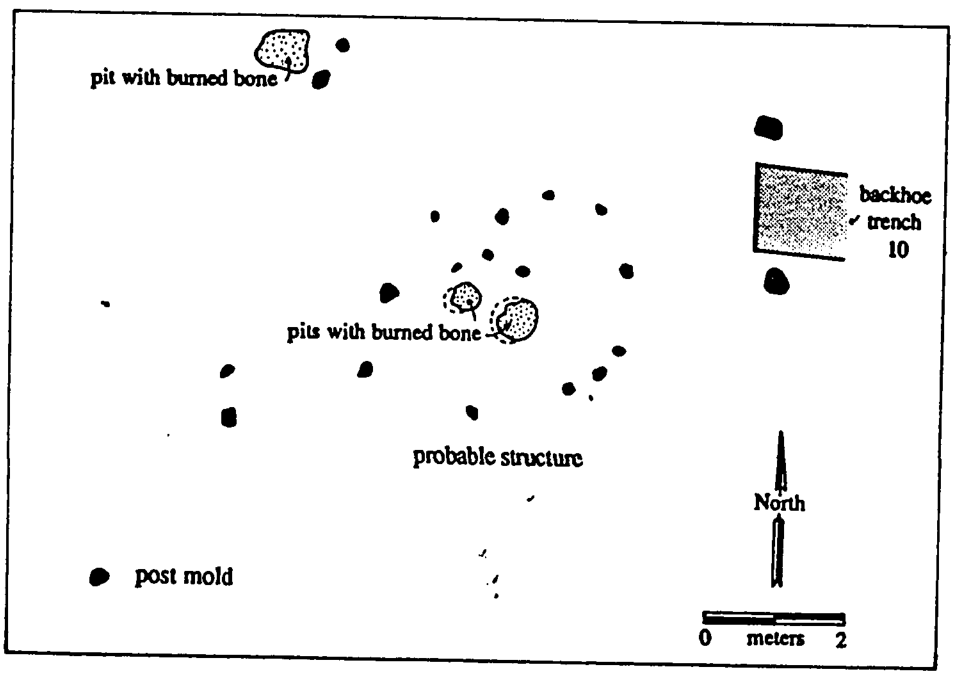


Figure 70. The Mississippian Component at the Clyde Gulley Site (9Eb387).

triangular points, and a number of small bipolar cores and small blades with lateral wear retouch. Use of the small blades in composite tools for a range of tasks, including cleaning fish, drilling, scarification, or working shell or bone was suggested (Tippitt and Marquardt 1984:8-37). Almost all of the flaked stone artifacts were made from very fine vein or clear crystal quartz.

Flotation samples were taken from all of the unit levels and features, but comparatively few identifiable charred plant remains were recovered, something attributed to the minimal evidence for burning found at the site (Tippitt and Marquardt 1984:8-37). Identified paleoethnobotanical remains included seeds from maypops, passion flower, and grass, together with hickory nutshell and pine cone fragments (Aulbach-Smith 1984). Only one corn fragment was found, from the area of the structure. Other identified remains included *Croton glandulosus* var. *septentrionalis*, *Panicum ramosum*, *Vinga*, and *Ampelopsis aborea.* The fruit seeds suggested late summer to fall occupation, something also indicated by the nutshell. The low incidence of corn may reflect preservation, or may indicate a lower dependence on this plant early in Mississippian locally, as opposed to during later periods, when it was almost ubiquitous in the features at Rucker's Bottom and Beaverdam Creek.

Faunal remains from the Mississippian deposits at Clyde Gulley included bones from white-tailed deer (*Odocoileus virginianus*), mud or musk turtles (Kinosternidae), softshell turtles (*Trionyx sp.*), bullhead catfish (Ictaluridae), one unidentifiable bird, and one or more nonpoisonous snakes (Ruff 1984:B-1 to B-5). Mammal and turtle bone accounted for over 98% of the assemblage. A comparatively small sample was recovered, 1479 fragments, totaling just over half a kilogram. Most of the bone was small and poorly preserved, rendering species identification difficult. Given the proximity of the river, the presence of catfish and aquatic turtles was not surprising, although the incidence of fish remains was thought to be low (Ruff 1984:B-3). Deer elements from both the front and hind legs were recovered, although the small sample size precluded statements about butchering practices beyond the suggestion that complete skeletons appear to have been returned to the site.

Simpson's Field (38AN8)

Late Woodland Swift Creek/Napier and Middle Mississippian Rembert phase artifact and feature assemblages were found during investigations in the Richard B. Russell Reservoir at the Simpson's Field site, located on an older Pleistocene terrace adjacent and parallel to the Savannah (Figure 71) (Wood et al. 1986:49-119). Field investigations, conducted in 1980 and 1981, included controlled surface collection, and the excavation of systematically dispersed shovel tests, intuitively placed test units, and wide area stripping and shovel skimming. An extensive controlled surface collection, consisting of all artifacts within 10-m grid units, was made over a 2.4 ha area that was under cultivation. Some surface separation of the Late Woodland and Mississippian components was recognized, permitting subsequent examination to focus on major concentrations of debris within each occupation. Eighty five shovel tests and 10 test units were then opened to further define the deposits. Artifactual debris was found to be confined to the plow zone for the most part, although a dense feature assemblage intruded into the underlying sandy/clay subsoil. Using a small bulldozer, the plow zone was removed from a 50 by 50 m block in the most productive part of the site, on a low rise. Some 300 sq. m within this area were shovel skimmed, with all features mapped and examined. A total of 134 cultural features were found, 16 of which could be conclusively attributed to the Late Woodland and three to the Mississippian. Of the total feature assemblage, 109 stains were postholes, most of which could not be identified to period. The Late Woodland features were found primarily in the west-central part of the block, while a probable Mississippian structure and three apparently associated features

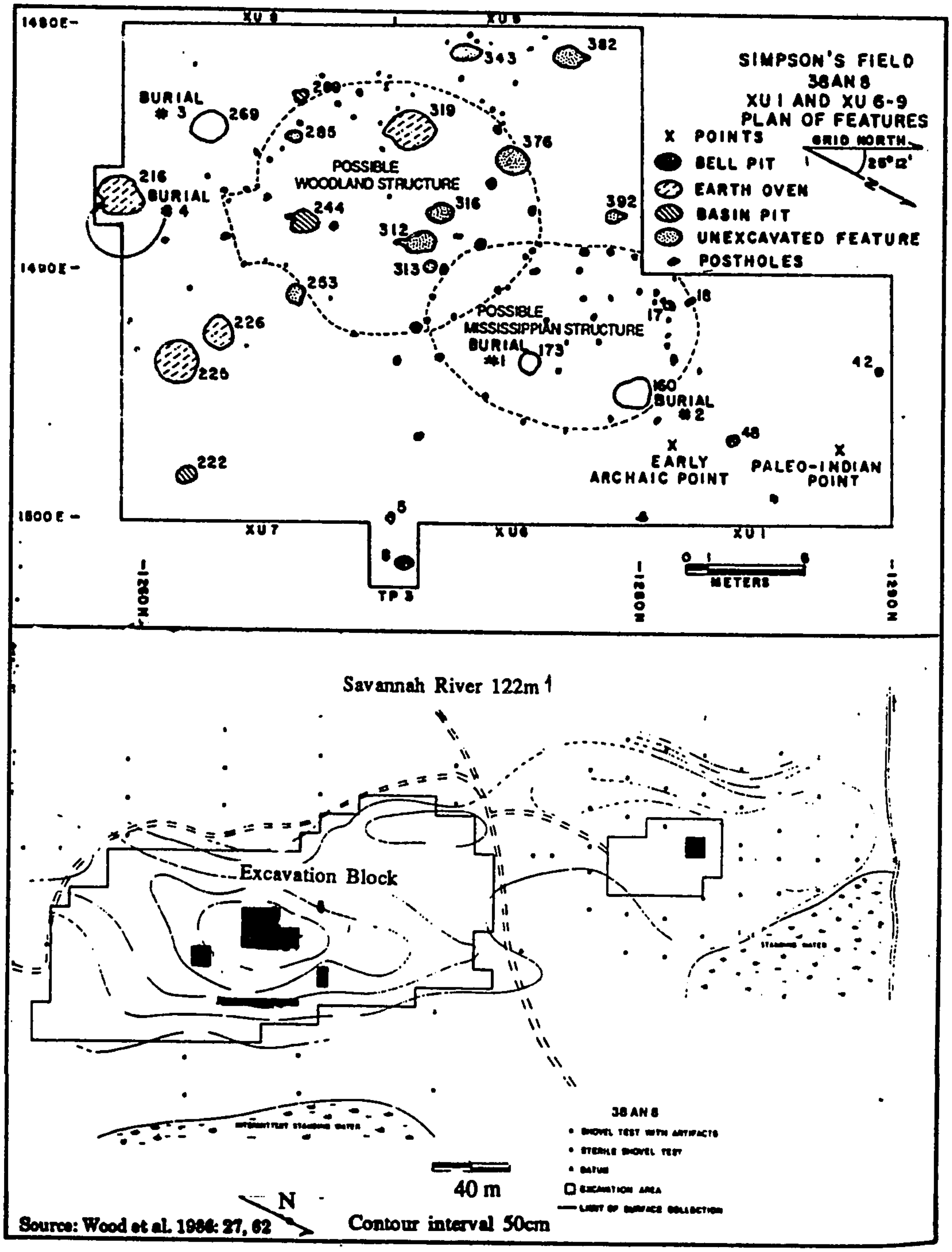


Figure 71. The Late Woodland and Mississippian Components at the Simpson's Field Site (38An8).

came from the eastern portion of the block.

Late Woodland Settlement. The Late Woodland component found at Simpson's Field is one of the best documented transitional Swift Creek/Napier assemblages found to date in the South Appalachian area, and the only well documented site from this time level, ca. A.D. 600 to 800, in the Savannah River Valley. Features attributable to the Late Woodland occupation included three bell-shaped pits, five shallow basin-shaped pits, four earth ovens, a cluster of rocks and sherds, and two burials. In addition, many of the postmolds found on the site probably dated to this period. A suspicious ring of posts and other features was present in center of block that appears to be a Late Woodland structure ca. 8 to 10 m in diameter (Figure 71). In many ways, including size, shape, location of entranceway, and occurrence of large internal pit-features, this structure resembles the probable Late Woodland structures found at Rucker's Bottom. Wood et al. (1986:107) argued that the Late Woodland assemblage was probably formed by at least one and possibly multiple households clustered near the crest of the rise. The clustered nature of the earth ovens associated with the one structure that was found may indicate communal cooking activity, or alternatively the rebuilding of the cooking facilities of a single household.

The Late Woodland ceramics from Simpson's Field included Swift Creek and Napier Complicated Stamped sherds in direct association with one another in feature fill, suggesting contemporaneous manufacture, use, and discard. Design motifs included ovals, teardrops, chevrons, concentric circles, squares, rectangles, and parallel lines (Wood et al. 1986:77). Vessel forms present included straight sided jars, incurvate bowls, shouldered bowls, and jars with restricted orifices and shoulders. Design and MNI vessel analyses were conducted with the ceramics in 12 of the identifiable Late Woodland features on the site. Identical design motifs, presumably representing sherds from the same vessel, were found in a number of features, suggesting a single comparatively brief but intensive occupation (Wood et al. 1986:102).

The first of the two burials consisted of a human skull and mandible, and a number of extremely fragmentary pieces of unidentifiable but presumably human bone in the wall of Feature 216, a probable earth oven (Wood et al. 1986:69). The remains were attributed to a child of approximately seven years of age. The earth oven, which contained both Swift Creek and Napier pottery, was assumed to have intruded the burial, and thus postdate it. In the absence of much in the way of earlier Woodland materials, the burial was dated to a somewhat earlier period of Late Woodland site use (i.e, sometime before the earth oven was built). The second burial, Feature 269, was a poorly preserved adult apparently buried in a semiflexed position facing the southeast. No grave goods were found, and the condition of the bone was so friable as to preclude its successful collection (Wood et al. 1986:74-75).

Carbonized plant remains were examined from three Late Woodland features at Simpson's Field (Gardner 1986a). In Feature 216, a probable earth oven, a 25 cm thick charcoal lens near the base produced approximately nine kilograms of charcoal. Analysis of two samples totaling ca. 275 grams identified pine bark and stems (*Pinus sp.*), oak (*Quercus sp.*), unidentified ring porous and ring diffuse species, an unidentified conifer, cane (*Arundinnaria sp.*), an unidentified grass seed, an intact acorn meat, and persimmon (*Diospyrus virginiana*) and sumac (*Rhus sp.*) seeds. The presence of persimmon and sumac seeds, which ripen in the fall, and a high (ca. 1:1) nutshell to wood weight ratio, indicated pitfill probably occurred in the fall (Gardner 1986a:391). Feature 244, a small basin-shaped pit, yielded acorn and hickory nut fragments and unidentified wood. The absence of seeds and a comparatively high nutshell to wood ratio of 1:2 suggested a winter/early spring deposition (Gardner 1986a:390-391). Feature 319, a second earth oven, yielded acorn, hickory, and butternut shell fragments, a squash rind, and maypop (*Passaflora incarnata L.*), grape (*Vitis sp.*), and polygonum

(*Polygonum sp.*) seeds. The presence of grape and maypop, late summer through fall species, and a comparatively low nutshell to wood ratio of ca. 1:3.5, suggested pit deposition during the late summer or early fall (Gardner 1986a:390). Some or all of the material from Feature 319, however, may date to the Rembert occupation at the site, since a sample of the charcoal yielded an uncorrected date of 690±60 (Wood et al. 1986:106) [calibrated ca. AD 1281; Stuiver and Pearson 1986:811, 827-828].

Pollen samples were taken from two Late Woodland features, a cluster of rocks and sherds, Feature 7, and a large bell-shaped pit, Feature 8 (Sheehan 1986:396). The arboreal pollen spectra indicated the presence of a pine-oak-hickory forest, much like that present in the region today. The occurrence of pollen from herbaceous species such as ragweed (*Ambrosia)*, the daisy tribe of the Composite family (Tubuliflorea), grasses (Graminae), and the Cheno-Am group (Chenopodiaceae-Amaranthaceae) pointed to the presence of open, disturbed terrain in the immediate site area, probably around the structures and, possibly, clearing associated with cultivation (Sheehan 1986:394; Wood et al. 1986:106). Two grains of *Cucurbita*-type pollen from either squash or pumpkin were found in the fill of Feature 8; complementing the squash rind fragment found in the carbonized sample from Feature 319. This was the only unambiguous domesticate identified in Late Woodland context at the site, although the ragweed, daisy/sunflower, and Cheno-Am pollen may have also come from cultivated species. A heavily corroded possible maize (*Zea* sp.) pollen grain was found in Feature 7, a half-meter diameter cluster of Swift Creek and Napier sherds and small rocks in a faint, poorly defined stain about 24 cm thick. Charcoal from the fill yielded a date of 2030±50 BP (BETA-2625; Wood et al. 1986:74) [calibrated ca. 43 B.C.; Stuiver and Pearson 1986:811], which was far too early, given the Swift Creek and Napier sherds. In light of the the poor feature definition, the spurious radiocarbon date, and the absence of additional supporting ethnobotanical evidence from the site, in the form of carbonized maize remains or additional pollen in secure context, Late Woodland use of maize at Simpson's Field cannot be considered demonstrated.

The range of ethnobotanical materials in the Late Woodland features at Simpson's Field indicated site occupation took place over several months and probably over two or more seasons, including summer and fall. Year-round occupation, in fact, cannot be dismissed, although neither can it be proven. Plant species diversity was low, well below the range of species exploited elsewhere in the region at this time level, notably in the Little Tennessee River Valley (Chapman and Shea 1981). This was probably due to sampling considerations, however, specifically the low number of features that were examined, and the fact that two of them were the same category of feature, earth ovens (Gardner 1986a:392).

Mississippian Settlement. The Middle Mississippian artifact and feature assemblage recovered at Simpson's Field included two burials and a small pit together with a number of posts from a possible structure (Figure 71). The three features included the burial of a child with five accompanying miniature vessels, Burial 1; the burial of a middle aged female with a single castellated or peaked bowl, Burial 2; and a shallow pit with a corncob impressed sherd in the fill, Feature 48. A radiocarbon sample from a charcoal and ash lens in Burial 2 yielded a date of 630±40 BP (BETA-2803; Wood et al. 1986:108) [calibrated ca. AD 1300, 1360, or 1370; Stuiver and Pearson 1986:811, 827]. This date was complemented by two seemingly anomalous uncorrected dates of 690±60 BP (BETA-6397) [calibrated ca. AD 1281; Stuiver and Pearson 1986:827-828] and 720±50 BP (BETA-7010) [calibrated ca. AD 1275; Stuiver and Pearson 1986:828] from two presumably Late Woodland features (Wood et al. 1986:105). Given these radiocarbon dates, some reuse of earlier features may have occurred or, as seems more likely, they have been incorrectly assigned. If all three samples accurately date the Mississippian occupation, then site use was during the late Beaverdam phase, continuing into the transitional period between the Beaverdam and Rembert phases.

This dating was supported by the ceramics, which included attributes characteristic of both phases. The assemblage was characterized by concentric circle complicated stamping and corncob impressing, which typically occur in the Beaverdam phase, although these finishes do continue into the ensuing Rembert phase (Anderson et al. 1986:41; Rudolph and Hally 1985:457). Rembert phase occupation was inferred by the presence of sherds with pinched and notched folded rimstrips, and an unmodified stamped rim with a linear arrangement of rosettes. Rudolph (1983), using collections from the Wallace Reservoir project along the central Oconee River, demonstrated that average rim fold width increased over the course of the Mississippian. The average rim fold width of the Simpson's Field assemblage, at 13 mm, was comparable to that observed at Early Lamar components at Little Egypt (Hally 1979) and at 9Pm222 in the Wallace Reservoir (Rudolph 1983:92).

The six vessels recovered at Simpson's Field provided the best evidence for a transitional Beaverdam/Rembert phase occupation, and additionally offer a picture of local variation in vessel morphology (Figure 72). The vessels found with Burial 1 (Figure 72:b-f) were quite small, ranging from 6.5 to 13 cm in height and, given their presence in a child's burial, may have been toy pots. The vessel found with Burial 2 (Figure 72:a), which was also fairly small, may have been an individual serving or drinking utensil. The vessels included: (1) a plain, round based bottle with linear punctations extending from the shoulder to the rim; (2) a restricted neck plain jar with smoothed corncob impressions on the neck and a flaring, pinched rim; (3) a plain, high-necked jar with a flaring rim and a slightly flattened base, resembling a Savannah Plain vessel recovered by Caldwell (1957) from the Stamp Creek site; (4) a jar with a wide flaring rim and rounded bottom, (5) a small plain urn-shaped vessel with a slight constriction below the rim; and (6) a castellated or peaked bowl with a square orifice, nodes below each peak, and a slightly flattened base, similar to vessels described from

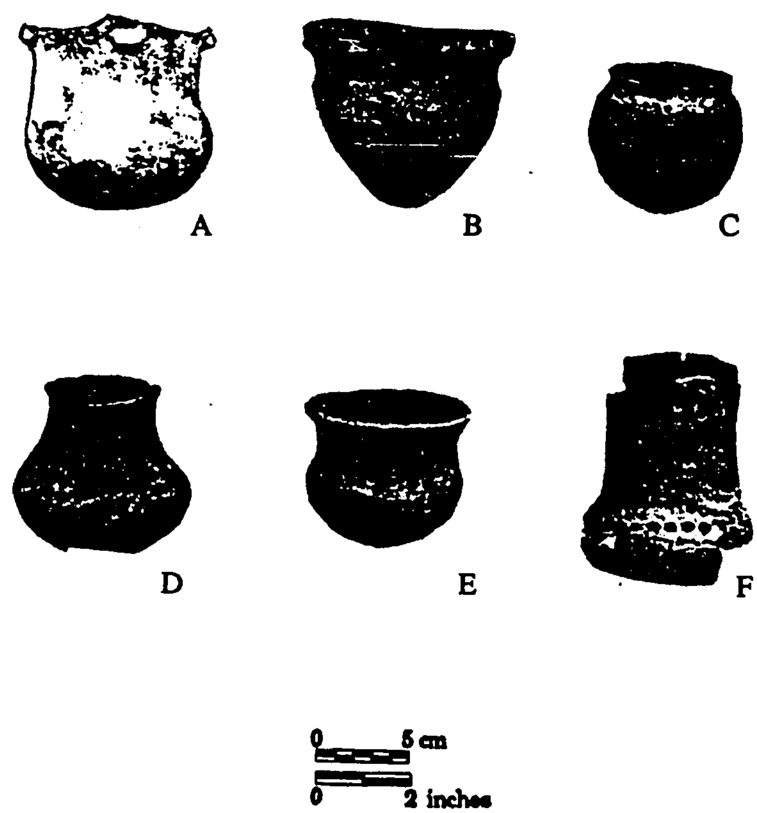


Figure 72. Intact Mississippian Vessels from the Simpson's Field Site (38An8).

Stamp Creek (Caldwell 1957) and the Park Mound in the West Point Reservoir (Hally 1979) (descriptions adapted from Wood et al. 1986:111-112).

The probable Mississippian structure in the northeast corner of the primary excavation block was an oval-to-rectangular cluster of postmolds ca. 10 to 12 m in length (NW/SE) by 7.5 m wide (NE/SW). Burials 1 and 2 lay within the structure while Feature 48 lay just outside of it to the north (Figure 71). Since most of the identifiable Woodland features were located in the western portion of the block while the three Mississippian features occurred in the eastern portion, the cluster of posts around these features were assumed to date to the Mississippian era. The fact that the two Mississippian burials were within the apparent postmold pattern defining the structure also supports this interpretation, since subfloor burial was common during this period elsewhere in this part of the drainage, notably at Rucker's Bottom (Weaver et al. 1985; Wood et al. 1986:119). A number of internal posts were present that may represent benches or dividers, but no other features beyond these posts and the two burials were found inside the structure.

Burial 1, a child of about ten years, was only minimally preserved and consisted of 15 teeth and a few small cranial fragments (Tyzzer 1986:362). Burial 2 was in much better condition, and represented the remains of a middle aged women about 157 to 160 cm in height (Tyzzer 1986:363-366). There was some indication of cranial deformation, specifically posterior flattening, but the skull was too fragmentary to be certain about this. The antemortum tooth loss and bone resorption, and the presence of excessive wear, caries, and abcesses in the remaining teeth suggested a fairly stressful existence, similar to that in many of the burials recovered at Rucker's Bottom, particularly in the Beaverdam phase village assemblage (Weaver et al. 1985:593-594). If a hamlet or small village was present at Simpson's Field, occupation by commoners, rather than high status individuals, appears likely.

Faunal remains were rare at Simpson's Field, although 571 comparatively small fragments, averaging 2.41 grams, were found in the fill of Burial 2, the only feature with preserved animal bone (Wood 1986). The sample was dominated by deer (*Odocoileus virginianus*, MNI=6), with other identified species present including rabbit (*Sylvilagus spp.*, MNI=1), oppossum (*Didelphis virginiana*, MNI=1), raccoon (*Procyon lotor*, MNI=1), turkey (*Meleagris gallopava*, MNI=1), and box turtle (*Terrapene sp.*, MNI=1) (Wood 1986:374). Mammals dominated the assemblage, accounting for 82% of the MNI and 97% of the biomass (Wood 1986:372). The absence of identifiable riverine species was somewhat surprising, given the close proximity of the channel. Specialized upland-oriented game procurement was suggested, a pattern similar to that observed in the Rembert phase occupation at Rucker's Bottom (Scott 1985:659-663).

Burial 2 produced the only identifiable Mississippian floral remains (Gardner 1986b:377-386). Domesticates included corn (*Zea mays L.*; five eight-rowed cob fragments, one twelve-rowed cob butt, and five kernels were found) and a gourd rind fragment (*Lagenaria sp.*). A single chenopodium seed was recovered, but was thought to represent localized disturbance, possibly from agricultural activity, than the intentional growth and consumption of this species (Gardner 1986b:378). Wild plant foods included acorn and hickory nut fragments, although the former were only minimally represented. Fleshy fruits recovered included grape (*Vitus sp.*), persimmon (*Diospyros virginiana*), strawberry (*Fragaria sp.*), bramble (*Rubus sp.*, i.e., raspberry, blackberry, and dewberry), and maypops (*Passiflora incarnata*). The presence of these open-habitat species suggested possible localized field clearing and abandonment, and the exploitation of early successional communities (Gardner 1986b:378). An analysis of the ethnobotanical remains by fill zone within Burial 2 was conducted by Dickens (1985:55-57) to demonstrate the kind of information that can be gained when careful control is exercised in field excavation. Seasonal differences were noted between the two lower zones, around and above the burial, and an upper zone that accumulated sometime later:

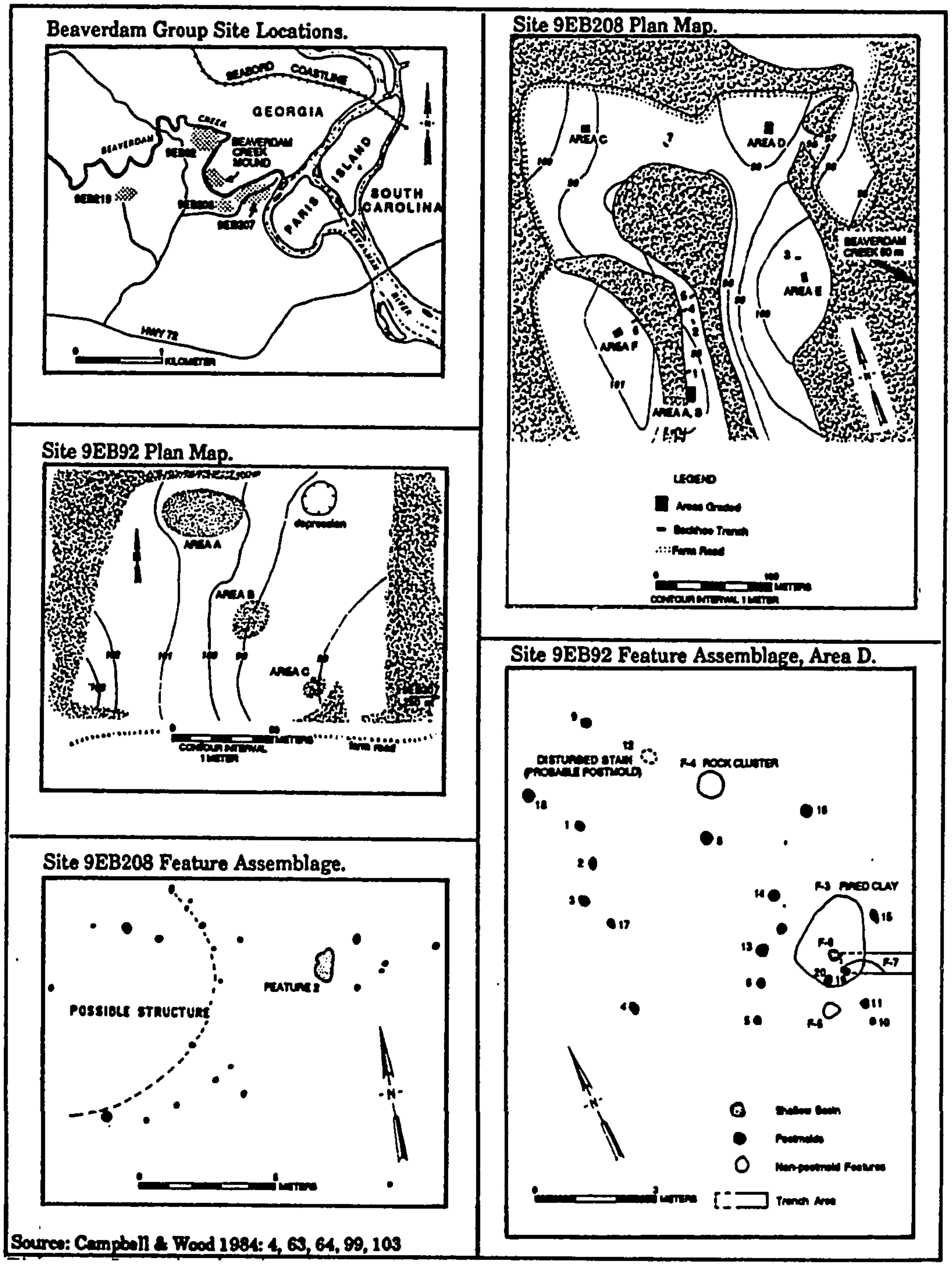
> This pit, which appears to be of the shaft-and-side chamber variety (Dickens 1976:103), contained three garbage-laden soil zones: (1) a zone of fill in the lower part of the pit around the skeletal remains, (2) a zone of fill in the central part of the pit, and (3) a zone of postburial slump in the upper part of the pit.
>
> ...Plant remains from the lower fill zone produced a seasonal profile indicating Late Spring-Early Summer deposition (i.e., interment). The middle zone (probably fill) also produced a Late Spring-Early Summer profile. The upper zone, undoubtedly representing post-burial slump, produced a Late Fall-Early Winter profile. It is important to note that the ratio of corn to nuts shifts from the lower to the upper zones. This feature provides an excellent example of the importance of separating, in recovery and analysis, fill from slump material in any feature [Dickens 1985:55-56].

From this example it is evident that paleosubsistence remains may help delimit periods of feature use, abandonment, and filling.

Beaverdam Site Group

Four Mississippian sites along Beaverdam Creek within 2 km of the Beaverdam Creek Mound were examined in 1979 and 1980 during the work in the Russell Reservoir (Campbell and Weed 1984; Gardner et al. 1983) (Figure 73). A primary goal of the research was to determine the relationship between these sites and the center, particularly whether they represented outlying villages or hamlets in a settlement hierarchy. Systematically dispersed surface collection or shovel tests units were dispersed over each site to locate concentrations, which were then examined by small machine-stripped block units or hand excavated test pits. Mississippian artifact and feature concentrations at each site were found to be spatially limited, and household or hamlet-sized occupations were indicated. Post stains were found at all four sites, and a fairly well-defined circular postmold pattern from a probable domestic structure was found at 9EB208.

9EB92. Site 9EB92 was located on a large alluvial terrace overlooking a major bend in Beaverdam Creek. Fourteen test pits were opened and an extensive general surface



Source: Campbell & Wood 1984: 4, 63, 64, 99, 103

Figure 73. Beaverdam Site Group Locations and Features.

collection made during initial survey and testing operations, recovering Early Archaic through Mississippian remains (Gardner et al. 1983:48-55; Taylor and Smith 1978:368, 388). In 1980, following a controlled surface collection, the plow zone was stripped from five 6 by 5 m blocks placed within artifact concentrations. While three of these blocks were unproductive, in Area D in the northeast corner of the site 20 postmolds, a rock cluster, and three pits were found, scattered about a patch of burned clay from a possible hearth (Figure 73; Campbell and Weed 1984:62-66). Pottery was found in 13 of the 25 features. While most of this was plain, the presence of several burnished, check and complicated stamped sherds, and one folded rim, indicate that most of the feature assemblage derived from a Beaverdam or Rembert phase occupation. No patterning was observed in the postmolds, although possible wall lines were suggested. Two of the three pit features were small, averaging 20 and 40 cm in diameter, respectively, while the third was a large bell-shaped pit ca. 1.5 m in diameter (Campbell and Weed 1984:65-66). Probable Mississippian ceramics were found in the fill of all three features, and traces of bone were found in one of them. The only other paleosubsistence remains found were three maize kernels in one of the post stains (Campbell and Weed 1984:134). The feature assemblage was tentatively interpreted as the remains of a hamlet. One or more Mississippian structures may have been present on the site, given the various possible wall post lines that were observed, although unfortunately no further investigations were conducted.

9EB207. At site 9EB207, on a low alluvial terrace, only inconclusive evidence for Mississippian structures was found. Investigations included a general surface collection (Taylor and Smith 1978:369), the excavation of 24 1-m units in initial testing (Gardner et al. 1979:39-47), followed by a controlled surface collection and the excavation of 20 additional 1 m or 1 by 2 m test pits, 15 backhoe trenches, and two 5 by 10 m blocks that were machine stripped in an effort to locate subplowzone features (Campbell and Weed

1984:73-98). Only six small pit features and seven postmolds were found in the units, none identifiable to a specific period. The only concentration of features detected was three scattered postmolds and a pit found at the base of the plow zone in one of the two blocks. Small quantities of Savannah Check, Complicated Stamped, and Burnished Plain pottery were found in the upper levels of several of the units and on the surface, suggesting some or all of the features were associated with a Beaverdam phase component. Earlier Archaic and Woodland materials were also found in these same contexts, however, rendering the dating of the feature assemblage equivocal. Given the infrequent occurrence of Mississippian artifacts and features, little more than a hamlet or special activity area was indicated.

9EB208. Evidence for a Mississippian structure was found at 9EB208, on an upland ridge nose some 450 m south of Beaverdam Creek (Campbell and Weed 1984:98-110). A quartz outcrop was present on the ridge, and a large quantity of chipping debris was observed about it, together with Early Archaic through Woodland projectile points and a number of ceramics, most presumably Mississippian in age (Campbell and Weed 1984:99-100; Taylor and Smith 1978:416, 427). During county soil removal operations in 1980 a large number of features were observed, prompting hurried salvage excavations in two areas. Three scattered posts were found in one area, and 26 posts and a pit in the other; the majority of the posts in the latter area formed a semicircular outline approximately 7 m across (Figure 73). The presence of one or more structures was indicated, although given the extent of disturbance little more could be determined.

The post arc, if complete, would have formed an outline comparable in size to several of the circular structures observed at Rucker's Bottom, suggesting a hamlet may have been present at the site. A Beaverdam phase occupation was indicated; two Savannah Check Stamped sherds were found in the fill of one of the posts, while a Savannah Complicated Stamped sherd was found in the fill of Feature 2, an irregular basin ca. 90 by 50 by 40 cm in extent with several lenses of ash, charcoal, and fired clay in the fill. Located about three meters east of the post arc, with several small post stains nearby, Feature 2 appeared to have been a hearth that saw repeated use. The small posts may have been from a windbreak, drying racks, or other facilities associated with the hearth. While contemporaneity cannot be determined, the feature may have been an exterior or summer hearth used by the occupants of the structure. At the Rucker's Bottom site comparable features were observed near at least two structures; one contained dense quantities of charcoal, bone, and fired clay, and was almost certainly a cooking pit (Anderson and Schuldenrein 1985:559).

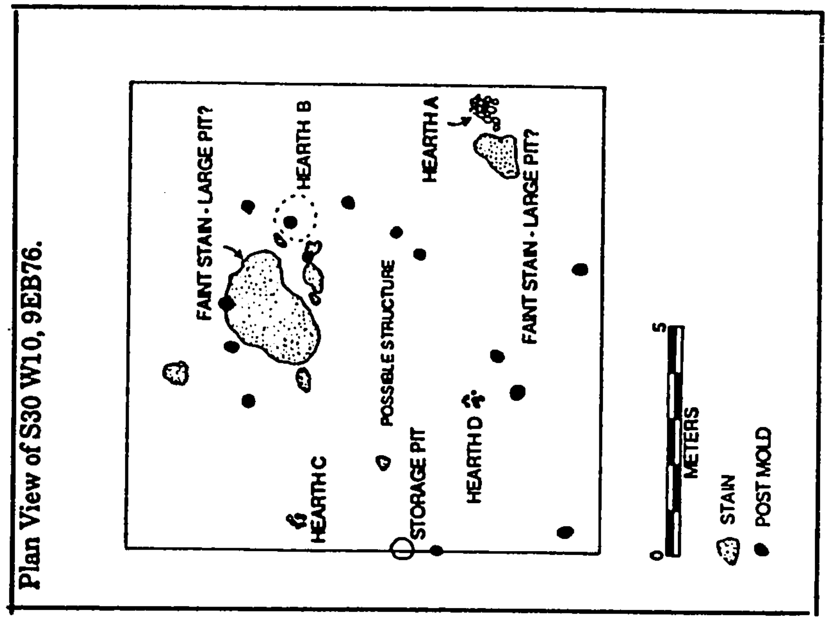
9EB219. At 9EB219, the fourth site examined in the Beaverdam Group, evidence for a small Etowah component was found (Campbell and Weed 1984:110-126). Investigations included general surface collection (Taylor and Smith 1978:426), the excavation of six 1-m and two 0.5-m units (Gardner et al. 1983:56-61), and systematic shovel testing and the excavation of eight 2-m units (Campbell and Weed 1980:115-116). Four postmolds, one amorphous basin-shaped pit feature, and portions of a crushed Etowah Complicated Stamped vessel with a rectilinear nested square design were the only features found in the units (Campbell and Weed 1980:118; Gardner et al. 1983:5). Two of the postmolds and the crushed vessel were found in a single 2-m unit, while the other features were isolated. A range of Archaic, Woodland, and Mississippian diagnostics were found mixed together in the upper levels of the test units, making the dating of the features difficult. Moderate Mississippian occupation was indicated by the presence of small triangular points, burnished plain and complicated stamped sherds, and the crushed vessel. Two-bar nested diamond motifs were present, together with a number of unidentifiable curvilinear design fragments, suggesting Jarrett and Beaverdam phase components. While the presence of Mississippian structures at the site was suggested, it could not be confirmed.

Big Generostee Creek

A single disturbed burial of an adult female was found in one of five 2-m test units opened at the Big Generostee Creek site (38AN126) in 1980 during work in the Richard B. Russell Reservoir (Wood et al. 1986:197). The presence of Mississippian small triangular points and a ceramic assemblage characterized by notched appliqued rimstrips, finger-pinched appliqued rimstrips, bold incising, corncob impressions, and two-bar nested diamonds in the upper levels of the five test units argue for a Beaverdam or Rembert phase age for the interment (Wood et al. 1986:203-205). Although Rembert phase ceramics and two triangular points were present in the pit fill, its dating must be considered provisional. The burial had been badly disturbed by a historic excavation, and earlier Connestee and Dunlap materials, as well as two historic square nails, were also present in the fill (Wood et al. 1986:178, 185-186). The burial was apparently an adult female of comparatively short stature (150 to 155 cm) and indeterminate age, although probably somewhere between 20 and 40 years (Tyzzer 1986:367-369). In the absence of pelvic remains the sex determination was tentative, having been based on the presence of a gracile cranial and facial morphology. Antemortum molar and premolar loss with significant resorbtion, caries, and wear to the secondary dentine on many of the surviving teeth implied a stressful existence. The pathologies were comparable to that noted on presumed commoner burials from the Rucker's Bottom and Simpson's Field sites. Whether a hamlet or a small village, or some other site type was present, could not be determined.

Rufus Bullard

A series of posts from a possible structure were observed immediately below the plow zone in a 10 by 10 m block opened on the levee crest at the Rufus Bullard site (9EB76) in the Richard B. Russell Reservoir (Anderson et al. 1985). Twelve posts, four rock clusters from probable hearths, and two large diffuse stains were found (Figure 74).



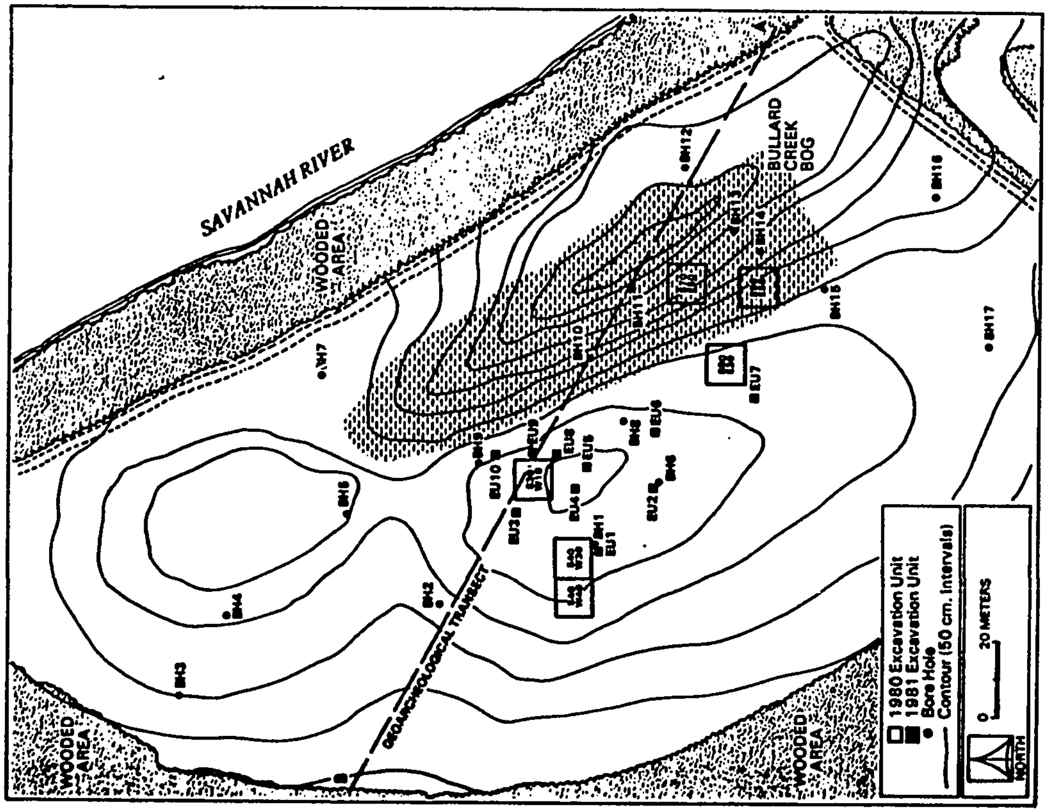


Figure 74. Late Woodland/initial Mississippian Structure at the Rufus Bullard Site (9Eb76).

The features defined an oval approximately 7 by 4 m in extent, and a probable Late Woodland or Mississippian age was inferred (Flint and Suggs 1980:8, 67). Terminal Late Woodland occupations at the site are indicated by two radiocarbon dates of 1000±55 BP (UGa 3613) [calibrated ca. AD 1018; Stuiver and Pearson 1986:829] and 860±55 BP (UGa-3616) [calibrated ca. AD 1181; Stuiver and Pearson 1986:829] from features located in other units (Flint and Suggs 1980). Cartersville and Mississippian Beaverdam and Rembert phase pottery were found in some incidence in the area of the structure (Anderson et al. 1985:162). The Cartersville assemblage consisted exclusively of plain and simple stamped finishes and appears to have been fairly late, possibly dating to the Late Woodland period. The site occupies a large bottom adjacent to the Savannah River, and Mississippian artifacts were observed over an appreciable area, occurring in all of the units excavated. The principal occupation during the Mississippian period appears to be during the Rembert phase, given the high incidence of decorated rim strips (Anderson et al. 1985:164). A number of hamlets, or possibly a small village, were probably present on the site.

Van Creek

An unusual Mississippian component was examined at the Van Creek site (9EB382) during the investigations in the Richard B. Russell Reservoir (Anderson and Schuldenrein 1985:115-147). The site a predominantly surface and plow zone artifact scatter extending over approximately half a hectare on an old Pleistocene terrace overlooking Van Creek, and about 1 km upstream from the confluence of the creek with the Savannah River (Figure 75). The diagnostic assemblage was dominated by lithic artifacts, specifically small triangular arrow points, which was somewhat unusual given that the site was just 400 m west of the dense village occupation at Rucker's Bottom, across a swampy swale. The Van Creek site was discovered in 1977 by Taylor and

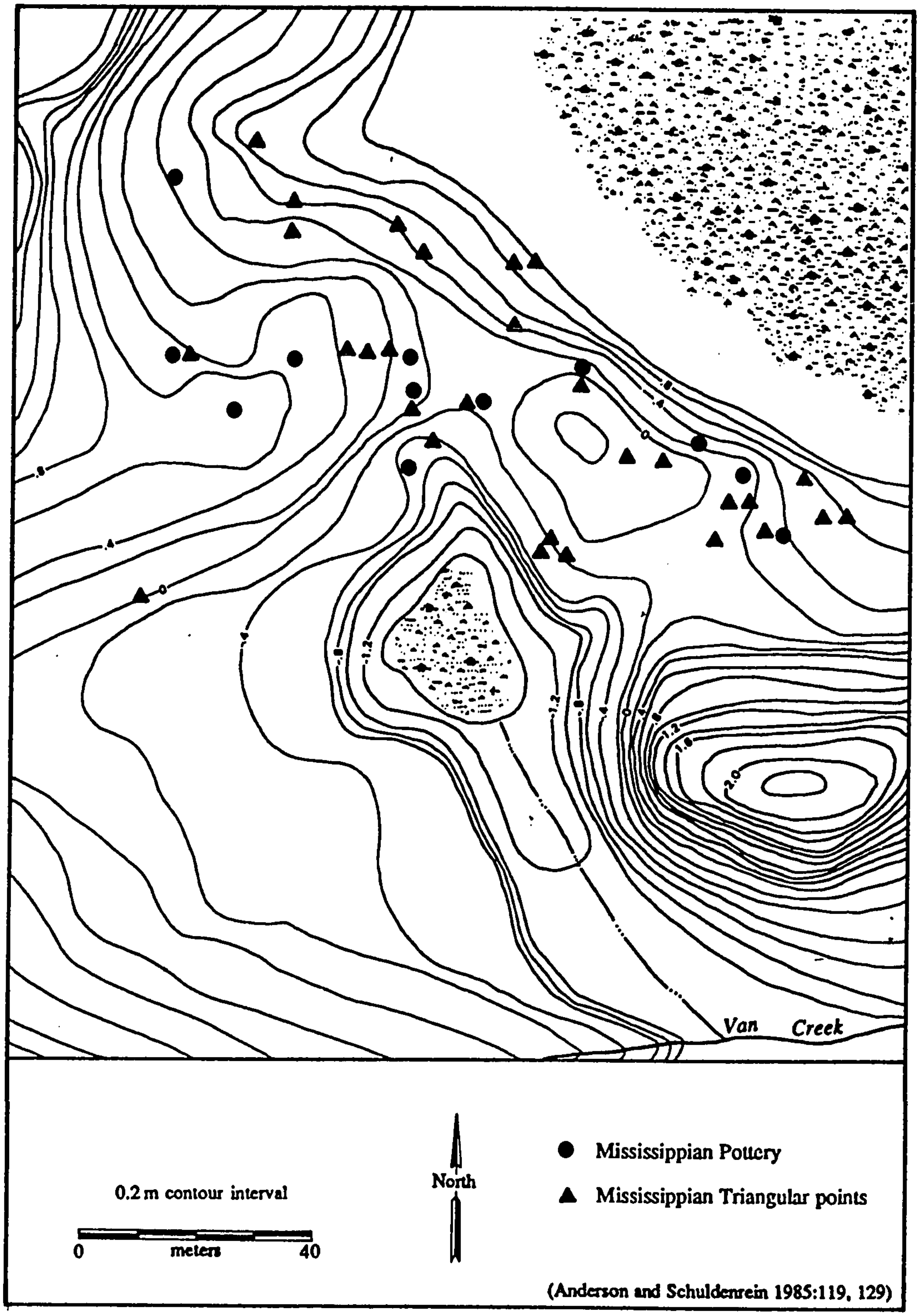


Figure 75. Mississippian Diagnostics at the Van Creek Site (9Eb382).

Smith (1978:376, 398), who collected a small number of lithic and ceramic artifacts from the surface. It was revisited in 1979, when four 1-m test units were opened. Early Archaic, Late Archaic, and Mississippian artifacts were found in the shallow deposits, essentially a plow-disturbed A-horizon lying on thick, sterile clays (Gardner et al. 1983:117-118). In 1980 the site was extensively examined by Anderson and Schuldenrein (1985), who conducted a 12.6% controlled surface collection using 105 dispersed sample circles, excavated ten 2-m test pits, and opened three geoarchaeological backhoe trenches. A moderately dense artifact assemblage was found, spanning the Early Archaic through Mississippian periods. The site was found to lie entirely in the plow zone, with no evidence for subplowzone features.

The most extensive use of the Van Creek site, measured in terms of the number of diagnostic artifacts recovered, was during the Mississippian period. Artifacts dating to this period included 29 small triangular points and 10 complicated stamped sherds, and it is probable that many of the unidentifiable point fragments, plain and nondiagnostic sherds, and at least some of the other artifactual debris also derived from this occupation. The fragmentary stamp design elements on the pottery suggest a Beaverdam or Rembert phase age for the Mississippian assemblage. Diagnostic Mississippian period artifacts were found distributed over much of the northern part of the site, with some evidence for a slight preference for lower elevations, adjacent to and overlooking either the swale or a swampy tributary of Van Creek. All of the Mississippian Triangular points were either quartz (N=27) or quartz crystal (N=2), suggesting local raw material procurement. Many were broken, although roughly equivalent numbers of tips and bases were found, suggesting extensive hafted biface use and breakage, and probably discard, in the immediate site area. Other probable Mississippian tools present included expedient unifaces and crude bifaces. The high incidence of projectile points and the low incidence of ceramics was the opposite of the pattern observed at the Rucker's Bottom village located across the swale, where ceramics far outnumbered points. Contemporaneous use of the Van Creek site area was indicated, apparently for short-term tasks such as hunting or otherwise exploiting the swale margin. The area may have served as an animal butchering and processing station, intentionally located a discrete distance from the main village.

Late Prehistoric Occupations in the Savannah River Valley: Chronological and Cultural Subdivisions

The late prehistoric cultural sequence for the Savannah River Valley was illustrated in Figure 22 above. Fine-grained late prehistoric cultural sequences have been developed in three parts of the basin. Because these sequence differ appreciably in the lower, central, and upper portions of the valley, these areas are discussed separately. At the present, thanks tó an extensive history of research, temporal resolution on the order of 100- to 150-year intervals is currently possible in most areas. While these intervals will need to be and in fact are continually being narrowed, they are sufficiently fine-grained enough to permit detailed examination of local Mississippian political and cultural evolution. Absolute chronological control for these sequences has been provided by a number of radiocarbon dates (Hally and Rudolph 1986:21-26; these dates are, however, in need of updated calibration), and the cross-dating of materials dated in sequences developed in nearby areas of South Carolina, Georgia, and North Carolina.

In the South Appalachian area the complicated stamped pottery tradition established in the Woodland period continued into the Mississippian, and variations in design motif, rim treatment, and other incidental decoration have proven to be highly sensitive chronological markers. Rim modification has proven a particularly sensitive chronological indicator. A sequence of unmodified to collared rims, to rims with rosettes or punctations, and then to applied and pinched rim strips is evident over much of the region (Hally and Rudolph 1986:63; Reid 1967; Rudolph 1983; Smith 1983). While plain (unmodified) rims continue to occur, the incidence of folded and punctated, pinched, or notched rim strips increases over time in the region, with the later treatments typically larger and more poorly executed. This phenomenon was originally noted by Kelly (1938:48) at Macon Plateau and by Caldwell and McCann (1941:41) in the Irene Mound report, where "transitional" rim forms belonging to the period between the Savannah and Irene occupations were illustrated. It has recently been documented in Mississippian assemblages from central South Carolina (DePratter and Judge 1986; South 1973; Stuart 1975). Finally, in central Georgia Rudolph and Blanton (1980:16) have documented an increase in rim strip width over time, and both Smith (1981:185-188) and Rudolph (1983:90-93) have documented an increase in finger pinching and a decrease in punctation over time.

Design motifs are also useful for identifying assemblages to specific periods (Figures 76, 77). Some complicated stamped motifs, such as Irene filfot crosses or line blocks, have fairly tight temporal occurrences. A decrease in check stamping, to give another example, is well documented over the course of the Mississippian along the Savannah, both at the mouth and well into the interior (DePratter 1979:111; Rudolph and Hally 1985). Some caution is essential, however. There is increasing evidence emerging from recent work along the upper Savannah and Oconee rivers that some supposedly "diagnostic" design motifs – such as nested diamonds, which are traditionally linked with Etowah/early Mississippian components – actually occur somewhat later in time as well (Anderson et al. 1986:38; Hally and Rudolph 1986:37-51; Smith 1981:182-186, 1983:75-81). Care must thus be used when dating local assemblages, and large sherd samples are essential for fairly precise age determinations. In spite of these limitations, well-documented ceramic sequences have been produced for the Savannah, upper Oconee, and upper Wateree river valleys in recent years (Anderson 1987b; Anderson et al. 1986; DePratter 1979; DePratter and Judge 1986; Hally and Rudolph 1986; Rudolph

Figure 76. Late Woodland/Mississippian Complicated Stamped Design Motifs Found in the Savannah River Basin (I).

Swift Creek series

1	Snowshoes
2	Concentric circles with cross-in-circle
3	Concentric circles w/rectilinear design
4	Spirals
5	Concentric loops/"owl eye"

Napier series

6	Ziz-zag multiline strands w/block filler
7	Multiline strands crossing over each other, w/block filler
8	Combination curvilinear/rectilinear multiline strands

Woodstock series

9	Barred oval (curvilinear designs)
10	Barred rectangle/diamond (rectilinear designs)

Etowah series

11	Nested diamonds - one bisecting line
12	Nested diamonds - 2 bisecting lines
13	Nested diamonds - two bar
14	Nested diamonds - three bar
15	Nested diamonds - 1 horizontal, 1 vertical bisector
16	Nested diamonds - two bar cross
17	Nested diamonds - 3 bar horizontal, 2 bar vertical bisector

Savannah series

18	Concentric Circles- bulls eye
19	Concentric Circles- hollow center
20	Concentric Circles- one bisecting line
21	Concentric Circles- 1 horizontal, 1 vertical bisector
22	Concentric Circles- two bar cross
23	Figure 8

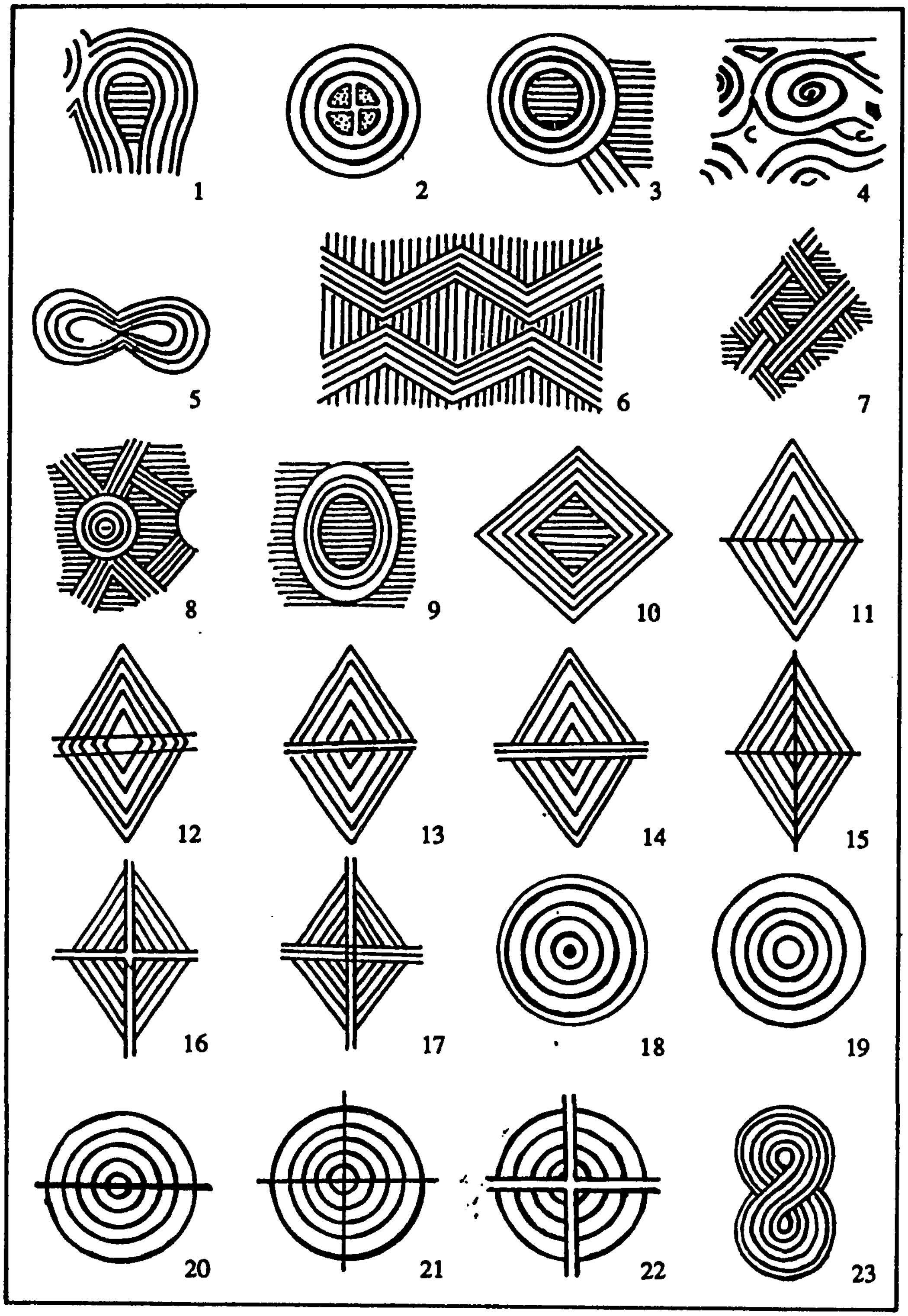


Figure 76. Late Woodland/Mississippian Complicated Stamped Design Motifs Found in the Savannah River Basin (I).

Figure 77. Late Woodland/Mississippian Complicated Stamped Design Motifs Found in the Savannah River Basin (II).

Savannah series (continued)

24	Keyhole
25	Figure 9/Nested P's
26	Interlocking circles

Irene series

27	Filfot Cross
28	Filfot Scroll
29	Line block
30	Line block/nested squares

Lamar series

31	Nested rectangles/frets w/cross
32	Herring bone
33	Herring bone, bisected
34	Nested T
35	Arc-angle
36	Nested squares

Pisgah series

37	Ladder

Irene/Lamar series

38	Brackets and circles
39	Scrolls
40	Brackets and ovals
41	Line-filled triangles
42	Nested triangles

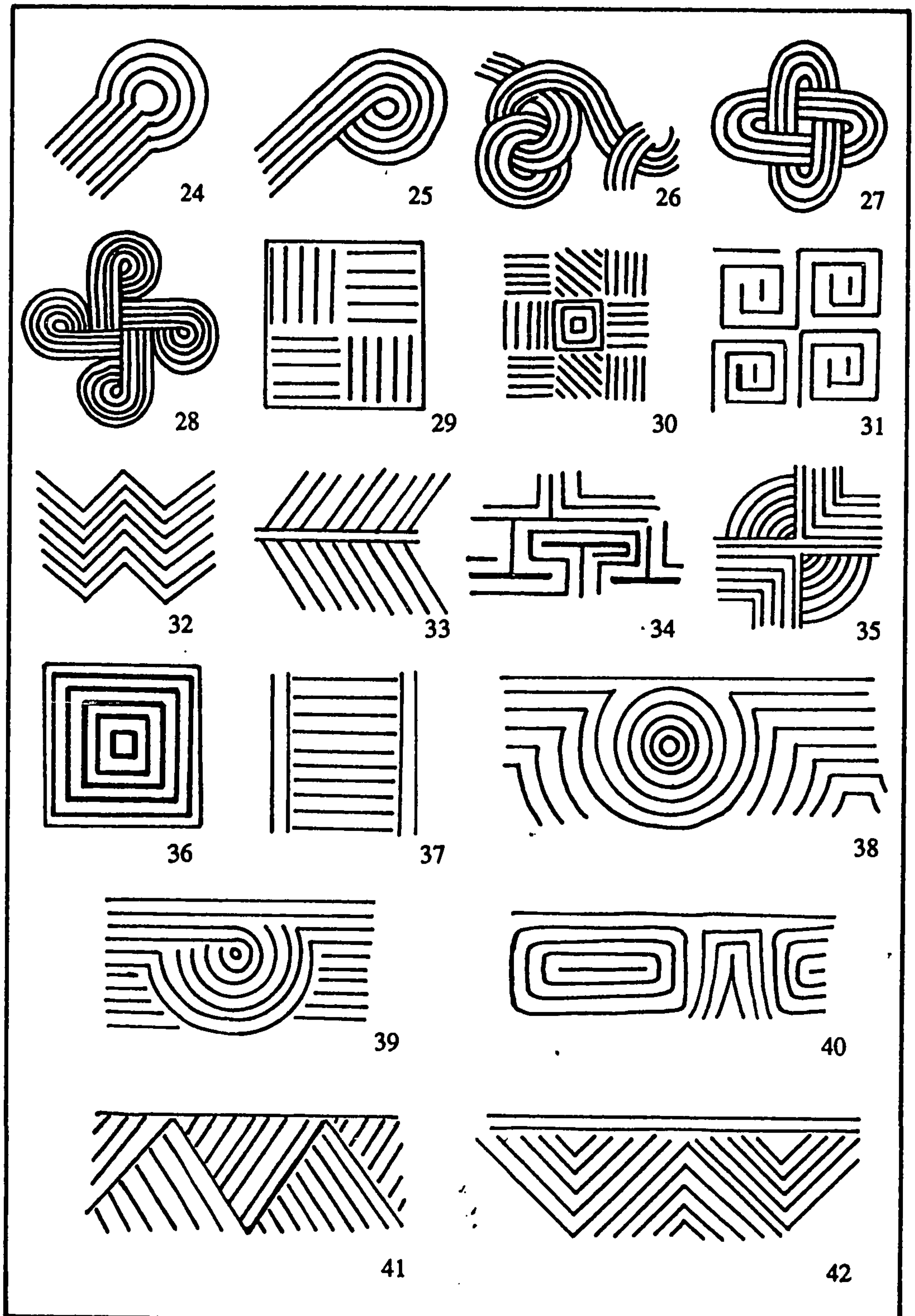


Figure 77. Late Woodland/Mississippian Complicated Stamped Design Motifs Found in the Savannah River Basin (II).

and Hally 1985; Sassaman and Anderson 1989; Smith 1981, 1983; Williams and Shapiro 1987).

The discussion that follows focuses on ceramics, since these artifact types have been found to be chronologically sensitive. Traditional taxonomic categories and temporal assignments have been noted for each period as appropriate. Specific types and varieties employed here follow criteria reported in previous ceramic analyses conducted within the Savannah River Basin and immediately adjoining areas. The emphasis on ceramics, it should be noted, is the result of necessity, not choice. Attempts to use other artifact categories to date components, such as pipes and projectile points, have had little success so far (Anderson n.d.c; Rudolph and Hally 1985:287-295), although temporal trends may be present within these artifact categories that may ultimately prove of chronological value. A decrease in the size of triangular arrow points has been documented between the Late Woodland and Mississippian period, for example, in the Coastal Plain portion of the drainage (Sassaman et al. 1989), although unfortunately no such changes have been observed in the small triangular points that characterize Mississippian occupations in the drainage. Pipes forms are also thought to have temporal significance, but to date little attention has been directed to these artifact types.

The Lower Savannah River Late Prehistoric Sequence

Background. Kelly (1941:vi), in the foreword to the Irene Mound report, noted that "the importance of the Lower Savannah Basin in southeastern archaeology can hardly be overemphasized." During the WPA, extensive excavations were conducted at a number of Late Archaic through Mississippian period sites near the mouth of the Savannah River in Chatham County, Georgia. This work, at Bilbo, Deptford, Oemler, Irene and other sites in the area, enabled Caldwell and Waring (1939a, 1939b; Waring 1968d) to devise a prehistoric ceramic sequence for the lower Savannah drainage. The basic outline of this sequence, encompassing the Stallings, Deptford, Wilmington, Savannah, and Irene series, in chronological order from earliest to latest, was established at this time.

Described as "one of the finest local sequences based on stratigraphic evidence that exists in southeastern archaeology" (Williams 1968:101), the mouth-of-the-Savannah sequence has seen only minor revision in the intervening half century since its formulation, including the addition of the Refuge series, intermediate between Stallings and Deptford, in the late 1940s (Waring 1968e), and the addition of the St. Catherines series, intermediate between the Wilmington and Savannah series, in the early 1970s (Caldwell 1971:91; DePratter 1979:119, 131-132). In 1979 DePratter presented a detailed overview of the sequence, with a description of many of the types used to define periods. Since then, only minor revisions to the Mississippian portion of the sequence have been proposed, specifically that the Savannah Check Stamped and Complicated Stamped types appear to have had a longer duration (Anderson et al. 1986:42-44). For the later prehistoric and protohistoric era, the sequence in its present form provides chronological control on the order of 150-200 year intervals for the period from roughly A.D. 800 to A.D. 1700. Until quite recently, the mouth of the Savannah sequence was used, with varying degrees of success, throughout lower South Carolina and Georgia. As work has progressed in the region, however, the development of more applicable local sequences has occurred, eliminating the need for its application far afield.

The Sequence. Late Woodland components in the extreme lower portions of the Savannah basin are characterized by the lumpy, poorly finished clay/grog-tempered wares of the Wilmington and St. Catherines series, and by intermediate-sized triangular projectile points (DePratter 1979). Clay/grog-tempered paste has rounded, subrounded, and irregular lumps of sherd, clay, or fired clay ranging in size from ca. 2 to 10 mm mixed into it. These inclusions typically differ appreciably in color and texture from the surrounding body of the sherd. Two Wilmington phase have been established in the mouth of the Savannah sequence. The first, Wilmington I, dates from A.D. 500 to 600 and is characterized by clay/grog-tempered Wilmington Check stamped, Heavy Cord Marked, Plain, and Walthour Complicated Stamped ceramics, the latter an apparent late Swift Creek variant. No interior equivalent for this phase has been observed, although there was undoubtedly a period when the manufacture of Deptford and interior Wilmington wares overlapped. Wilmington II phase components, which date from ca. A.D. 600 to 1000, are identified by the presence of Wilmington Plain, Brushed, and Heavy Cord Marked pottery. The bold parallel cord marked assemblages are particularly diagnostic of the period.

St. Catherines phase assemblages, which date from A.D. 1000 to 1150, continue to be dominated by grog tempering, although the size of the temper inclusions decreases compared with the previous period. St. Catherines Plain, Burnished Plain, Fine Cord Marked, and Net Marked all occur, with the grog-tempered fine cross cord marked the key diagnostic. Cord impressions are much narrower and more carefully executed than on the preceding Wilmington period vessels, and St. Catherines vessels are much better made than their Wilmington predecessors, with well-smoothed to burnished interiors. The only appreciable difference between St. Catherines and the succeeding Savannah I phase, which dates from ca. A.D. 1150 to 1200, is a change from grog to sand-tempering. Plain, burnished plain, fine cross cord marked, and net marked exterior finishes continue to be present, although they are now typed within the Savannah series, with Savannah Fine Cord Marked the key diagnostic. Net marking, a rare type during the St. Catherines phase, drops out in the Savannah I phase. No such temper change occurs in the middle Savannah sequence at this time, although fabric impressed pottery, possibly an interior and much longer lasting variant of St. Catherines Net Marked, also disappears.

The Savannah II (A.D. 1200 to 1250) and Savannah III (A.D. 1250 to 1300) phases at the mouth of the river defined by DePratter (1979:111) are distinguished by the appearance of check stamping and complicated stamping, respectively. Savannah III Complicated Stamped pottery is dominated by curvilinear, concentric circle or oval motifs. While there is stratigraphic evidence for this succession at a number of sites, including Irene, the subdivision of Savannah into three 50 year phases appears too restrictive. Savannah Complicated Stamped pottery, for example, the key diagnostic for identifying a Savannah III component, occurs in the first seven mound stages at Irene. It is highly unlikely that all of this construction activity occurred within a 50 year period. Likewise, it seems unlikely that the widespread occurrence of both Savannah Check Stamped and Savannah Complicated Stamped pottery in the lower basin reflects no more than a 100 year period. A somewhat broader span for these phases, from ca. A.D. 1150 to 1200 for Savannah I/II, and from A.D. 1200 to 1300 for Savannah III, is suggested here.

The Irene I phase (A.D. 1300 to 1400) at the mouth of the river is identified by the appearance of Irene Complicated Stamped pottery, characterized by filfot cross and line block motifs, and a variety of rim decorative treatments (DePratter 1979:111). Bold incising, a hallmark of later periods, appears for the first time, but in low incidence and with relatively simple one to three line designs placed just below the rim primarily on bowls. Rim treatment has proven a particularly sensitive temporal indicator during this period. Plain folded rims occur in small numbers late in Savannah III, followed by hollow cane punctations and riveted nodes during the transition from Savannah III to Irene I, with rosettes and narrow folded rims with cane punctations and, rarely, finger pinched appliqued rim strips characteristic of Irene I assemblages. The mouth of the Savannah River was apparently abandoned by the end of the Irene I phase, as succeeding Irene II phase (A.D. 1400 to 1550) components, characterized by a marked increase in bold incising, are almost unknown.

Discussion. Although the broad outline of the late prehistoric cultural sequence in the lower Savannah basin has been known for over half a century, there is room for considerable refinement, particularly determining precise periods of occurrence of specific surface finishes, design motifs, and rim treatments. While there is some indication that folded and stamped or incised rims become more common on cord marked vessels in later St Catherines/Savannah I times, for example, this remains to be conclusively demonstrated. Likewise the temporal range of design motifs now used somewhat uncritically to identify phases, such as concentric circles, line blocks, and filfot crosses/scrolls, or certain types of rim treatment, remain to be determined. Finally, the nature of occupation at the river mouth after A.D. 1450 needs to be resolved. While the area is thought to have been abandoned (Anderson et al. 1986), this remains to be fully documented.

Exactly how late Late Woodland assemblages, specifically those dominated by cord marking, persist in the lower and middle Savannah River Valley is currently the subject of some debate. Along the southern coast, in Beaufort County, excavations at three sites on Pinckney Island tested and demonstrated the general utility of the mouth-of-the-Savannah sequence in that area (Trinkley 1981). The fieldwork did suggest that St. Catherines pottery, dated from A.D. 1000 to 1150 in the mouth-of-the-Savannah sequence, might occur as late as the 16th century A.D. in that area (Trinkley 1981:82; see also Braley 1983; Brooks 1983). Excavations at the St. Catherines/Savannah I period Callawassie Island Burial Mound (Brooks et al. 1982) have also suggested that an essentially "Woodland" burial tradition may have continued into the early Mississippian period in the southern coastal area. Similar phenomena may have occurred in the middle Savannah River area, where M. J. Brooks and K. E. Sassaman (personal communication: 1989) have suggested that Woodland ceramics continued in use during and even after the period Mississippian chiefdoms occupied the area, from ca. A.D. 1200 to 1600. This inference, although unlikely given the low incidence of cord marking in later Mississippian assemblages from the Middle Savannah, cannot be dismissed out of hand, and will require testing. The relationships between Woodland and Mississippian occupations in the lower and middle Savannah drainage, particularly the mechanisms bringing about the transition between these seemingly markedly dissimilar forms of social organization and subsistence adaptation, will undoubtedly serve as a focus for much future research.

The Middle Savannah River Late Prehistoric Sequence

Background. Unlike the situation at the river mouth, where a lengthy and dynamic history of research has occurred, sequence development in the middle and upper part of the Savannah River basin was practically non-existent prior to the 1980s. The only major attempt at sequence definition in the central portion of the drainage was conducted in the 1960s on Groton Plantation in Allendale and Hampton counties, South Carolina, by Stoltman (1974) and Peterson (1971a, 1971b). These investigations, which consisted of intensive excavations at two sites, Clear Mount and Rabbit Mount, and survey and limited testing at approximately 20 other sites, provided a wealth of descriptive information on the kinds of ceramics present in the lower middle portion of the drainage. A major contribution of this research was the dating of Stallings and Refuge materials to between ca. 2500 and 600 B.C., in this area, and the description of the surface finishes and design elements in these early series. Unfortunately, comparatively little effort was directed to refining the later Woodland and Mississippian sequence, and materials of this period were interpreted using the sequence at the river mouth.

The ceramic sequence devised for the middle Savannah River is given in Figure 78. The sequence encompasses late prehistoric occupations in the basin from the area just above the mouth to the Fall Line. The distinctiveness of the area during the late prehistoric era is highlighted by a near-complete absence of grog-tempered Wilmington

PERIOD	PHASE	DATES	CERAMIC TYPES	VARIETIES
Historic Native American	Yamassee (provisional)	A.D. 1670-1715	Mississippian Plain	Unspecified (shell or sand tempered)
			Kasita Red Filmed	Unspecified (shell or sand tempered)
			Fine Incised/Brushed	Unspecified (shell or sand tempered)
Late Mississippian	—	A.D. 1450-1600	None - valley abandoned	
Middle Mississippian	Silver Bluff (provisional)	A.D. 1350-1450	Irene Complicated Stamped	*Irene*
			Mississippian Plain	*Unspecified*
			Folded, Appliqued Rim Strips	*Irene/Lamar*
Early Mississippian	Hollywood	A.D. 1250-1350	Irene Complicated Stamped	Irene
			Savannah Complicated Stamped	*Savannah*
			Nodes, Punctations, Rosettes	*Pee Dee/Irene*
			Savannah Check Stamped	*Savannah*
	Lawton (provisional)	A.D. 1100-1250	Savannah Complicated Stamped	
			Savannah Check Stamped	*Savannah*
			Savannah Fine Cord Marked	*Savannah*
			Santee Simple Stamped	Santee
Later Late Woodland	Savannah I	A.D. 800-1100	Savannah Fine Cord Marked	*Unspecified* (normal smoothing on interior)
			Cape Fear Fabric Impressed	*St. Stephens*
			Santee Simple Stamped	*Santee*
			Savannah Check Stamped	*Unspecified* (normal smoothing on interior)
			Woodland Plain	*Unspecified*
Early Late Woodland	Interior 'Wilmington' Equivalent	A.D. 500-800	Cape Fear Fabric Impressed	*St. Stephens*
			Heavy Cord Marked	*Unspecified* (fs/grit paste, parallel impression)
			Wilmington Heavy Card Marked	*Wilmington* (rare)
			Wilmington Fabric Impressed	*Wilmington* (rare)
			Wilmington Plain	*Wilmington* rare)
			Woodland Plain	*Unspecified*
			Woodland Cord Marked	*Unspecified* (Deptford?)
Later Middle Woodland	Deptford II	A.D. 0-500	Deptford Linear Check Stamped	*Deptford*
			Deptford Zoned-Incised Punctate	*Lewis*
			Deptford Check Stamped	*Deptford*
			Swift Creek Complicated Stamped	*Deptford*
			Deptford Simple Stamped	*Cal Smoak*
			Deptford Cord Marked	*Unspecified*
			Cape Fear Fabric Impressed	*St. Stephens*
			Woodland Plain	*Unspecified*

Figure 78. Late Prehistoric Ceramic Sequence in the Middle Savannah River Valley.

and St. Catherines ceramics, and the presence of upper valley attributes and assemblages mixed in among classic lower valley assemblages. The middle Savannah River sequence was developed in the mid-1980s (Anderson 1987b; Sassaman and Anderson 1989) in conjunction with an analysis of ceramics from the L-Lake sites on the Savannah River Site (Brooks and Hanson 1987), and building on earlier observations about late prehistoric assemblages in this portion of the drainage (Caldwell 1952; Hally and Rudolph 1986; Reid 1965; Stoltman 1974). Subsequent analyses of additional assemblages from the Savannah River Site and elsewhere in the middle Savannah River Valley have permitted considerable refinement of this initial formulation.

The Sequence. The early Late Woodland period (ca. A. D. 500 to 800) in the middle Savannah River ceramic sequence is characterized by sand-tempered plain, cord marked, and fabric impressed pottery. The principal difference between the Late Woodland assemblages at the mouth of the river and those in the middle portion of the drainage lies in the type of temper employed in each area. Wilmington and St. Catherines series ceramics along the lower Savannah are characterized by clay/grog-tempering, while assemblages in the interior are sand-tempered. Clay/grog-tempered paste is extremely rare in the middle and upper Savannah River Valley. No unambiguous diagnostic indicators exist dating assemblages exclusively to the early Late Woodland period, although sand-tempered cord marked pottery characterized by closely spaced, carefully applied wide (>2.0 mm) parallel impressions is common. The cord marked material appears to be an inland equivalent of Wilmington Heavy Cord Marked, *var. Wilmington*, observed at the river mouth. The cord width may be up to ca. 10 mm wide in extreme cases on this heavy cord marked finish. Finer cord marked pottery (<2.0mm in width) characterized by cross and parallel stamped impressions may also occur as minority finishes. Stamping varies considerably in care and execution over these latter finishes. Rims tend to be unmodified, although narrow folds are sometimes observed.

Sand-tempered fabric impressed pottery occurs in some assemblages as a minority ware. No phase names have been assigned to the early Late Woodland period, which is provisionally described as an interior Wilmington equivalent.

The later Late Woodland in the Middle Savannah falls within what is locally described as the Savannah I phase (ca. A.D. 800 to 1100), an inland equivalent of the St. Catherines and Savannah I phases from the mouth of the drainage. Fine cross cordmarked sand tempered pottery is common, characterized by closely spaced and carefully applied narrow (ca. 0.5 - 2.0mm) impressions; folded, incised, and stamped rims are sometimes observed, and appear to become more common later in the period. Separation of St. Catherines equivalents from Savannah Fine Cord Marked, var. Savannah material is currently impossible in the middle Savannah. Cord marked vessels found with Mississippian assemblages typically have highly smoothed or burnished interiors, but this is an unreliable criteria to use with small samples. Other, minority finishes that may occur include Santee Simple Stamped, var. Santee, fabric impressed and, possibly late in the period, Savannah Check Stamped, although this finish is currently placed in the subsequent Early Mississippian Lawton phase. Napier Complicated Stamped and Woodstock Complicated Stamped ceramics also occur, but are extremely rare; these series are more common in the Piedmont portion of the drainage (see below).

Early Mississippian (ca. A.D. 1100 to 1250) occupations in the middle Savannah Valley are roughly equivalent to the Savannah II/III phase at the mouth of the river and the Jarrett/Beaverdam phase in the central Piedmont, differing only in the incidence of certain finishes within assemblages. No formal phase names have been assigned, although the occupations at the Lawton Mound group suggest a provisional Lawton phase designation for components of this period. Diagnostic indicators include Savannah Complicated Stamped, Plain, Burnished Plain, Fine Cord Marked, and Check Stamped.

The Savannah series materials typically have plain, unmodified rims lacking punctations, rosettes, or nodes. Other finishes that may occur include plain (nonburnished), and, as a minority, cross V-shaped simple stamping (Santee Simple Stamped, *var. Santee*). The Savannah Check Stamped, Cord Marked, and Burnished Plain types may occur earlier than Savannah Complicated Stamped. Concentric circle motifs dominate the complicated stamped assemblages, with one and two-bar diamond Etowah less common motifs.

The Middle Mississippian period in the middle Savannah River Valley dates from A.D. 1250 to 1450, during the Hollywood and (provisional) Silver Bluff phases. Transitional Savannah/Irene or Early/Middle Mississippian assemblages in the middle Savannah River Valley are assigned to the Hollywood phase (A.D. 1250-1350). Savannah Check stamping is common, followed by Mississippian Plain, Burnished Plain, and both Savannah and Irene Complicated Stamped, the latter dominated by variations on the filfot cross motif. As at Irene during Caldwell and McCann's (1941:41-42) contemporaneous "transitional" period, cane punctations and riveted nodes with cane punctations are present. Corncob impressing occurs in low incidence.

Assemblages reflecting a mixture of attributes from the Irene I phase at the mouth of the basin and the Rembert phase in the central Piedmont appear following the Hollywood phase, during what is here provisionally described as the Silver Bluff phase (ca. A.D. 1350 to 1450). Diagnostic indicators include Pee Dee/Irene and Lamar Complicated Stamped pottery, characterized by modified rims with punctations, rosettes, nodes and, less commonly, folded rims or applied rim strips. Rectilinear line blocks and filfot crosses and scrolls dominate complicated stamped assemblages; less common motifs include the herringbone and arc-angle. Other finishes present include burnished plain and check stamping, the latter in low incidence. As at the mouth of the river, incising of any kind is rare, occurring as simple one to three line designs below the rim of bowls and sometimes in conjunction with rim modification, on folds. The Silver Bluff phase designation for assemblages of this period is provisional. If ceramic collections can be obtained from the area of the Mason's Plantation mound group they may provide the basis for establishing a local equivalent of the Irene I/Rembert phases that could be called either Silver Bluff or Mason's Plantation.

No assemblages are currently reported from the middle Savannah River that date to the Late Mississippian period (ca. A.D. 1450 to 1600). The middle and lower valley is assumed to have been unoccupied during this period, following the collapse of local chiefdoms. If occupations dating to this period are eventually documented, phase designation will be appropriate. Native settlement in the middle Savannah River Valley resumed sometime after 1600, and possibly as late as ca. 1670, and continued until 1715, when these groups were destroyed in the Yamassee War (DePratter 1979). A number of Indian groups from widely scattered areas in the Southeast and East lived along the drainage during this period, and the ceramic assemblages from these occupations are undoubtedly diverse, although to date they have been reported from only one site, Palachacolas Town (Caldwell 1948). Kasita Red Filmed, Walnut Roughened, and Ocmulgee Fields Incised type pottery were found at Palachacolas Town (Caldwell 1948:322-324), and shell tempered plain, brushed, and cord marked pottery, presumably dating to this period, have been observed on a number of other local sites. The ceramic assemblages dating from to this period are provisionally assigned to a Yamassee phase, although finer subdivision will undoubtedly occur as the sites of specific groups are examined.

Discussion. As with the mouth of the Savannah sequence, while the broad outlines of the late prehistoric sequence in the middle Savannah are known, many details remain to be filled in. Late Woodland assemblages dominated by sand-tempered cord marked pottery are widespread in the interior Coastal Plain along the Savannah River, both along the floodplain and in the interriverine uplands. Chronological control within local cord marked assemblages is poor, however, with only a rough separation between earlier and later Late Woodland currently possible, made on the basis of cord size and the occurrence of cross-stamping. There is some suggestion that rim and lip treatment has chronological significance, but this remains to be explored locally. Late Woodland diagnostics prevalent in nearby areas, such as Swift Creek and Napier Complicated Stamped pottery, found primarily to the north of the Fall Line, and Santee Simple Stamped ceramics, which are common in central South Carolina, occur in low incidence along the middle Savannah, and provide some basis for cross-dating occupations between these regions. These regional correlations are examined in the discussion of the upper Savannah River sequence.

The Mississippian cultural sequence in the middle Savannah River Valley, as currently developed, provides chronological resolution on the order of ca. 150-year intervals. Of the three mound groups present in this part of the drainage, Lawton, Mason's Plantation, and Hollywood, however, only the last has been examined in any detail. While Hollywood provides a baseline for identifying mid-13th through mid-14th century Middle Mississippian components, recognition of earlier and later components relies on the sequences developed at the mouth of the river and in the Piedmont and, hence, incorporate the strengths and weaknesses noted with these sequences. Considerable refinement of this sequence should be possible once sites dating to these periods are examined locally, particularly when and if assemblages can be obtained from Lawton and Mason's Plantation.

Late Mississippian and historic period native American occupation of the middle Savannah River is currently very poorly documented archaeologically. The area was apparently unoccupied until late in the 17th century, when the Westo and other groups, some intentionally relocated along the river to provide a buffer for the expanding South Carolina colony, are reported (DePratter n.d.). Although the locations of a number of towns occupied after 1670 have been delimited, archaeological evidence for these historic Indian settlements is minimal. As noted, the only report on a post-contact Indian site in the middle part of the basin appeared in 1948, when Caldwell described a number of artifacts found in association with burials at the early Creek town of Palachacolas, located on the Savannah River in Hampton County, South Carolina (Caldwell 1948). This site was occupied by a group of Appalachicola Indians sometime between 1680 and 1716, when it was abandoned following the Yamassee War. Kasita Red Filmed, Walnut Roughened, and Ocmulgee Fields Incised type pottery was found at Palachacolas Town, together with six shell-tempered sherds, four of them "decorated with a carelessly applied cord-wrapped stick or paddle" (Caldwell 1948:322-324). Glass trade beads, kaolin pipe fragments, European ceramics, and other historic artifacts were also found, intermingled with Indian shell beads and pottery. Shell-tempered pottery has been found in several other surface collections from the middle Savannah River Valley, where it is assumed to reflect comparable early historic occupations. The documentation of these late occupations, however, remains a major research challenge.

Upper Savannah River Late Prehistoric Sequence

Background. In the late 1970s and early 1980s a detailed cultural sequence was developed in the upper Savannah River basin, as a direct result of the extensive archaeological investigations undertaken in the Richard B. Russell Reservoir (Anderson and Joseph 1988). Prior to this time no work directed to sequence definition had been done in this portion of the basin. The large scale surveys that took place in the Clarks Hill, Hartwell, and Keowee-Toxaway reservoirs from the late 1940s through the late 1960s, unfortunately, were characterized by only minimal analysis and reporting. While intensive excavations were conducted in conjunction with these reservoir projects at the Chauga, Estatoe, I. C. Few, Lake Spring, Rembert, and Tugalo sites (Caldwell 1953, 1956; Kelly and De Baillou 1960, Kelly and Neitzel 1961, Miller 1949), the reports that did appear were largely descriptive, with little emphasis directed to sequence definition or refinement. The sequence that has emerged in the upper Savannah River Valley, while resting upon a considerable body of primary evidence, also owes a great deal to work conducted in three adjoining areas, in northern Georgia, south-central North Carolina, and western North Carolina.

Extensive archaeological survey and testing activity took place in northern Georgia during the WPA era, and in the Allatoona Reservoir shortly after the Second World War, work that yielded the classic northwest Georgia Kellogg - Cartersville - Etowah - Savannah/Wilbanks - Lamar ceramic and cultural sequence (Fairbanks 1950; Wauchope 1948, 1950, 1966). The north Georgia sequence, as modified through the years by the inclusion of later Woodland/initial Mississippian series such as Swift Creek, Napier, and Woodstock, and better dating of the initial Woodland Kellogg series, continues to be a basic framework for identifying and dating ceramic prehistoric assemblages in northern Georgia and South Carolina (Bowen 1982; Caldwell 1950, 1957; Hally and Langford 1988; Hally and Rudolph 1986; Sears 1958; Wauchope 1966; Wood and Ledbetter 1988).

Under the direction of Joffre Coe and his colleagues at the Research Laboratories of Anthropology at the University of North Carolina, Chapel Hill, archaeological investigations have been carried out since 1937 at the Town Creek site, located on a tributary of the Pee Dee River in south-central North Carolina. The mound and associated stockaded village area, an enclosure encompassing approximately two hectares, have been almost completely excavated. The site assemblage was used to define the Pee Dee focus by Coe (1952:308-309), and the associated ceramics, formally described by Reid (1967) as the Pee Dee series, have since been recognized at sites across South Carolina, including within the Savannah River Valley (Anderson 1975, 1982; Ferguson 1971; Reid 1965). Pee Dee series material, which has been dated to the 13th to 14th centuries (Dickens 1976:198), thus serves as a temporal benchmark for local

Middle Mississippian remains. Recent descriptive and comparative analyses of Pee Dee materials from the Wateree Valley of central South Carolina, furthermore, are clarifying the placement of this series, and associated decorative attributes, in the overall Mississippian sequence (DePratter and Judge 1986; DePratter 1987b).

Work in the Appalachian Summit area of western North Carolina conducted in the 1960s and early 1970s produced the third extralocal sequence that has been used with fair effect in the upper Savannah River basin (Dickens 1976; Egloff 1967; Keel 1976; Moore 1981; Purrington 1983). The ceramic prehistoric and protohistoric portions of this sequence encompass the Swannanoa, Pigeon, Connestee, Pisgah, and Qualla phases, and accommodate at least some of the materials found on sites in northern and northwestern South Carolina. Swannanoa series ceramics are early Woodland in age, appearing around 700 B.C. Pigeon series materials date to the initial Middle Woodland, while Connestee materials are of later Middle Woodland and possibly Late Woodland age. The Pisgah phase, which spans the prehistoric Mississippian period, remains to be subdivided, but encompasses the immediate precursors of the historic Cherokee peoples, represented by the Qualla phase. The utility of this sequence in northern South Carolina remains to be conducted, although it appears to work fairly well along the upper Savannah River (Anderson and Joseph 1988; Beuschel 1976).

In the early 1980s the ceramic collections from the Rembert, Chauga, Tugalo, and Estatoe mound sites were reanalyzed by Hally in conjunction with analyses of the collections obtained during the Russell Reservoir investigations to develop a Mississippian sequence for the upper Savannah River (Anderson et al. 1986:38-42; Hally and Rudolph 1986; Rudolph and Hally 1985:261-280, 447-470). The massive, well-controlled excavation assemblage from the Beaverdam Creek Mound, coupled with the collections from sites such as at Rucker's Bottom and Clyde Gulley, and comparisons with assemblages from farther afield, provide the basis for this sequence. Documented

Mississippian phases include Jarrett (ca. A.D. 1100 to1200), Beaverdam (ca. A.D. 1200 to 1300), Hollywood (ca. A.D. 1250 to 1350), Rembert (ca. A.D. 1350 to 1450) and Tugalo (ca. A.D. 1450 to 1600), with the absolute chronology supported by a lengthy series of calibrated radiocarbon dates (Rudolph and Hally 1985:462-470). The calibration used to delimit these phase ranges (Ralph et al. 1973) has been recently revised (Stuiver and Pearson 1986). Inspection of these dates, as recalibrated, indicates these intervals may need to be altered slightly, although no major shifts are evident. The Late Woodland portion of the sequence was developed by a number of investigators, again largely using materials from the Russell Reservoir (Anderson 1988a; Anderson and Schuldenrein 1985; Wood et al. 1986).

The Sequence. Late Woodland occupations in the upper Savannah River are characterized by late Swift Creek and Napier ceramics. While Swift Creek ceramics have been documented from ca. A.D. 100 to A.D. 750 in the Georgia area, enough work has been done to differentiate earlier from later assemblages within this series (Kelly and Smith 1975; Rudolph 1985, 1986; Wood et al. 1986:339). Late Swift Creek components in the upper Savannah River date from ca. A.D. 500 to 750, and may occur slightly earlier. Some overlap of these Swift Creek materials with Cartersville and Connestee simple stamped assemblages is indicated, although the relationship of these series is poorly understood (see discussion below).

Swift Creek ceramics, originally reported from the type site near Macon (Kelly and Smith 1975), are characterized by a wide range of complicated stamped design motifs, and are common in southwest Georgia and on the Florida Gulf coast, where they have been dated to between A.D. 100 and 450 at sites like Mandeville (Smith 1979b). Early Swift Creek ceramics are characterized by complicated stamped designs with concentric circles, ovals, and, usually, simple curvilinear design motifs. Rims are typically notched or scalloped and tetrapods are common. The ware continues into the

Late Woodland in central and northern Georgia, well after its replacement in the Gulf Coastal region by Weeden Island types (Milanich and Fairbanks 1980; Willey 1949). Along the upper Savannah River, Swift Creek and later Napier finishes are present but not widespread, and they are extremely rare along the middle and lower Savannah (DePratter 1979; Hanson and DePratter 1985; Stoltman 1974).

Late Swift Creek ceramic assemblages, which date from ca. A.D. 500 to 750, were defined in large part through work with materials from the Swift Creek and Kolomoki sites (Kelly and Smith 1975; Sears 1956). These assemblages are characterized by an increase in the incidence of plain pottery and folded rims, a decline in the incidence of notched and scalloped rims, and more complex complicated stamped designs with some zoned stamping. A fine-lined variant of Swift Creek, called B-Complex to differentiate it from classic south and central Georgia materials, was defined by Caldwell in the Buford Reservoir on the upper Chattahoochee River (Wood et al. 1986:340-341). This material, which appears transitional between Swift Creek and Napier, appears to be a regional variant, and is most commonly found in the northern and eastern Georgia Piedmont, including within the Russell Reservoir (Rudolph 1986; Wood et al. 1986:340-341). Similar Swift Creek/Napier materials were found at the Anneewakee Creek site in northwest Georgia, where uncorrected dates of 1345±85 BP (GX-2825) [calibrated ca. AD 664; Stuiver and Pearson 1986:812, 832] and 1195±110 (GX-2826) [calibrated ca. AD 820, 845, or 855; Stuiver and Pearson 1986:812, 831] were reported (Dickens 1975:36, 38). Late Swift Creek components in the upper Savannah River date from ca. 1500 to 1150 BP (calibrated) and may occur slightly earlier. The Late Swift Creek materials were infrequently found in the Russell Reservoir and, based on excavations at Simpson's Field (38An8), were provisionally given an Anderson phase designation (Wood et al. 1986:342) although this appears premature given how little is actually known about these occupations (Anderson 1988a:247).

Later Late Woodland components (ca. A.D. 750 to 900) in the upper Savannah River are identified by the presence of Napier ceramics, originally recognized during the excavations at Macon Plateau in the 1930s. These ceramics are characterized by narrow, well-executed rectilinear complicated stamping and a typically dark gray to black color, suggesting firing in a reducing atmosphere (Caldwell 1958:44, 1957:313-314; Fairbanks 1952:288; Kelly 1938; Wauchope 1948:204, 1966:57-60). Overlap with both earlier Swift Creek and later initial Mississippian Woodstock series ceramics has been documented at a number of sites (Wauchope 1966:60-63, 437-438), suggesting the series represents terminal Woodland occupations in the area. Napier ceramics are uncommon in the vicinity of the upper Savannah River basin (Ferguson 1971:67; Garrow 1975:24; Keel 1976:221, Rudolph 1986). No formal phases have been assigned to this period in the upper Savannah River Valley.

In the upper Savannah River initial Mississippian Woodstock components (ca. A.D. 900 to 1100) are identified by the presence of Woodstock Complicated Stamped ceramics, which have been shown to be ancestral to Etowah in northwest Georgia (Sears 1958). Like the preceding Napier and Swift Creek series, Woodstock assemblages are infrequent in the upper Savannah River, and no major components have been excavated (Anderson 1988b). Sites of the succeeding Jarrett phase (A.D. 1100 to 1200), which has been documented at the Chauga, Clyde Gulley, and Tugalo sites, are characterized by Etowah Complicated Stamped (primarily variations on the nested diamond motif), check stamped, and red filmed ceramics. Complicated stamped designs are dominated by rectilinear motifs, and corncob impressions around vessel necks and shoulders and collared rims forms occur in low numbers. While corncob impressing is observed on some sites in the Coastal Plain, collared rims appear restricted to above the Fall Line.

The ensuing Beaverdam phase (A.D. 1200 to 1300) is comparable in many ways to the Savannah II phase in the middle part of the drainage (Anderson et al. 1986:38-40; Hally and Rudolph 1986:61-62; Rudolph and Hally 1985). Beaverdam phase components have been examined in some detail at the Beaverdam Creek and Rucker's Bottom sites. The incidence of Etowah Complicated Stamped declines appreciably and red filming disappears. Check stamped increases and Savannah Complicated Stamped appears, with concentric circles the most common motif. The incidence of curvilinear design motifs increases markedly, while the incidence of collared rims (with notched, fine incised, or punctated designs) and corncob impressing increases slightly. The Hollywood phase (ca. A.D. 1250 to 1350), which overlaps with the Beaverdam phase, is currently used to characterize transitional Beaverdam/Rembert phase assemblages in the upper part of the drainage (Anderson et al. 1986:40-41; Hally and Rudolph 1986:62-63). Transitional assemblages were noted at Rucker's Bottom, although the incidence of check stamping was far below that noted at Hollywood.

During the Rembert phase (A.D. 1350 to 1450) in the upper Savannah River assemblages were characterized by Lamar Complicated Stamped pottery, with both curvilinear and rectilinear motifs present (Anderson et al. 1986:41-42; Rudolph and Hally 1985:456-459). Design motifs included concentric circles, figure nines, filfot crosses, line blocks, and herringbones. Check stamping nearly disappears, while Lamar Bold Incised makes its first appearance, albeit in low incidence. Incised vessels dating to this period are characterized by simple designs formed using typically two or three broad lines. Cane punctations, rosettes, and nodes continue on vessel rims, and finger pinching appears. Rims included both folded and unfolded forms, and narrow appliqued strips appear. Rembert components have been identified at Rembert, Rucker's Bottom, and Tugalo.

Late prehistoric/protohistoric Tugalo phase (A.D. 1450 to 1600) components in the upper Savannah are characterized by Lamar Complicated Stamped and Lamar Incised pottery (Anderson et al. 1986:38-42; Duncan 1985). The complicated stamped design motifs are similar to those from the preceding Rembert phase, although the stamping is larger and more carelessly applied; the incised ware, in contrast, has more complex designs than during the preceding period, made from a larger number of narrower lines. Folded and pinched rims dominate jar assemblages, and rim fold and appliqued strip width increases over earlier periods (Rudolph 1983:90-93). Red filming again appears as a minority ware. Tugalo phase components are restricted to the extreme upper reaches of the Savannah River, where they have been identified at Chauga, Estatoe, and Tugalo. Mississippian groups present in the upper Savannah River Valley during this period may have been the ancestors of the Cherokee groups of the Lower Towns found in this area at the end of the 17th century by European explorers and traders.

No phase designation has as of yet been assigned to materials dating from A.D. 1600 to 1700 in the upper Savannah River. Materials from the Dillard Mound, on the Little Tennessee River in Rabon County, Georgia, appear to date to this period, however, and may provide the basis for eventual phase definition (Hally 11/29/1989: personal communication). Using materials from the Chauga, Estatoe, and Tugalo sites in the extreme upper reaches of the Savannah River, Hally (1986a) defined the historic Cherokee Estatoe phase (A.D. 1700 to 1750). Estatoe phase assemblages are dominated by Lamar Complicated Stamped and Lamar Incised, and simple stamped, check stamped, plain, and burnished plain ceramics (Hally 1986a:98-111). Hally's detailed summary of Estatoe phase ceramics represents a refinement and improvement over Egloff's (1967) Qualla phase, which was formulated using ceramics from these same sites, but was based on ceramics now known to span the 15th through 18th centuries.

Discussion. The cultural sequence for the period after ca. A.D. 1000 in upper Savannah River, as developed by Hally, permits the dating of most assemblages to within ca. 100-year intervals, the finest-grained temporal resolution currently available in the basin. As in other portions of the basin, however, considerable work remains to be done tying down design motifs and decorative treatments in space and time. In some cases this necessitates revising cherished assumptions. As an example, nested or cross diamond motifs, traditionally associated with Etowah components in the South Appalachian area, have recently been found to encompass a much broader temporal range. They are common during both the Jarrett and subsequent Beaverdam phase in the upper Savannah, although a decrease in incidence is evident. The nested diamond motif also continues to occur in post-Etowah period assemblages in the middle Oconee drainage (Smith 1981:183-184, 1983). At the Dyar Mound nested diamonds were reported as the most common motif throughout both the Early and Middle Mississippian Stillhouse and Duvall phases, which roughly correspond to the Etowah/Early Savannah Beaverdam and late Savannah/early Lamar Rembert phases in the Russell Reservoir area.

The position of cord marked pottery within the upper Savannah River sequence also remains largely unknown. This finish is widespread during both the Late Woodland and early Mississippian periods throughout the middle and lower portions of the drainage, but is rarely reported in the Piedmont. While Savannah Fine Cord Marked has been dated from ca. A.D. 1150 to 1300 at the mouth of the river and from ca. A.D. 800 to 1300 in the interior (DePratter 1979:111, Anderson et al. 1986:42-43), no cord marked pottery was reported among the more than 25,000 sherds recovered at the Beaverdam Mound, which was occupied from ca. A.D. 1200 to 1300. The finish did occur in low incidence at Rucker's Bottom, where it was found in Rembert phase context on the floor of Structure 2. Characterized by carefully applied, closely spaced parallel cord impressions and well smoothed interior surfaces, many of the sherds resembled Savannah Fine Cord Marked. The position of this and other finishes such as check stamping, fabric marking, and simple stamping within the local late prehistoric sequence need to be better resolved.

Knowledge about the Late Woodland in the upper Savannah River remains the subject of considerable ambiguity, even after the Russell Reservoir investigations (Anderson 1988a:245-247; Anderson and Schuldenrein 1985:338-365; Gardner

1984:48-61; Wood et al. 1986:339-343). The later Woodland–early Mississippian sequence from northern Georgia (i.e., Swift Creek–Napier–Woodstock), for example, does not work well in the upper Savannah basin for the simple reason that these types are rare. In northern Georgia late Swift Creek and Napier ceramics are considered secure indicators of Late Woodland components, and these wares have been found in the Savannah River basin, albeit in low incidence. Few sites with Swift Creek or Napier ceramics have been found in the lower part of the basin, however, and the wares are uncommon even in the Piedmont (Anderson 1988a; Ferguson 1971:67; Garrow 1975:24; Keel 1976:221-222; Wauchope 1966:436-438). While recent analyses suggest they actually occur on appreciable numbers of Piedmont sites (Rudolph 1985, 1986), a decrease in incidence is clearly evident proceeding from west to east from Georgia into South Carolina. Only one major Late Woodland component has been examined in detail in the upper Savannah basin, the Swift Creek assemblage at Simpson's Field that was dated from ca. A.D. 600 to 750. While probable Late Woodland components were found at Rucker's Bottom and Rufus Bullard sites, the associated ceramic assemblages — plain, burnished plain, simple stamped, and brushed pottery — more closely resembled supposed Middle Woodland Connestee and Cartersville materials from the surrounding region. The position of these finishes warrants examination

The northwest Georgia Woodland sequence (Caldwell 1957, 1958; Wauchope 1966), as noted previously, began with the appearance of Kellogg or Dunlap Fabric Marked ceramics around 600 B.C. and, at the same time or slightly later, a crude simple stamped pottery of the Mossy Oak or Dunlap series (Padgett 1980). After about 300 B.C. these wares were replaced by the plain, check, and simple stamped ceramics of the Cartersville series, which have been traditionally thought to extend to ca. A.D. 500, with check stamping dropping out near the end of this interval. The Cartersville series is in turn replaced by the Middle to Late Woodland Swift Creek and then the Late Woodland

Napier series. Both of these latter series were initially recognized near Macon Plateau in the late 1930s (Fairbanks 1952; Kelly 1938). The chronological, spatial, and typological relationships between the Middle Woodland Cartersville and Swift Creek ceramic series and the adaptations they represent, is poorly understood at the present in the upper part of the Savannah River Valley (Anderson 1985b:40-44). In the Appalachian Summit area of western North Carolina the plain, brushed, simple stamped, and check stamped ceramics of the Pigeon and Connestee series, which are assumed to date from between ca. 300 B.C. and A.D. 500 (Chapman and Keel 1979:160; Keel 1976:239-241), are thought to be contemporaneous with Piedmont Cartersville materials.

The boundary between the Middle and Late Woodland periods in the upper Savannah River area does not appear to have been abrupt. Initial Middle Woodland assemblages were characterized by sand and grit-tempered plain, simple stamped, fabric impressed, and check and linear check stamped pottery of the Dunlap and Deptford series. Sometime after 300 B.C. and certainly by A.D. 100 to 300 these wares were replaced by assemblages characterized by smaller temper elements and better smoothed finishes provisionally described as Cartersville. Within this local Cartersville tradition two distinct assemblages were present, the earliest characterized by plain, simple stamped, check stamped, and linear check stamped finishes. These were replaced by assemblages characterized by plain, simple stamped, and brushed finishes that resemble Keel's (1976:247-255) Connestee series in some respects. A replacement of check and simple stamped ceramics by simple stamped ceramics has been documented at several locations in north Georgia, including at Cane Island (Wood 1981:29), Booger Bottom (Caldwell et al. 1952:320, 326), in the Russell Reservoir (Anderson 1988a) and, apparently, at Two Run Creek (Wauchope 1966:226). The dating of Cartersville assemblages in the upper Savannah River area is currently poorly documented, although ranges of from ca. 300 B.C. to A.D. 300 for the earlier plain, check/linear check, and simple stamped material, and from ca. A.D. 300 to A.D. 600 to 1000 for the later plain, simple stamped, and brushed material have been suggested (Anderson 1985b, 1988a).

In recent years it has become evident that the later Woodland over much of western North Carolina and the Piedmont South Carolina and eastern Georgia is characterized by rather undistinguished assemblages of plain, cordmarked, fabric impressed, and simple stamped wares which have traditionally been assigned to much earlier periods (Anderson 1982, 1985b; Trinkley 1980, 1983a). In the Piedmont, for example, Connestee and Cartersville-like plain, brushed, and simple stamped assemblages have been dated to between A.D. 400 and 800 in both western North Carolina and northern Georgia (Keel 1976; Manning 1982; Anderson and Schuldenrein 1985:340-347; Anderson 1985b:42-44). Eight radiocarbon dates for plain and simple stamped ceramics from the Russell Reservoir were late Middle Woodland to early Mississippian in age (Anderson and Joseph 1988: Appendix I). Six of these dates, ranging from ca. A.D. 400 to 1250 (calibrated), came from features producing plain, simple stamped, and brushed ceramics at Rucker's Bottom, with most appreciably later than earlier estimates for these finishes, which run to no later than ca. A.D. 500 to 600 (Chapman and Keel 1979:160; Manning 1982:31-35).

A Late Woodland/Early Mississippian simple stamped ware, the Santee series, has been documented from the Coastal Plain of South Carolina (Anderson 1982:308), and similarly late dates have been cautiously advanced for the end of the Connestee series in the Appalachian Summit (Keel 1976:225). While the Connestee series has been traditionally dated much earlier, from ca. A.D. 200 to 600, 18 of the 27 radiocarbon dates attributed to the period postdate A.D. 600 (Keel 1976:Table 32; Purrington 1983:142). Given this evidence, the existence of a Late Woodland horizon characterized by plain, simple stamped, and brushed finishes traditionally subsumed within the Cartersville and Connestee series, and contemporaneous with Swift Creek and Napier assemblages, is plausible in the upper Savannah River Valley.

The relationship between the seemingly contemporaneous Swift Creek and Cartersville/Connestee assemblages found in the upper Savannah River will need to be resolved for an effective local late prehistoric chronology to emerge. The absence of Cartersville ceramics in the Swift Creek features at Simpson's Field, and the low incidence of Swift Creek ceramics in Late Woodland contexts at Rucker's Bottom and Rufus Bullard, suggests that temporal or cultural differences of some kind existed between the makers of these wares. A cultural rather than a temporal difference appears the most likely, since the contemporaneity of Swift Creek and Cartersville or related ceramics has been noted at a number of sites in the general region (Chapman and Keel 1979:157; Kelly 1979:2; Kelly and Smith 1975:48; Manning 1982:31). The nature of this interaction remains unknown, however. The regional distribution of these wares may reflect the occurrence of differing groups or cultural entities. In this view, the assemblages found in the upper Savannah River area may represent an overlap in the annual ranges or placement of settlements by the Swift Creek populations living predominantly in central and southwest Georgia, and the makers of Cartersville and Connestee ceramics living predominantly in the eastern Georgia/South Carolina/North Carolina Piedmont and Appalachian Summit area. Alternatively, the Swift Creek wares found in the northeast Georgia Piedmont may be special "ceremonial" or trade vessels used by local populations making less elaborate ceramics. Given their occurrence in general feature fill at sites like Simpson's Field, however, this latter explanation appears unlikely

The infrequent occurrence of Swift Creek and Napier ceramics from the Savannah River east suggests that either the region was sparsely populated during the Middle/Late Woodland or that other wares were in use. The assumption here is that other wares, characterized by plain, simple stamped, and brushed finishes were in use. Advocating depopulation based on the absence of diagnostics found in other areas can only have merit if it can can be convincingly shown that no contemporaneous assemblages were present. An alternative explanation, that later Woodland sites characterized by Swift Creek and Napier ceramics are common but are archaeologically invisible because of extensive historic period sedimentation in floodplain areas, does not appear to be borne out. Few Late Woodland artifacts were found in the floodplain testing programs excavated in the Russell Reservoir (Gardner et al. 1983; Thompson and Gardner 1983).

Conclusions

The ceramic sequences presented in the preceding pages have received empirical support from a series of stratigraphic excavations undertaken in various parts of the Savannah River basin. These sequences were used to sort the late prehistoric site assemblages from the valley examined in the present study. Although the broad outline of the late prehistoric ceramic sequence in the Savannah basin may be said to be fairly well known, there is room for considerable refinement. Determining the precise periods of occurrence for specific surface finishes, design motifs, and rim treatments is particularly critical, given the temporal utility these attributes have demonstrated. Care should be taken to properly identify the design motifs or other attributes advanced here to date assemblages, and the sequences themselves should not be employed too far afield.

CHAPTER VI.

EXPLORING THE CAUSES OF CHIEFLY CYCLING IN THE SAVANNAH RIVER VALLEY (I): BASIN-WIDE EVENTS

Introduction

In this chapter political developments during the Mississippian period in the Savannah River basin are summarized. A broad overview of events in the basin is first developed and presented, making use of archaeological evidence from excavation and survey activity. Both simple and complex chiefdoms emerged and evolved within the basin over the course of the Mississippian period, and their historical trajectories are known within fairly precise limits. Explanations for the organizational changes that are observed in these chiefdoms are advanced and evaluated. Environmental variables such as regional physiographic structure and climate are examined here, while in the next chapter the focus turns to social and political matters, first at particular sites and then over the regional landscape. The causes of political change that are examined follow from the propositions about cycling in chiefdoms first presented in Chapter II.

Mississippian Occupation and Political Change in the Savannah River Valley

Evidence from the Mound Centers

Over 500 Mississippian sites, including 15 Mississippian mound centers, have been documented in the Savannah River Valley. Occupational histories at most of the centers are at least generally known, since excavation or surface data are available from all but Mason's Plantation. As recounted in Chapter V, excavation activity has occurred at 12 of the valley's 15 mound centers, including at Haven Home, Irene, Hudson's Ferry, Red Lake, Hollywood, Fortson, Rembert, Beaverdam, Tugalo, Chauga, Estatoe, and I. C. Few. At several of these sites where extensive excavations have been conducted, furthermore, periods of occupation and construction are known within fairly tight intervals. The archaeological record from the basin thus offers a good empirical foundation from which to examine political change over time. This changing record is examined, to the limits of our current chronology, and used to advance inferences about political conditions in the basin.

No ceremonial centers are known from within the Savannah River Valley at the end of the Late Woodland period, around A.D. 1000 (Figure 79). While low sand burial mounds, the focus of collective, largely egalitarian mortuary behavior, were probably in use in the lower part of the drainage, like those documented during the preceding Deptford and Wilmington phases (Caldwell 1952; Thomas and Larsen 1979; Brooks et al. 1982), none are currently documented. After ca. A.D. 1100, however, collective interment in low mounds is documented at both Haven Home and Irene. Some of the burials in these mounds show evidence for preferential mortuary treatment, indicating that the emergence of social differentiation was occurring about this time. In the upper part of the drainage, the presence of Woodstock ceramics at both Chauga and Rembert suggests that these centers began about this time, although only at Chauga, where Woodstock barred oval motifs were common in the premound and initial mound stage deposits, is there an indication of mound construction (Kelly and Neitzel 1961:37). The founding of these centers appears to date to between A.D. 1000 and 1100, and probably toward the end of this span, coeval with early Mississippian developments in northwest Georgia at Etowah and Wilbanks.

Between A.D. 1100 to 1150 at least four Mississippian centers emerged in the

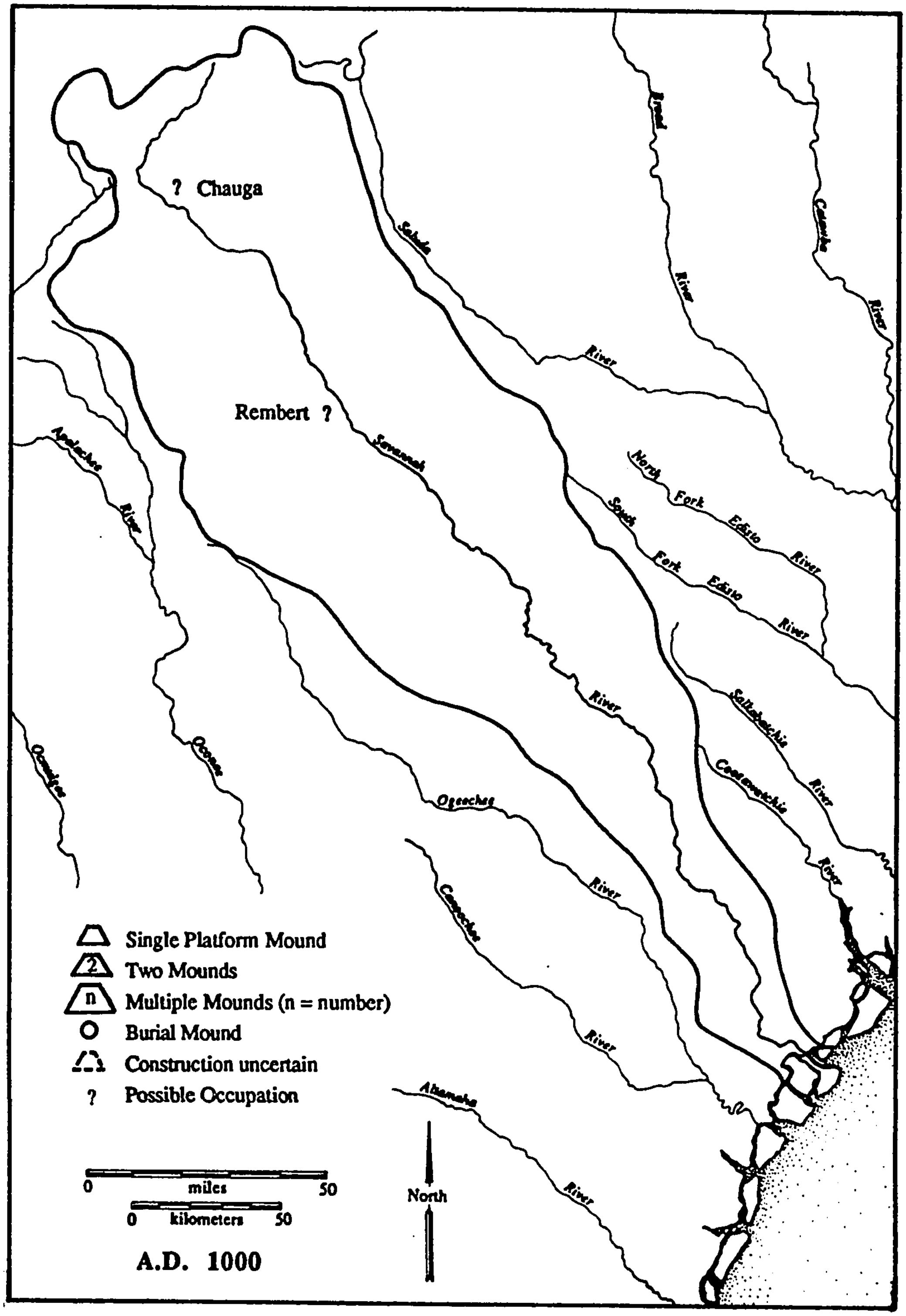


Figure 79. Mississippian Centers in the Savannah River Valley at A.D. 1000.

basin, two in the upper reaches and two near the mouth (Figure 80). Platform mound construction began at Tugalo, and either began or continued at Chauga, small single mound centers located within a few km of each other in the extreme northern part of the valley. The Jarrett phase assemblages at these sites are dominated by Etowah motifs, and some form of interaction with groups to the west along the Chattahoochee and beyond is indicated. These are the only platform mound centers known in the valley from this early period, although the presence of Etowah (Jarrett phase) ceramics in collections obtained from the Rembert Mounds prior to their destruction suggests construction may have begun there during this period as well. At the opposite end of the basin, near the river mouth, the Haven Home burial mound was constructed at this time, and perhaps only slightly later the low sand burial mound at Irene. A change from largely egalitarian and collective to individual burial treatment, with some individuals clearly receiving preferential treatment, is evident at these sites, particularly at Haven Home, suggesting the emergence of social ranking.

After A.D. 1150 Mississippian centers emerged throughout the basin. By A.D. 1200 at least seven and possibly as many as ten centers were in use, in three and possibly four clusters located about 50 km apart in the central Piedmont, upper Coastal Plain, lower Coastal Plain, and near the river mouth (Figure 81). Curiously, the centers in the northern part of the basin, at Chauga and Tugalo, were abandoned and remained unoccupied for over a century. This abandonment may reflect the southward movement of the populations of these centers down the basin into its broader and presumably more fertile lower reaches. This movement may be related, in part, to cropping strategies, specifically the clearing, use, and abandonment of fields by these first intensive agriculturalists. Alternatively, the position of the centers in the upper basin may have become somewhat untenable at this time, lying as they did between the chiefdoms of the central Piedmont (see Chapter VII) and those of the upper Chattahoochee. Four centers

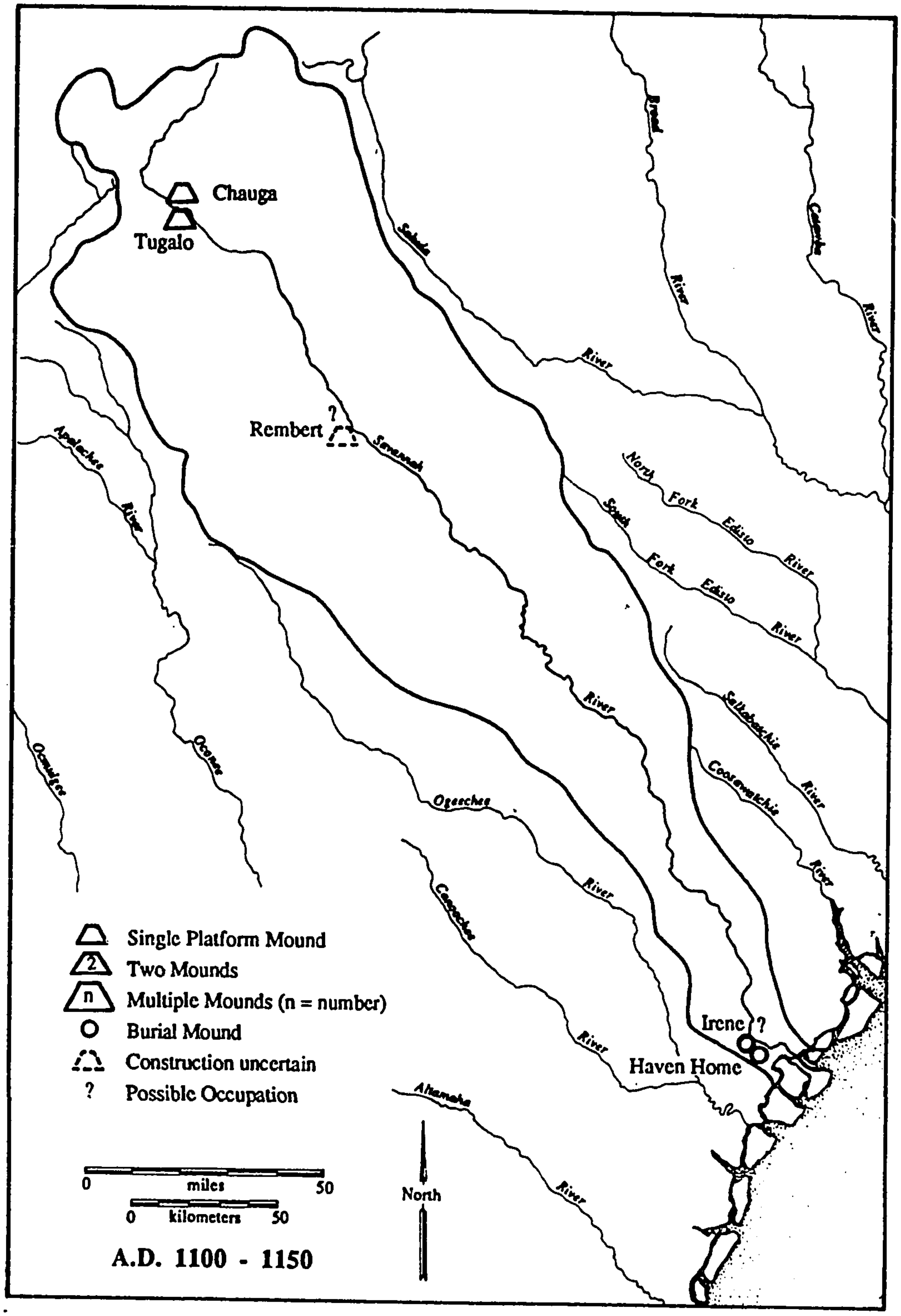


Figure 80. Mississippian Centers in the Savannah River Valley at A.D. 1100-1150.

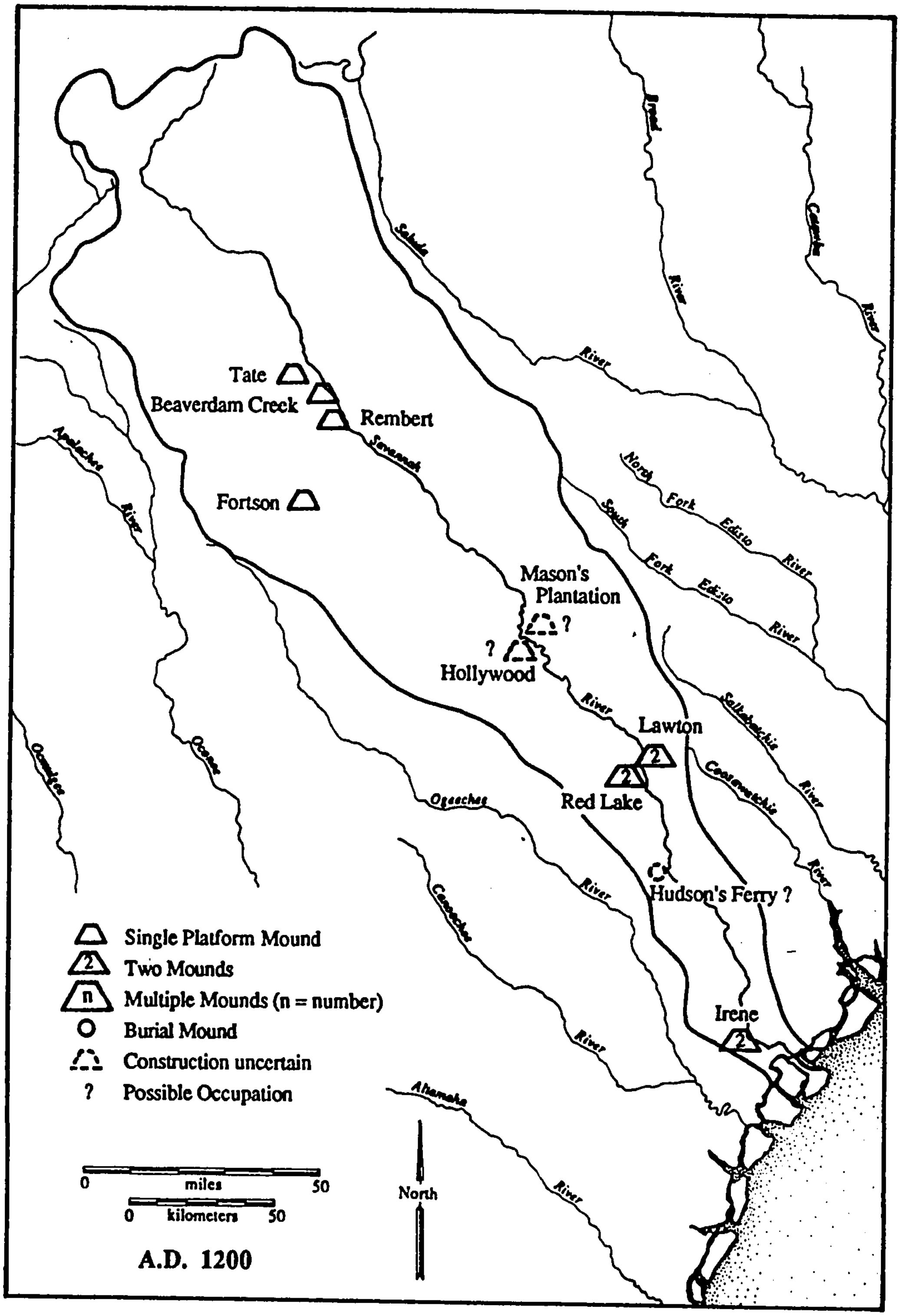


Figure 81. Mississippian Centers in the Savannah River Valley at A.D. 1200.

appeared in the central Piedmont about A.D. 1200, at Beaverdam Creek, Tate, Fortson, and Rembert, the first three of which were single mound centers. Whether Rembert was a single mound center at this time as well, or was already on the way to becoming the dominant multi-mound center it would become a century or so later, is unknown. At least four simple chiefdoms, or possibly one complex chiefdom, were thus present in the central Piedmont by A.D. 1200.

In the inner Coastal Plain occupation of the Hollywood and Mason's Plantation centers may have begun at this time, although this is uncertain. Farther south the Lawton and Red Lake centers appear, and the nearby Hudson's Ferry burial mound was built either at this time or slightly later. Finally, at the mouth of the river a major period of construction was initiated at Irene. Irene, Lawton, and Red Lake all apparently had two mounds (although at Red Lake the second mound, if present, was quite small), suggesting that these chiefdoms may have been somewhat more complex than those farther up river. Three and possibly four groups of chiefdoms thus appear to have been present in the basin at A.D. 1200, with complex chiefdoms (possibly) emerging in one or more areas.

The situation was essentially the same fifty years later, at A.D. 1250, although by this time there is no doubt that four clusters of mounds were present in the valley (Figure 82). In the central Piedmont Beaverdam Creek, Tate, and Fortson remain occupied (or at least there is no evidence for their abandonment at this time), as does the Rembert site, which may be beginning to emerge as a paramount center. In the inner Coastal Plain the Hollywood site is occupied and elaborate SCC interments were placed in the mound, suggesting the elites at that center were well connected. The Mason's Plantation site across the river was also probably occupied by this time as well, given the materials observed in collections from the river below the site. Like Rembert, Mason's Plantation may also be emerging as a paramount center. Lower in the drainage the Lawton and Red

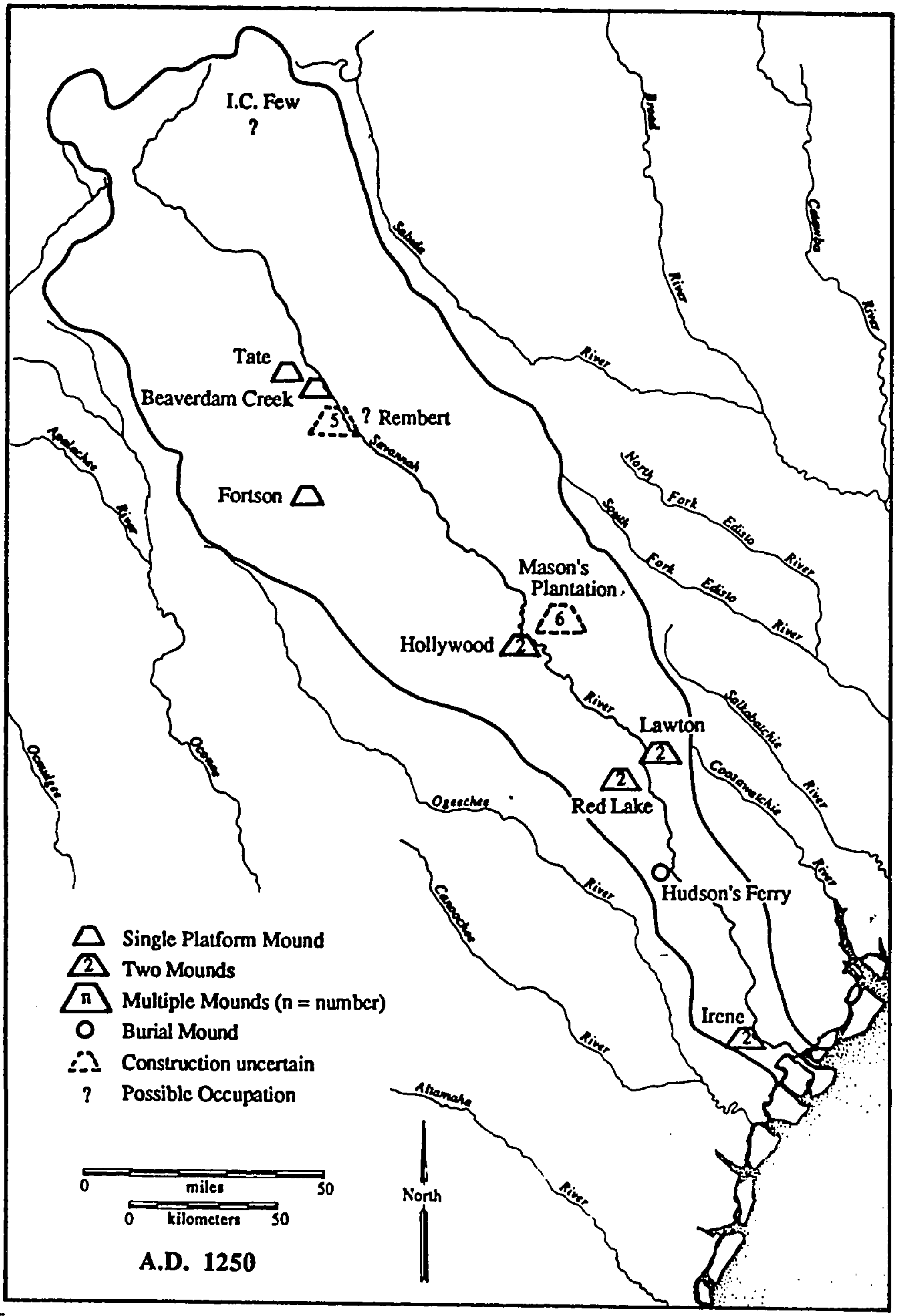


Figure 82. Mississippian Centers in the Savannah River Valley at A.D. 1250.

Lake sites continue to be occupied, and this is the probable period when the Hudson's Ferry mound was in use. Whether Red Lake and Lawton were paired sites within a larger chiefdom or were discrete chiefdoms is unknown. At the mouth of the river the upper stages on the platform mound at Irene were under construction, and some SCC iconography is evident at this site as well. While a pattern of simple chiefdoms is indicated throughout the valley, more complex political entities appear to have been forming.

Between A.D. 1250 and 1350 the political situation changed dramatically in the Savannah River Valley, although unfortunately our chronological controls are not sufficiently refined to delimit precisely when and in what order events occurred. At the beginning of this period small centers were scattered throughout the basin, while by the end of it, around A.D. 1350, most of these were gone, and two major multi-mound centers had emerged, at Rembert and Mason's Plantation (Figure 83). In the central Piedmont occupation apparently ceased at Beaverdam Creek, Fortson, and Tate, and the Rembert site had emerged as a major center, with at least five mounds present. The abandonment of the smaller single mound centers appears to have taken place by or shortly after A.D. 1300, about the same time that Rembert rose to preeminence. Evidence for elite impoverishment was observed at Beaverdam Creek, suggesting power and prestige was being subsumed by elites at the larger center.

In the inner coastal plain a second multi-mound center emerged at this time, at Mason's Plantation. The nearby Hollywood site was abandoned, with evidence for an impoverishment of local elites, sometime between ca. A.D. 1300 and 1350, although the site saw some use later, during the early Irene period, as a burial mound. In the lower Coastal Plain both the Lawton and Red Lake mound centers were abandoned during this same period, and at the mouth of the river a century or more of continuous mound construction came to an end at Irene. The Irene site apparently fell into disuse, prior to

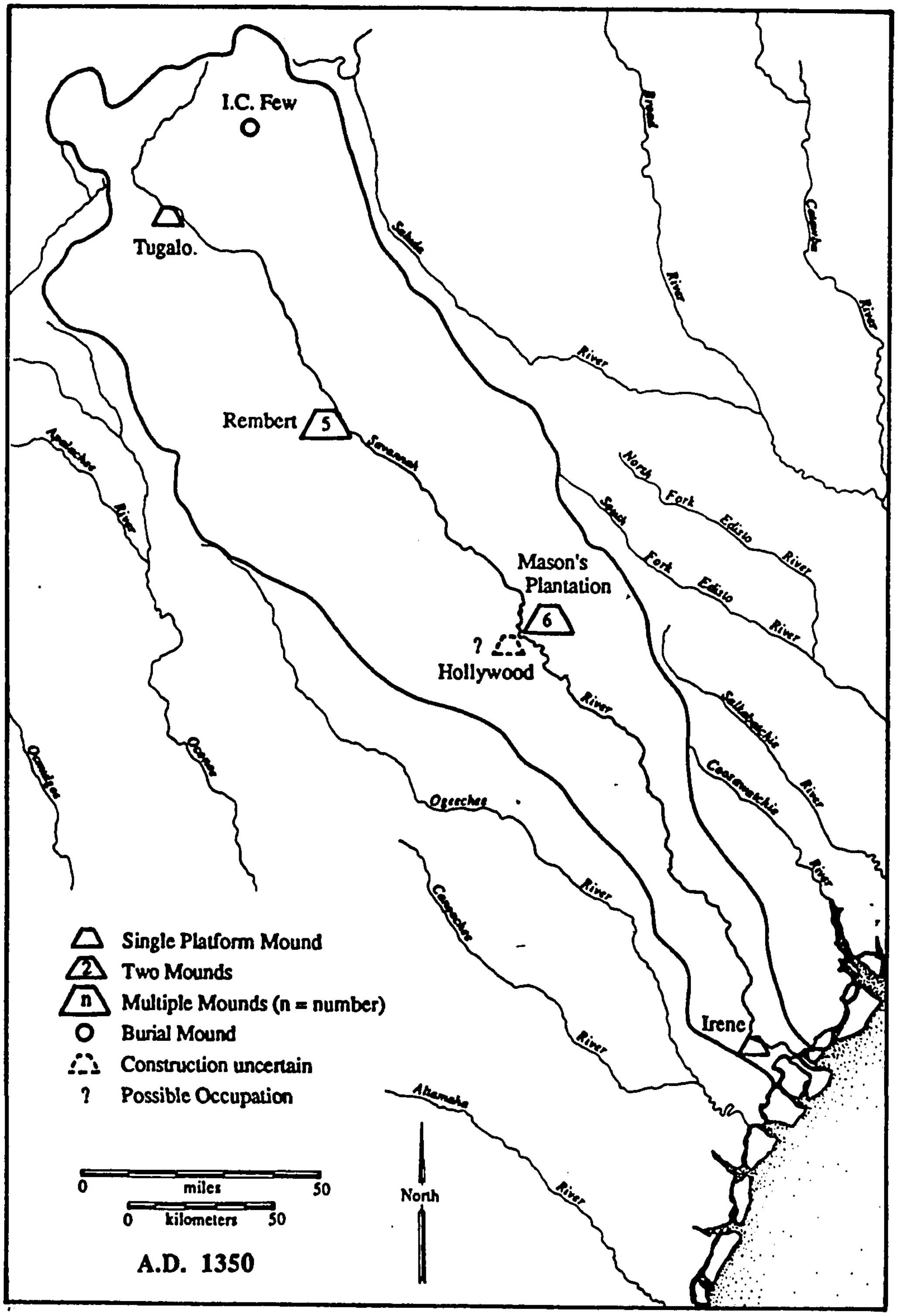


Figure 83. Mississippian Centers in the Savannah River Valley at A.D. 1350.

undergoing a dramatic if comparatively brief renewal in the ensuing Irene I period. For the first time in a century and a half a Mississippian center reappears in the upper part of the basin, at the Tugalo site, and the I. C. Few burial mound may have been in use at this time as well. While Mississippian populations in the extreme upper and lower reaches of the basin thus may have had some degree of local autonomy, most of the upper and lower portions of the basin appear to have been dominated by polities based at Rembert and Mason's Plantation, respectively. The replacement of small localized centers, and probably a series of simple chiefdoms, by large multi-mound centers, and two complex chiefdoms, apparently took place in the basin in the years around A.D. 1300.

Within a century the political landscape had again changed. By ca. A.D. 1400 only two platform mound centers were in use in the entire basin, at Tugalo and Rembert (Figure 84). In the upper part of the basin fairly simple chiefdoms are inferred. Occupation continued at Tugalo, which remained a small, single mound center, and this appears to be the period when the I. C. Few burial mound was in use. In the central Piedmont, the Rembert Mound center reached its greatest extent, and appears to have been the center of a complex chiefdom. Rembert was apparently the only occupied multi-mound center in the basin at this time. Mound construction had apparently ceased at Mason's Plantation, although our dating of the demise of this center is uncertain. Only sporadic use of the Hollywood site across the river is indicated, where urn and less commonly other types of burials were placed in the mounds by local Irene groups.

At the mouth of the Savannah the Irene site was revitalized between ca. A.D. 1350 and 1400, possibly the result of the abandonment of the Mason's Plantation center farther up river, and a re-establishment of local autonomy. Within a comparatively brief period, probably on the order of a half a century or so, the former platform mound was converted to a burial mound and doubled in size, a rotunda and mortuary were built and then modified, and an extensive series of fencelines were erected. By A.D. 1400 the

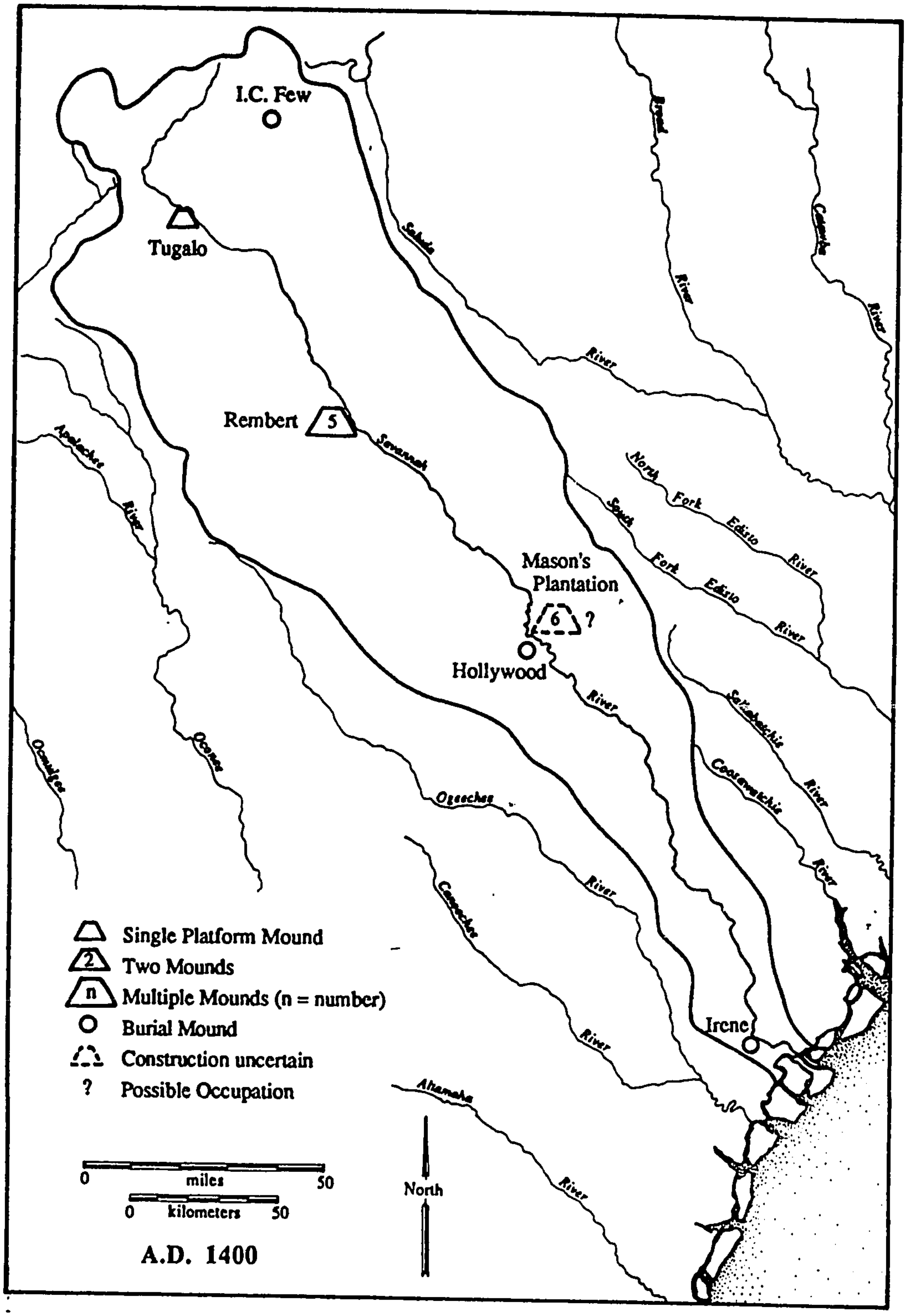


Figure 84. Mississippian Centers in the Savannah River Valley at A.D. 1400.

Irene site thus may have been dominating events in the lower basin, and have been a focus for ceremonial life, while the Rembert Mound center played a similar role in the upper basin. While a traditional hierarchical chiefdom organizational structure may have been present in the Piedmont, where use of platform mounds continues, below the Fall Line less well-organized and more egalitarian decision-making structures are indicated. This dichotomy is epitomized by the continuation of platform mound use at Rembert and the construction of a rotunda, or council house, and then its enlargement, at Irene. Whether these centers were antagonistic to one another remains unknown, although the presence of fortifications and occasional trauma on burials at Irene suggest a period of increased militarism.

By A.D. 1450 both Rembert and Irene were abandoned, and all of the centers in the basin from the central Piedmont to the river mouth lay empty and unoccupied (Figure 85). None of these sites apparently saw subsequent reuse, even though a number of historic Indian groups moved into the area in the late 17th century. Only the area around the headwaters appears to have escaped, and may have even benefitted by, whatever brought about the abandonment of the centers in the middle and lower portions of the valley. The Tugalo site in the extreme upper reaches of the basin continued to be occupied, however, and two new centers emerged nearby, at Chauga, which was reoccupied following a hiatus of about two centuries, and at Estatoe, where mound construction began for the first time. All three of these sites, which were small single mound centers, continued to be occupied into the 18th century, although mound construction apparently stopped at all of them sometime towards the end of the Tugalo phase, around A.D. 1600 (a pattern observed throughout the region, see Smith 1987).

Evidence from General Survey Data

The Mississippian political history writ large at the mound centers is supported by

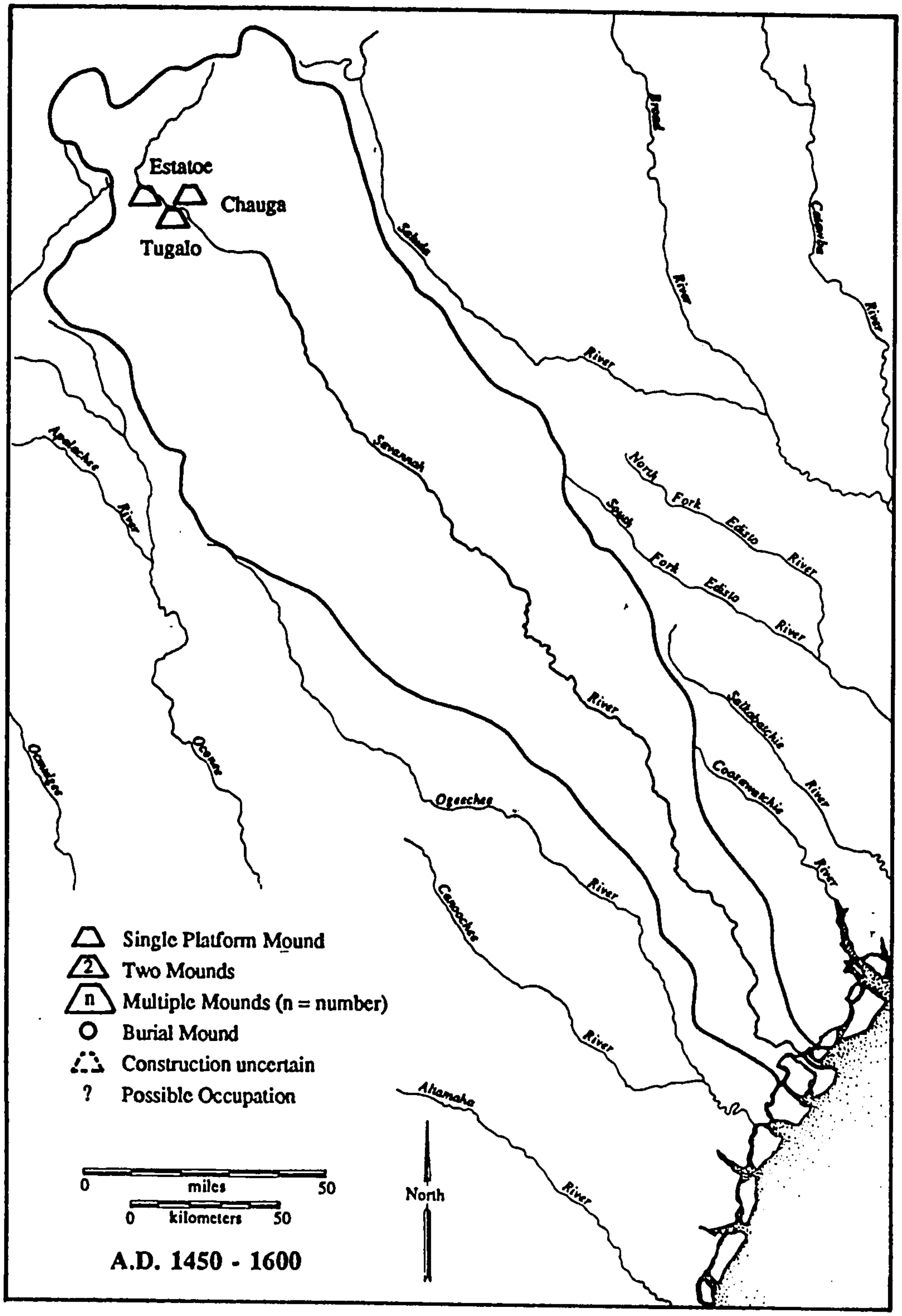


Figure 85. Mississippian Centers in the Savannah River Valley at A.D. 1450.

the more prosaic general survey data available from the Savannah River Basin. As documented in Chapter V, 3947 sites with prehistoric components have been found so far during survey projects in the basin, 553 or 14.0% of which had Mississippian components (Table 3). Surface collections exist from many of these sites and, given the detailed cultural sequence and chronology available for the later prehistoric and protohistoric period, it has been possible to date many of these assemblages fairly precisely, using ceramic design motifs, rim treatments, and other sorting criteria. As part of the present research, artifact collections from 2081 of these sites were examined, in an effort to resolve periods of occupation. Artifactual data from Mississippian components identified during this analysis are presented in Appendix D. Where surface collections were not available for analysis, published descriptions were used to resolve periods of occupation where these were detailed enough to make a precise temporal assignment.

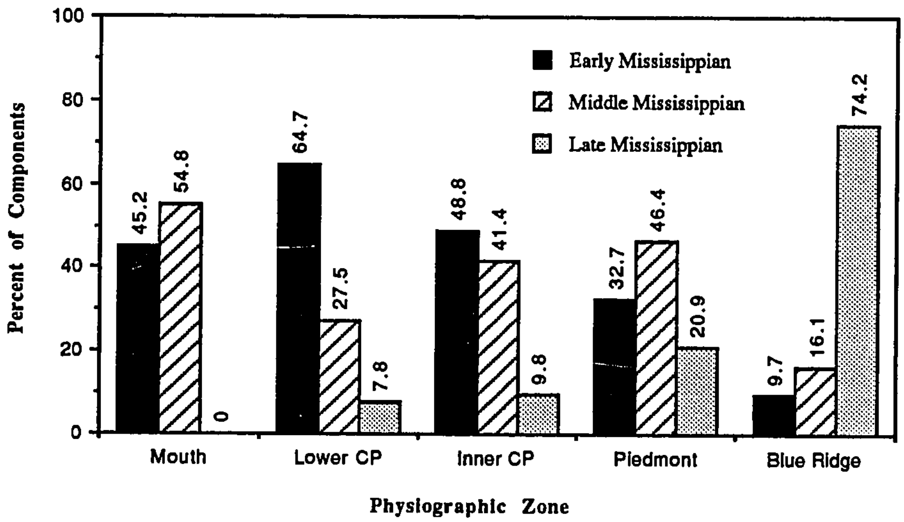
The components identified in the analysis were placed into one of three major subperiods, corresponding to the Early, Middle, and Late Mississippian locally, and by location within the drainage (Table 11, Figure 86). Subperiods rather than specific phase assignments were used to facilitate the comparison of contemporaneous assemblages in various parts of the basin. In all, 305 Early, Middle, and Late Mississippian components were identified on the 553 sites. Another 323 components, classified as Unknown Mississippian, had assemblages that could not be accurately placed within a specific subperiod, or else were from sites where the collections were not available for analysis and where the published descriptions were ambiguous. Unidentifiable components were most common on sites with small ceramic assemblages or where artifacts such as Mississippian triangular points or otherwise nondiagnostic sherds were all that were present in the collections. The total number of identifiable and unidentifiable Mississippian components (N=628) is larger than the number of Mississippian sites, it should be noted, because some sites had more than one component present.

Table 11. Mississippian Components in the Savannah River Valley By Period and Major Physiographic Zone

Project Number	Locality (Proceeding from south to north)	Area Examined (ha)	# of Prehistoric Sites		Total # of Sites	Number of Mississippian Sites	Unknown Mississippian Components	Early Mississippian Components	Middle Mississippian Components	Late Mississippian Components
1 - 11	Mouth of the Drainage	1419.4 (0.69%)	219 (5.55%)	/	313 (6.08%)	29 (5.24%)	2 (0.62%)	14 (11.11%)	17 (14.05%)	0 (0.00%)
12 - 22	Lower Coastal Plain	12876.3 (6.26%)	412 (10.44%)	/	462 (8.97%)	79 (14.29%)	36 (11.15%)	33 (26.19%)	14 (11.57%)	4 (6.90%)
23 - 43	Inner Coastal Plain/Fall Line	54206.4 (26.33%)	1139 (28.86%)	/	1299 (25.22%)	147 (26.58%)	115 (35.60%)	40 (31.75%)	34 (28.10%)	8 (13.79%)
44 -.71	Lower Piedmont	89737.5 (43.60%)	1869 (47.35%)	/	2703 (52.49%)	265 (47.92%)	160 (49.54%)	36 (28.57%)	51 (42.15%)	23 (39.66%)
72 - 99	Upper Piedmont/Blue Ridge	47600.7 (23.13%)	308 (7.80%)	/	373 (7.24%)	33 (5.97%)	10 (3.10%)	3 (2.38%)	5 (4.13%)	23 (39.66%)
	GRAND TOTALS	205840 (100.00%)	3947 (100.00%)		5150 (100.00%)	553 (100.00%)	323 (100.00%)	126 (100.00%)	121 (100.00%)	58 (100.00%)

27,450 square kilometers = size of Savannah River basin
2058.4 square km, or 7.5% of basin has been surveyed at any level of intensity
702.22 square km, or 2.6% of the basin intensively surveyed

Mississippian Components, by Period and Subarea, in the Savannah River Valley: Percent of Total Components per Subarea



Mississippian Components, by Period and Subarea, in the Savannah River Valley Number of Components per Period per Subarea

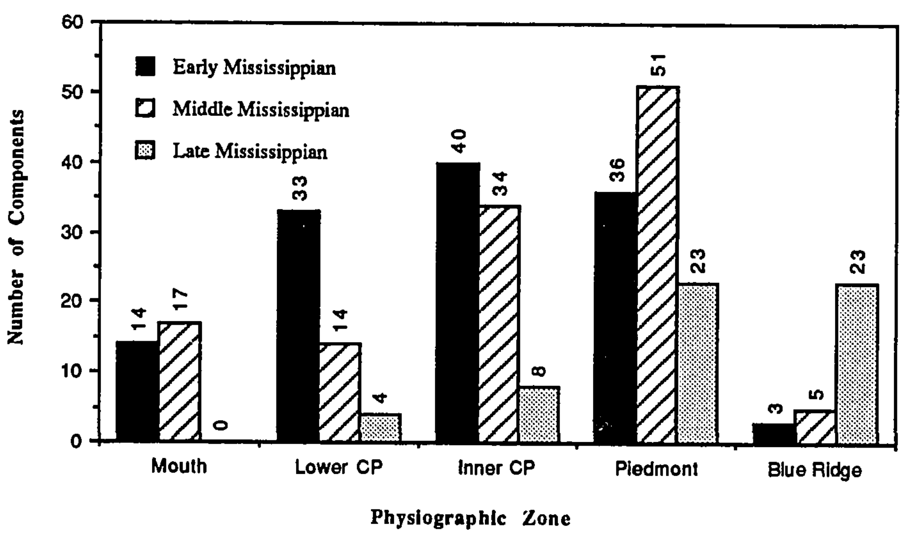


Figure 86. Mississippian Components in the Savannah River Valley: Summary Data.

Early Mississippian (ca. A.D. 1000 to 1250) components, which encompassed assemblages attributable to the Savannah II/III, Savannah II, Woodstock, Jarrett, and Beaverdam phases, proceeding from the mouth to the headwaters, were fairly common (N=126; 41.3% of all identifiable components). The greatest number of Early Mississippian sites was observed in the central part of the drainage, in the inner Coastal Plain/Fall Line (N=40) and Lower Piedmont (N=36) subareas. The greatest proportional occurrence of Early Mississippian components, however, occurred in the lower part of the drainage, where they account for 48.8%, 64.7% and 45.2% of all identifiable components in each area, respectively, proceeding from the inner Coastal Plain to the mouth (Figure 86). The observed site distributions, while assumed to reflect population distributions, may also be linked, in part, to cropping practices and to general soil conditions in different parts of the basin. In areas where soils are poorly suited to agriculture, for example, as may be the case in the Coastal Plain (see below), movement of fields and possibly associated habitation sites may have been more frequent.

Mississippian assemblages are rare everywhere in the basin until after A.D. 1100. Woodstock complicated stamped ceramics were noted on less than a dozen sites, and only at Chauga were more than one or a few sherds present. The first Mississippian assemblages in any quantity belong to the Jarrett phase, and resemble Etowah II/III materials, suggesting possible influence from the northwest Georgia area. Characteristic Etowah one- and two-bar nested diamond motifs occur throughout the basin. Surprisingly, only one Early Mississippian component was observed in the survey collections from the extreme upper reaches of the drainage, even though the Chauga and Tugalo centers were occupied at this time. Comparatively few prehistoric sites have been recorded in this part of the basin (N=308), however, and the sample may be unrepresentative. If this low density of Early Mississippian sites holds up, it may indicate that settlement was minimal away from these centers. Elsewhere in the drainage, where sample sizes are greater, Early Mississippian sites are found in some numbers. Details about site size and function remain elusive for most of these components, although the existence of both hamlets and small villages has been documented in the Russell Reservoir area.

Middle Mississippian (ca. A.D. 1250 to 1450) components, which encompass Irene I, Hollywood, Silver Bluff, and Rembert phase assemblages were also common in the basin (N=121; 39.7% of all identifiable components). Although they occurred with greatest frequency in the lower Piedmont, they were fairly common everywhere with the exception of in the headwaters. The low number of components in the headwaters is a continuation of the pattern noted during the Early Mississippian period, and suggests occupation was fairly minimal. Only one center, Tugalo, was occupied throughout most of the Middle Mississippian in this part of the basin, and it was not until the very end of the period or early in the succeeding period that the Chauga and Estatoe were occupied.

Middle Mississippian components occur with greatest frequency in the basin in the area around the Rembert site, one of the two major mound centers that emerged in the valley during this period. Intensive settlement around Rembert is indicated by the survey data, and the excavations in the Russell Reservoir have shown that at least some of these sites were small villages or hamlets. Very little is known about settlement around Mason's Plantation, the other major mound group in the valley at this time. That site lies in a ca. 20 km section of the upper Coastal Plain that has seen little survey activity, however (Figure 24). Given the history of occupation at the nearby Hollywood site, and the lack of evidence for later components in the surrounding area, it appears that population declined markedly in this part of the drainage following the Hollywood phase (ca. A.D. 1200 to 1300). This is also indicated in the lower Coastal Plain, where Middle Mississippian components (N=14) occur with less than half the frequency of Early Mississippian components (N=33). The decline in the number of sites in the lower

Coastal Plain is probably related to the abandonment of the Lawton and Red Lake centers. No comparable decline was observed at the mouth of the river, however, where a slight increase in the number of sites is noted, although it was during this period that the occupation at Irene was revitalized.

Late Mississippian (ca. A.D. 1450 to 1750) components, which include Irene II, Yamassee, Tugalo, and Estatoe phase assemblages, were appreciably less common in the basin than components dating to the earlier subperiods (N=58; 19.0% of all identifiable components). Late Mississippian Components were infrequent everywhere except in the upper reaches of the valley, above the Fall Line, where most of the components dating to this period were found (N=46; 79.3%). An increase in the frequency and proportional occurrence of Late Mississippian components was evident in each area proceeding from the mouth to the headwaters, although the proportional occurrence of these as opposed to earlier components was still quite low everywhere but in the extreme northern part of the basin (Figure 86). That is, while Late Mississippian components become progressively more common upriver, they remained infrequent, and accounted for no more than ca. 20% of the identifiable components in any area below the headwaters. Many of the components assigned to the Late Mississippian period in these areas, furthermore, were identified on the basis of sherds exhibiting one or a few bold incised lines, artifacts that could very well date to the Middle Mississippian Irene I or Rembert phases. With a very few exceptions, almost all the unambiguous Late Mississippian assemblages found in the basin with moderate or large numbers of diagnostic artifacts occurred in the headwaters area.

No Late Mississippian components were observed at the mouth of the basin, suggesting the area was abandoned after Irene I times. The unoccupied buffer present in this area in the 16th century, between the Guale of the central Georgia coast and the Orista and related groups along the lower and central South Carolina coast, may well have formed about this time. Light use of the Lower and Inner Coastal Plain is also indicated during the Late Mississippian period, with only four and eight components found in these areas, respectively. Appreciably more Late Mississippian components were identified in the lower Piedmont. While 23 Late Mississippian components were identified in this area, most of them (N=18, 78.3%) were from the extreme western part of the basin in Oglethorpe and Banks counties, near the Oconee River (Freer 1989; Jefferies and Hally 1975), and appear to reflect early historic movement into the area (see discussion of the Oglethorpe County data below). Nowhere below the Upper Piedmont/Blue Ridge area, in fact, is there evidence for intensive occupation during the Late Mississippian period near the main channel. The low incidence of artifacts on most of these components suggests the presence of isolated hamlets or villages or temporary camps used by populations based elsewhere.

Only in the headwaters area are Late Mississippian components fairly common, accounting for 23 of the 31 identifiable components found in this locality. Most of these components are historic Cherokee in age, and probably come from hamlet or town sites like those recently documented at Chatooga and Tomassee (Schroedl and Riggs 1989; Smith et al. 1988). The survey data for the Late Mississippian period thus complement the record from the mound centers, since only Chauga, Tugalo, and Estatoe, of all the centers in the basin, were occupied during this period.

Evidence from Specific Localities

Archaeological assemblages from three intensively surveyed localities offer additional detail on events taking place during the Mississippian period in the Savannah River Valley. These localities include the Savannah River Site in the inner Coastal Plain and the Richard B. Russell Reservoir and the Oglethorpe County Clearcut project tracts in the central Piedmont (Anderson and Joseph 1988; Freer 1989; Sassaman et al. 1989). Several hundred prehistoric sites have been recorded in each area, and well-documented (and frequently extensive) collections are available from all of these sites. Encompassing as they do some of the most intensively examined terrain in the valley, the archaeological record from these localities is particularly well suited to fine-grained analyses of prehistoric settlement.

The Savannah River Site. The Savannah River Site (SRS) is a U.S. Department of Energy facility located in the inner Coastal Plain on the South Carolina side of the river (Figure 24). Encompassing 777 sq. km, the SRS locality extends for about 50 km along and up to 40 km away from the river, through upland sandhills dissected by several tributary streams. Over the past 15 years approximately 40% of the facility, much of this sample stratified by microenvironmental zone, has been intensively surveyed by archaeologists from the SCIAA, and 755 prehistoric sites have been recorded (Sassaman et al. 1989). Of these, 164 sites have yielded identifiable late Late Woodland components while Mississippian components have been found at 91 sites (Sassaman et al. 1989:254). Late Woodland sites are widespread, occurring in large number both near the Savannah River floodplain and throughout the interriverine uplands (Figure 87). A dispersed settlement strategy has been inferred, with the landscape occupied by a numerous small, household-family groups, each intensively exploiting a wide range of microenvironmental settings (Brooks and Hanson 1987; Sassaman et al. 1989:293-295). Political integration between these groups is assumed to have been minimal, as no evidence for ceremonial centers, burial areas, or even major settlements has been found.

A dramatic reduction in the number of sites is evident in the succeeding Early Mississippian period, when components are found for the most part along the larger tributaries (Figure 88). Settlement near riverine or major tributary floodplain areas is indicated, with comparatively minor use of the interriverine uplands. Because the sites found on the SRS are typically small, most are assumed to represent special activity areas, hamlets, or small villages, although unfortunately none have been examined in the

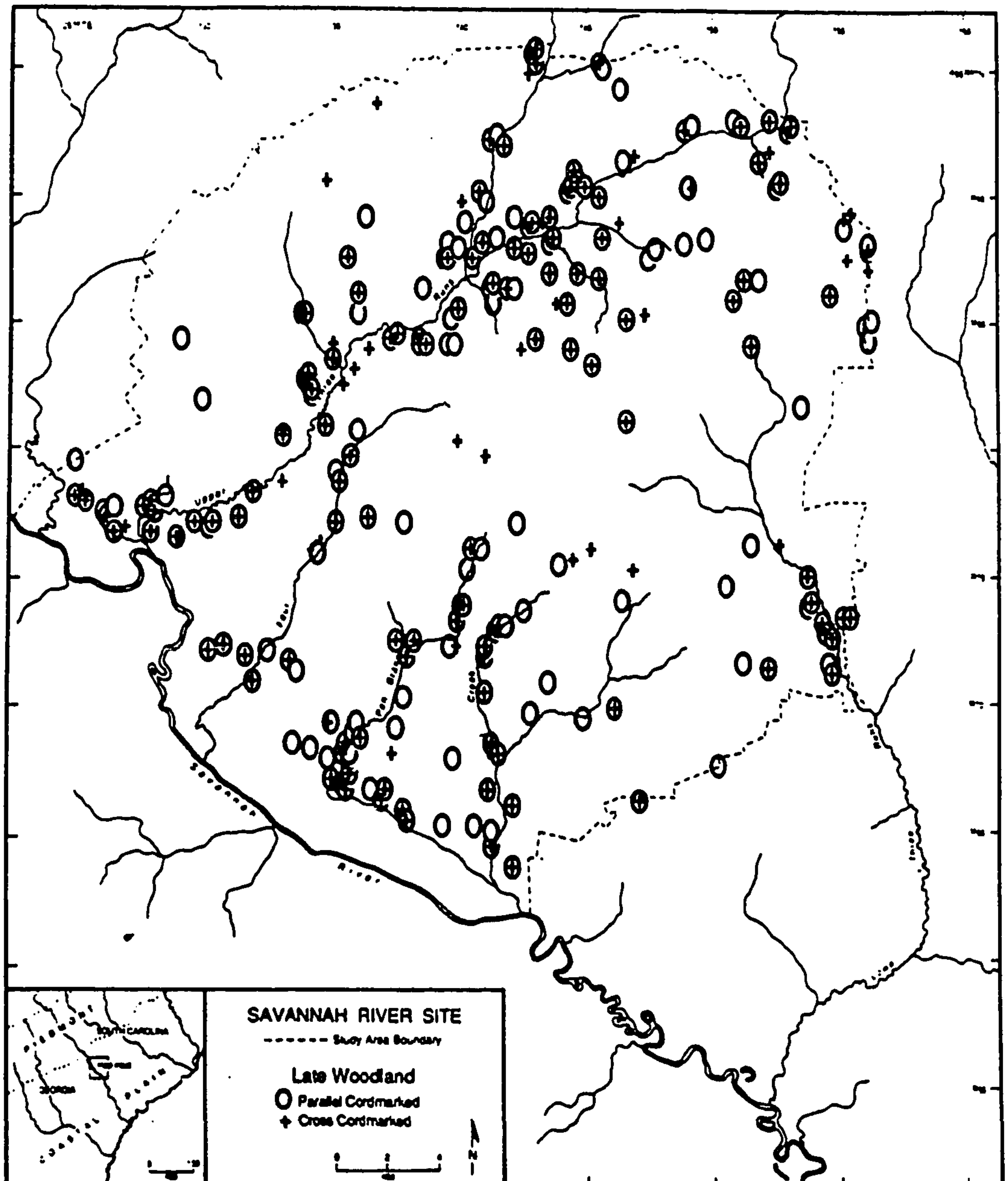


Figure 87. Late Woodland Components on the Savannah River Site.
(adapted from Sassaman et al. 1989:269)

kind of detail necessary to resolve function. The change in settlement between the Late Woodland and the Mississippian is probably linked to the adoption of intensive agriculture locally, and to the emergence of chiefdoms in the basin. Sites with ceramics, possibly representing habitation loci, tend to occur commonly on terrace settings, suggesting a settlement orientation toward arable soils and a diversity of game resources (Larson 1972; Smith 1978). Sites with small triangular Mississippian projectile points, presumably indicative of hunting activity, in contrast, tend to occur more widely over the landscape, suggesting game procurement in a wide range of settings. An appreciable proportion of the Mississippian survey assemblage (N=29 sites, 31.9%) consisted of sites with projectile points only, suggesting hunting was fairly extensive in the locality.

The distribution of Mississippian sites on the SRS seems to be linked to the location of major political centers in the basin. The SRS occupies terrain roughly midway between the major mound centers of the upper and lower Coastal Plain. The greatest number of recorded Mississippian sites on the SRS occurs in the Upper Three Runs basin some 15 to 20 km south of the Mason's Plantation and Hollywood mound groups (Figure 88). The comparatively low incidence of Mississippian ceramics elsewhere on the SRS may reflect a fall-off in settlement away from these centers, although it must also be emphasized that the streams to the south are either much smaller (i.e., Four Mile, Pen Branch, and Steel Creek) or have been only partially surveyed (i.e., Lower Three Runs). The Lawton and Red Lake mound centers to the south of the SRS are smaller than those to the north, and considerably farther away, ca. 60 km below the mouth of Upper Three Runs Creek, and 15 km below the mouth of Lower Three Runs Creek. They are thus unlikely to have exerted as much sway over populations on the SRS as the centers to the north, although once Mississippian settlement along the lower course of Lower Three Runs Creek is resolved, it will probably prove to be more closely tied to these southern centers.

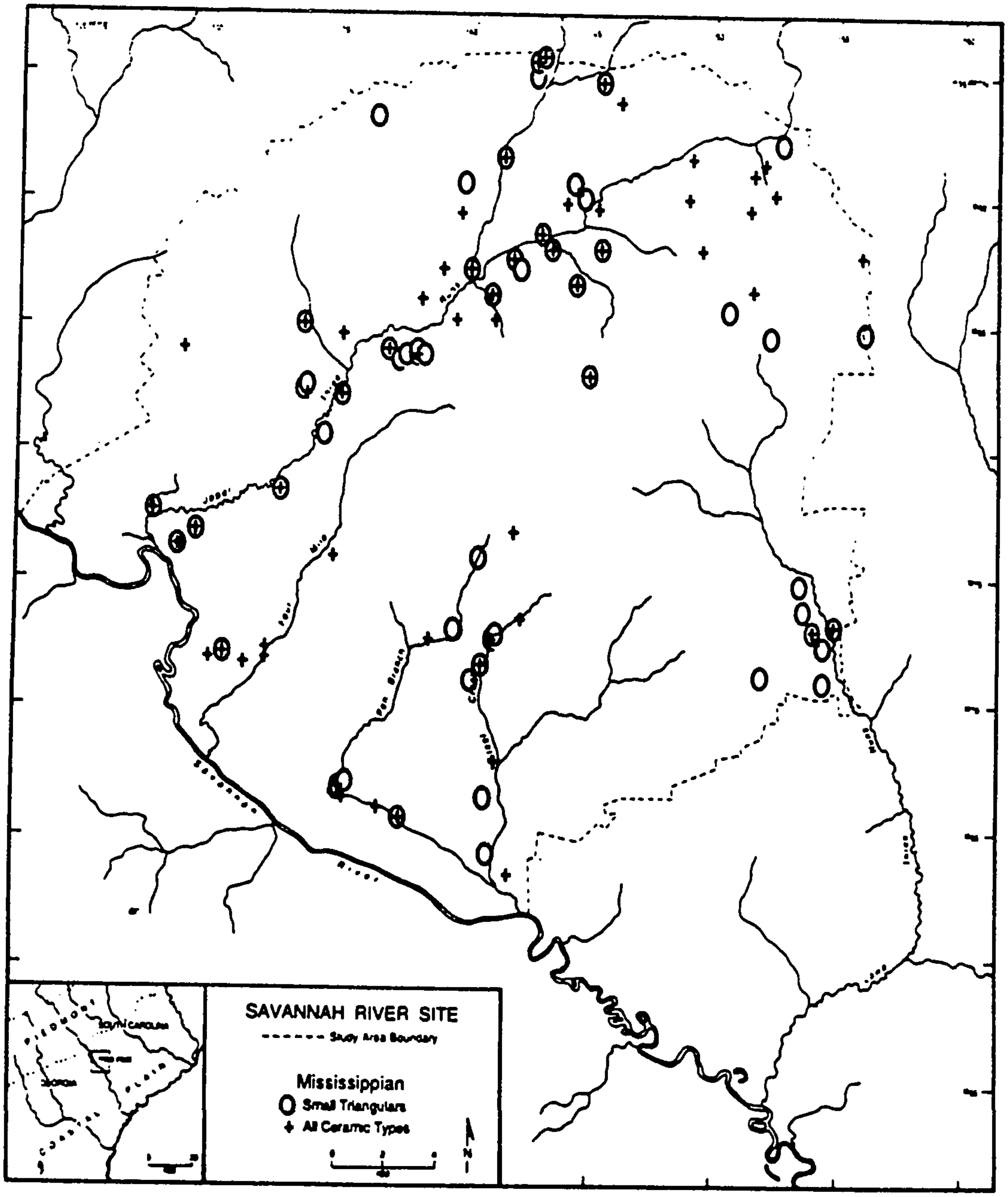


Figure 88. Mississippian Components on the Savannah River Site.
(adapted from Sassaman et al. 1989:271)

Examining the number of Mississippian components by subperiod on the SRS, it is apparent that settlement, or at least the number of sites that were used, was most extensive during the Early Mississippian Lawton phase, and declined somewhat during the subsequent Middle Mississippian Hollywood and Silver Bluff phases (Table 12, Figure 89). No Late Mississippian or historic Indian components have been been identified anywhere in the locality to date, supporting the inference that population declined markedly in the lower part of the basin after the Middle Mississippian period. The decline in the number of sites that occurred from the Early to the Middle Mississippian periods, in fact, suggests that the abandonment began during the latter period. Locational correlates of this depopulation may be present on the SRS, where a marked change in settlement is evident between the Early and the Middle Mississippian periods. Early Mississippian sites occur both along the river and in the interior, while Middle Mississippian sites are found almost exclusively in the interior, well away from the Savannah (Figure 90). This relocation of settlement away from the river into the more remote interior may have been a defensive measure, an attempt literally to hide settlements, or move them away from major transportation arteries, as political conditions became unstable. It is during this period, it must be recalled, that fortifications appeared or were expanded at Rucker's Bottom and Irene, respectively, suggesting an increase in warfare within the valley.

The Early/Middle Mississippian transition marked the period when the centers at Hollywood and Mason's Plantation reached and then passed their peak, and when the abandonment of the Red Lake and Lawton mound centers occurred. It is possible, therefore, that the settlement shift observed on the SRS between the Early and Middle Mississippian may also reflect a reaction of some kind to the absorbtion or consolidation of the simple chiefdoms in this part of the valley into complex chiefdoms. Settlement may have been more widespread when only simple chiefdoms were present, as was the

Table 12. Mississippian Components on the Savannah River Site.

Site Data

Area (ha)	Total sites		Sites w/Mississippian Components
48664	755		91
		ceramics only	(35)
		ppts only	(29)
		ceramics & ppts	(27)

Component Data

	ppts	cer	pt&cer	Total
Unknown Mississippian	29	15	16	60
Early Mississippian	n/a	14	14	28
Middle Mississippian	n/a	9	10	19
Late Mississippian	n/a	0	0	0
	29	38	40	107

ppts= Mississippian triangular projectile points only present
cer= Mississippian ceramics only present
pt&cer= Mississippian triangular projectile points and ceramics both present
n/a= not applicable (triangular projectile points cannot be identified to period)

91 Mississippian sites
62 sites have ceramics
56 sites have projectile points
27 sites have both ceramics and projectile points
29 sites have projectile points only

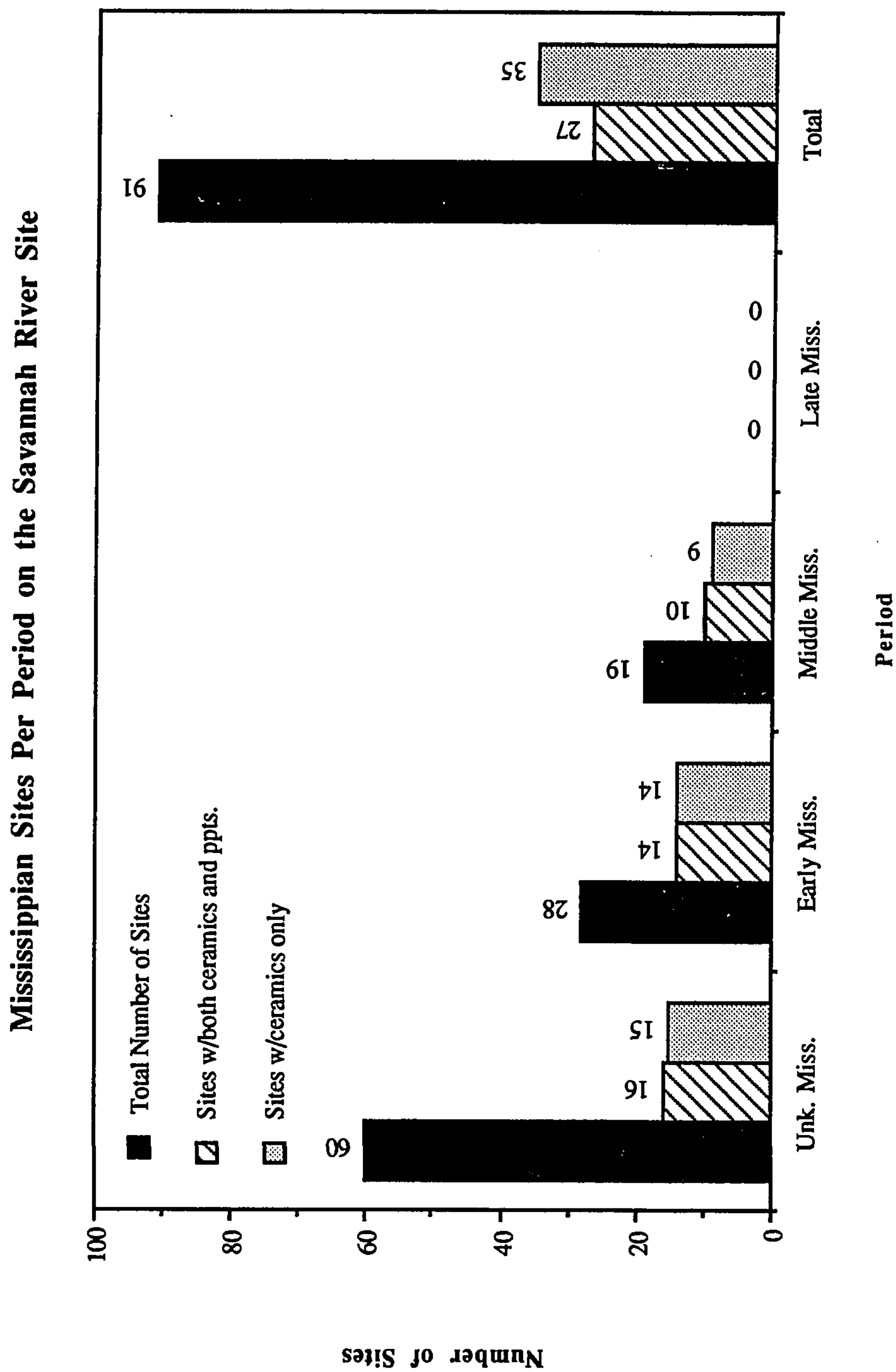


Figure 89. Mississippian Sites per Period on the Savannah River Site.

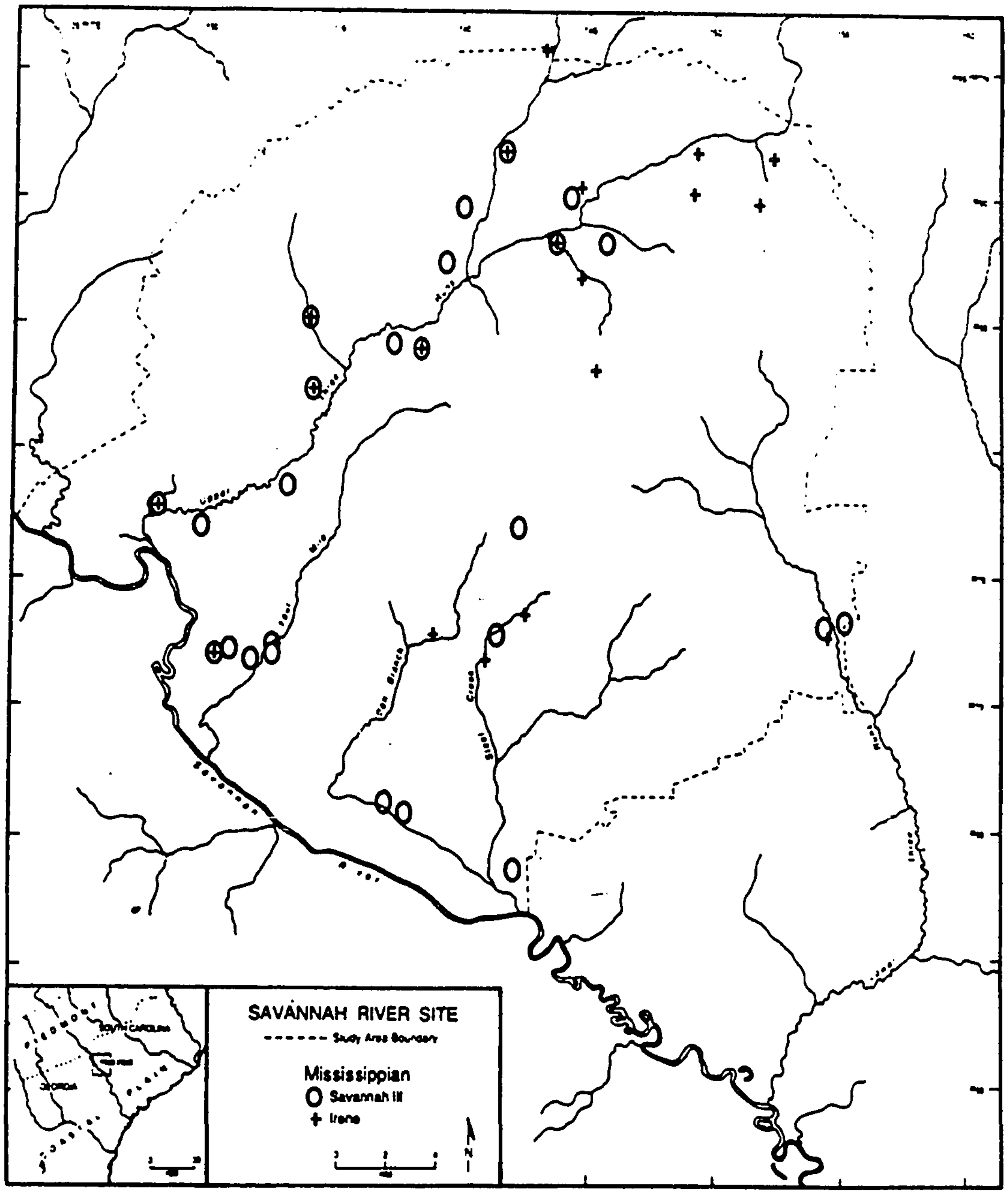


Figure 90. Distribution of Early and Middle Mississippian Sites on the Savannah River Site. (adapted from Sassaman et al. 1989:272-273)

case during most or all of the Early Mississippian period. When complex chiefdoms emerged during the Middle Mississippian, however, greater constraints may have been placed on surrounding populations. More stringent settlement policies may have been followed to ensure that populations were located in areas most advantageous or least threatening to elites at paramount centers. The abandonment of smaller centers that occurred with the emergence of the Rembert and Mason's Plantation polities may be examples of such a strategy, and the absence of major Mississippian communities on the SRS may be as well. If warfare became more intense as a result of these changes in the political landscape, the dispersal of outlying settlements away from major transportation arteries may have been a practical defensive strategy. There is some evidence that conflicts between paramount chiefdoms were more intense than those between simple chiefdoms because of the greater numbers of warriors involved and the larger scale of the conflict (DePratter 1983:44ff; Dye 1989; Steponaitis n.d.). Outlying Middle Mississippian populations like those on the SRS, while undoubtedly tied to the Mason's Plantation polity in some way, may have been too far away to depend upon it for protection.

The Richard B. Russell Reservoir. The Russell Reservoir is located in the central Piedmont portion of the Savannah River drainage, and includes a 45-km section of the main channel and its associated tributaries in Elbert and Hart counties, Georgia, and Abbeville and Anderson counties, South Carolina. The project area encompasses 21,052 ha, 10,790 ha in the maximum floodpool and the remainder in adjacent public use lands. The river channel is moderately incised and well defined in this area, with narrow floodplains about 100 to 250 m wide bounded by steep hills rising up to 30 m or more at the margins. Several major tributaries enter the river in the vicinity of the reservoir, the two largest of which, Beaverdam Creek and Rocky River, combine with the main channel to give the floodpool a trident-like shape.

From 1969 to 1985 an extensive program of cultural resource investigations took place in the reservoir area, with 732 prehistoric and historic archaeological sites found and large scale excavations conducted at more than 30 locations (Anderson and Joseph 1988). A program of paleoenvironmental investigations directed to reconstructing soils, geomorphic, and vegetational histories in the project area was conducted in conjunction with the archaeological fieldwork (Foss et al. 1985, Segovia 1985; Sheehan et al. 1985; Schuldenrein and Anderson 1988). Approximately one quarter of the total reservoir area was intensively surveyed, ca. 5400 ha, and 609 prehistoric sites were located (Figure 91). The survey encompassed almost half the topography thought to have a high probability of site occurrence, nearly level terrain (i.e., slopes <10%) elevated at least 10 feet [3 m] above water. The archaeological investigations in the Russell Reservoir stand as virtually the only floodplain data on late prehistoric settlement in the Piedmont portion of the Savannah drainage, since only limited archaeological investigation had accompanied the construction of the Thurmond and Hartwell reservoirs, located immediately downstream and upstream, respectively.

Late Woodland sites were extremely rare in the Russell Reservoir area, and only 13 Swift Creek and 7 Napier components were recorded (Anderson et al. 1988:25). Because identification of components dating to this period remains controversial (Chapter V), discussion of Late Woodland settlement, and its comparison with subsequent Mississippian occupations, is premature. Mississippian assemblages, in contrast, were common and readily identifiable and many could be dated to comparatively narrow time intervals. Mississippian artifacts were found on 125 sites, with identifiable ceramics observed at 110 sites and small triangular projectile points on 43 sites (Table 13). The number of components increased from the Early to the Middle Mississippian, followed by a precipitous decline in the Late Mississippian (Figure 92). The number of components rose continuously for several centuries, from a low of five during the

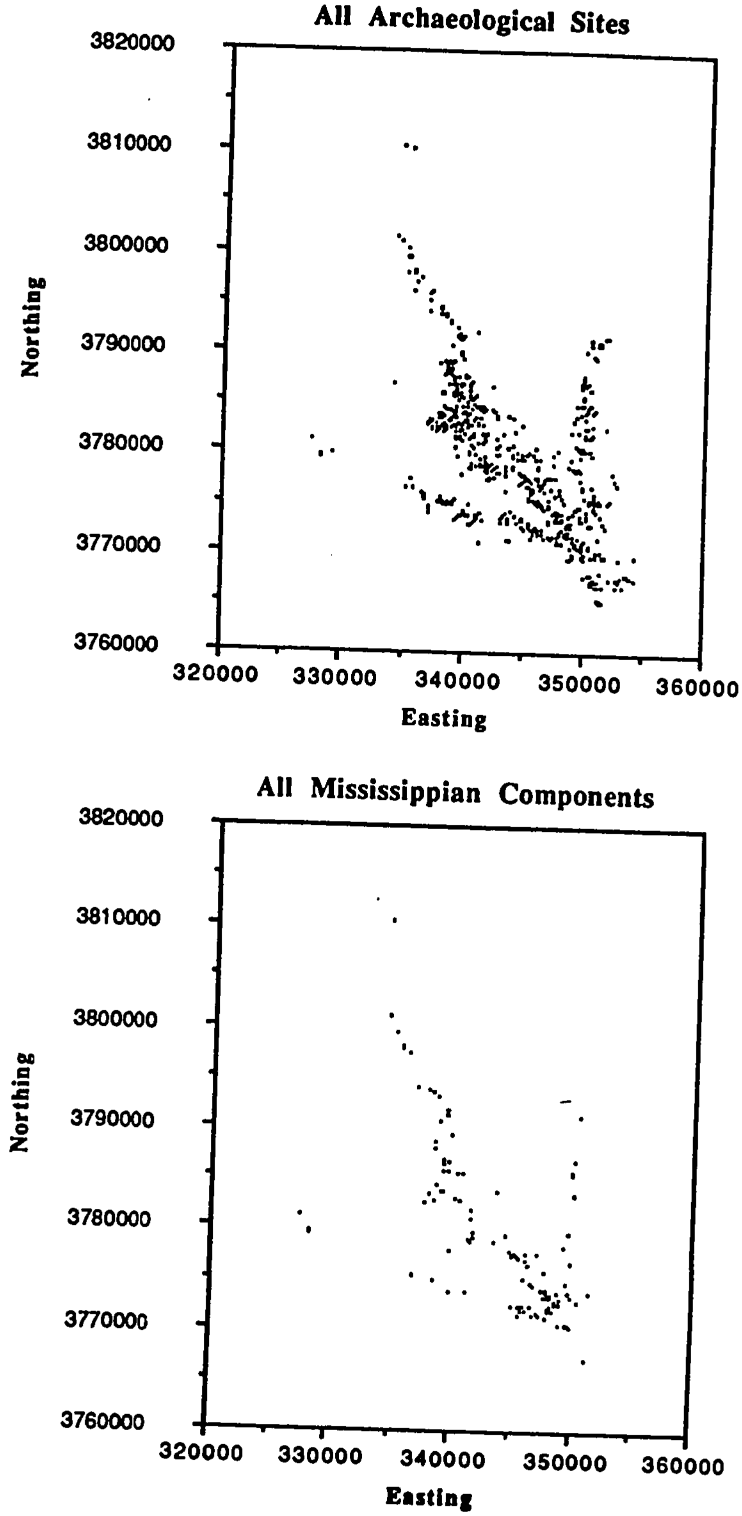


Figure 91. Distribution of All Sites, and All Mississippian Sites in the Richard B. Russell Reservoir Area.

Table 13. Mississippian Components in the Richard B. Russell Reservoir.

Site Data

Area (ha)	Total sites	Sites w/Miss Components	Total Mississippian Components (by period)
5395	732	125	169
ceramics only		(82)	(104)
ppts only		(15)	(15)
ceramics & ppts		(28)	(50)

Component Data

By Period

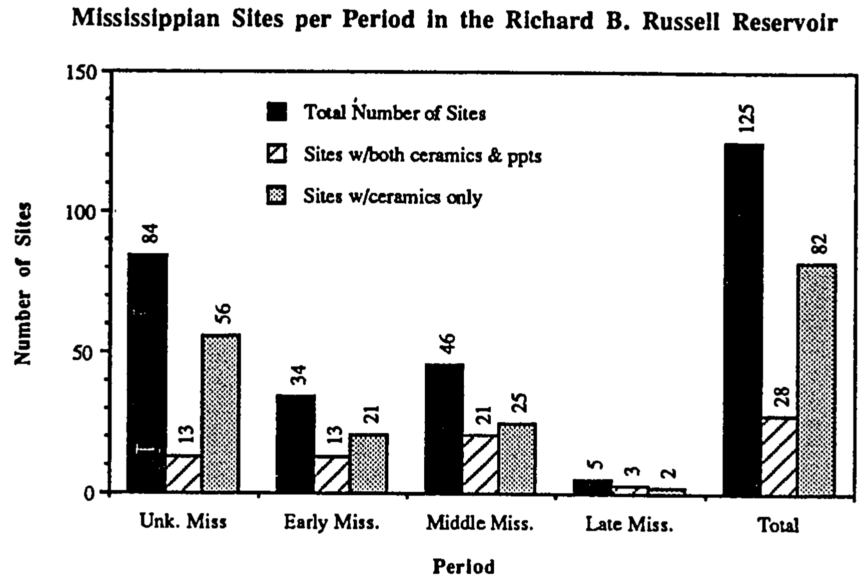
	ppts	cer	pt&cer	Total
Unknown Mississippian	15	56	13	84
Early Mississippian	n/a	21	13	34
Middle Mississippian	n/a	25	21	46
Late Mississippian	n/a	2	3	5
	15	104	50	169

By Phase

Phase	ppts	cer	pt&cer	Total
Woodstock	n/a	2	3	5
Jarrett	n/a	7	7	14
Beaverdam	n/a	18	9	27
Rembert	n/a	25	21	46
Tugalo	n/a	2	3	5
		54	43	97

ppts= Mississippian triangular projectile points only present
cer= Mississippian ceramics only present
pt&cer= Mississippian triangular projectile points and ceramics both present
n/a= not applicable (triangular projectile points cannot be identified to period)

125 Mississippian sites
110 sites have ceramics
43 sites have projectile points
28 sites have both ceramics and projectile points
15 sites have projectile points only



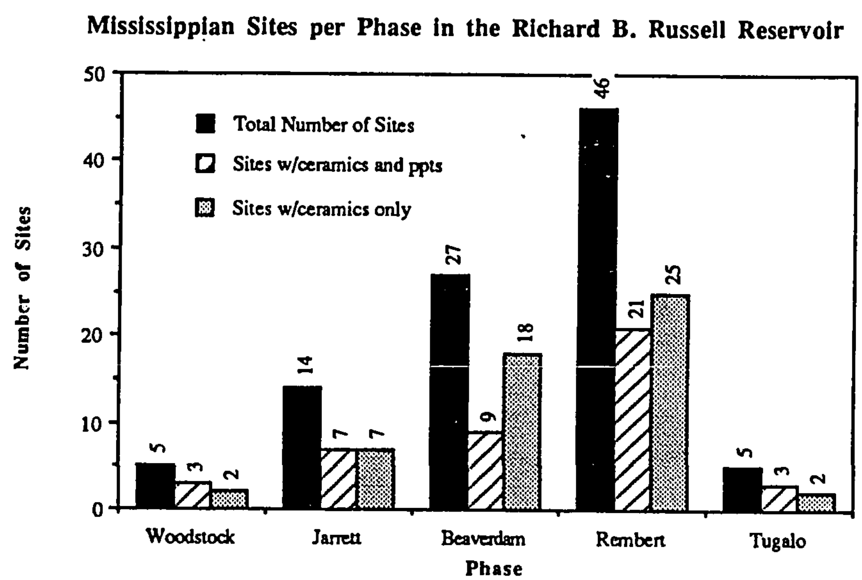


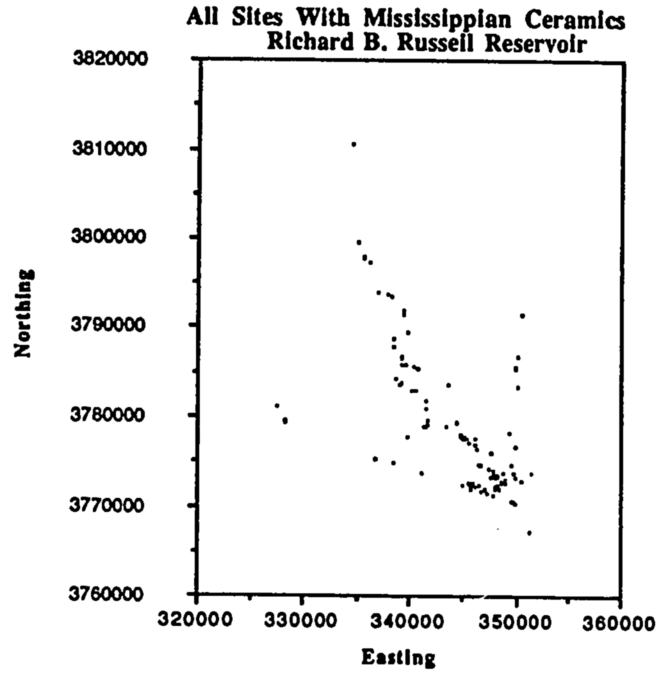
Figure 92. Mississippian Components in the Richard B. Russell Reservoir Area.

Woodstock phase to 14 during the Jarrett phase, 27 during the Beaverdam phase, and 46 during the Early Lamar Rembert phase. The peak in settlement during the Rembert phase corresponds to the emergence of the Rembert site, which is located just to the south of the Russell Dam site, as a major political entity in this part of the valley. Marked population decline soon followed, however. Only five post-Early Lamar components were identified. These were characterized by one to a few sherds of bold incised pottery amid larger Rembert or earlier Mississippian assemblages. Since bold incising also occurs in low incidence in the Rembert phase, it is possible some or all of these components may date to this time.

Nearly one out of every five prehistoric sites found in the Russell Reservoir had an identifiable Mississippian component, indicating that terrain near the Savannah was intensively utilized during the Mississippian period in the central Piedmont. Excavation data from the reservoir indicates that mound centers, small villages, and hamlets were present, although for most of the sites, where the available data come from surface context or from limited testing, function is difficult to resolve. The two mound centers in the locality, Tate and Beaverdam Creek, were occupied during the Early Mississippian period, while the Rembert mounds just downstream were occupied during both the Early and Middle Mississippian periods. Most of the Mississippian assemblages from the reservoir are assumed to come from habitation loci, since ceramics were found on most sites (N=110 of 125 sites, or 88%). While 28 of the sites with ceramics also had Mississippian triangular projectile points, only 15 sites were found with projectile points alone. This incidence (N=15 of 125 sites, or 12%) is far lower than that observed on the SRS in the upper Coastal Plain, where almost one third of the identifiable Mississippian sites had only projectile points present.

Mississippian components occurred both along the Savannah and up the major tributaries in the Russell area, although by far the greatest number were observed along the main river channel (Figure 91). The high number of sites in the lower portion of the basin reflects survey coverage, since this is where the floodpool was the most extensive. How interior, interriverine areas were utilized is unknown, since survey activity was restricted to in and near the floodpool, which by definition was restricted to lower-lying areas. From the limited survey work conducted in upland areas adjacent to the floodpool, however, no evidence was found to indicate that settlement in the uplands was as extensive as that noted in the Late Mississippian period in the central Oconee Valley to the west (Kowalewski and Hatch 1988; Rudolph and Blanton 1980). No appreciable difference was evident in the distribution of sites with points and sites with ceramics (Figure 93), although as noted previously, there were comparatively few Mississippian sites without ceramics in the reservoir area. While it is probable that the incidence of sites characterized by projectile points increased away from the river, a pattern that would suggest hunting away from habitation sites, only limited data have been found to support such an inference (Goodyear et al. 1979:231). Such a pattern is indicated in the Oglethorpe County Clearcut Tract survey data described below.

The distribution of Early and Middle Mississippian components in the Russell Reservoir sample is quite similar (Figure 94). Components during both periods are found in appreciable numbers along the main channel, and comparatively infrequently along tributary channels. The low incidence of identifiable Early and Middle Mississippian sites along even the largest tributary streams suggests settlement was largely restricted to the main channel. The Tate mound is, in fact, the only major Mississippian site found well away from the channel, and unfortunately little is known about this site and its surroundings. Early Mississippian components in the reservoir also appear to occur in clusters near the mouths of major tributaries, while Middle Mississippian components are more evenly dispersed along the channel. Whether these patterns are representative and what they may mean is currently unknown. During the



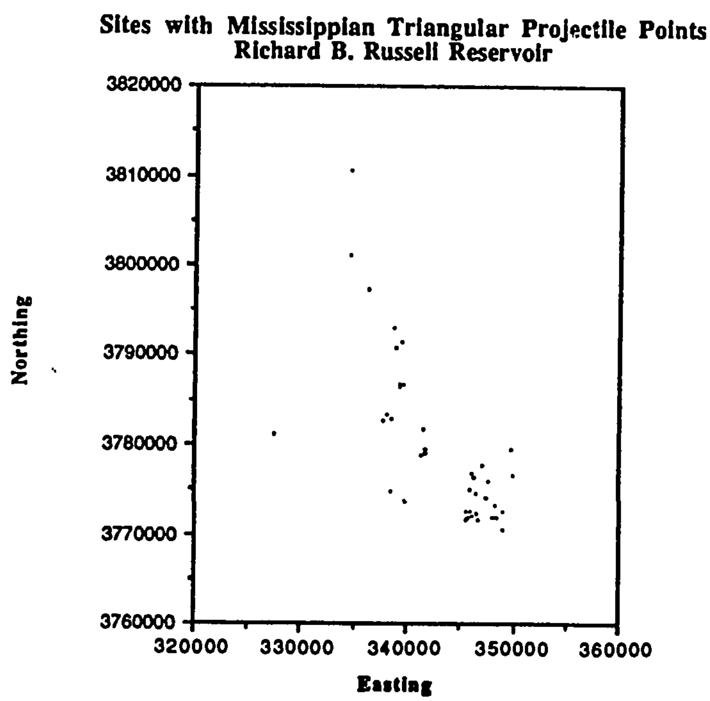


Figure 93. Distribution of Mississippian Sites with Ceramics and with Triangular Projectile Points in the Richard B. Russell Reservoir.

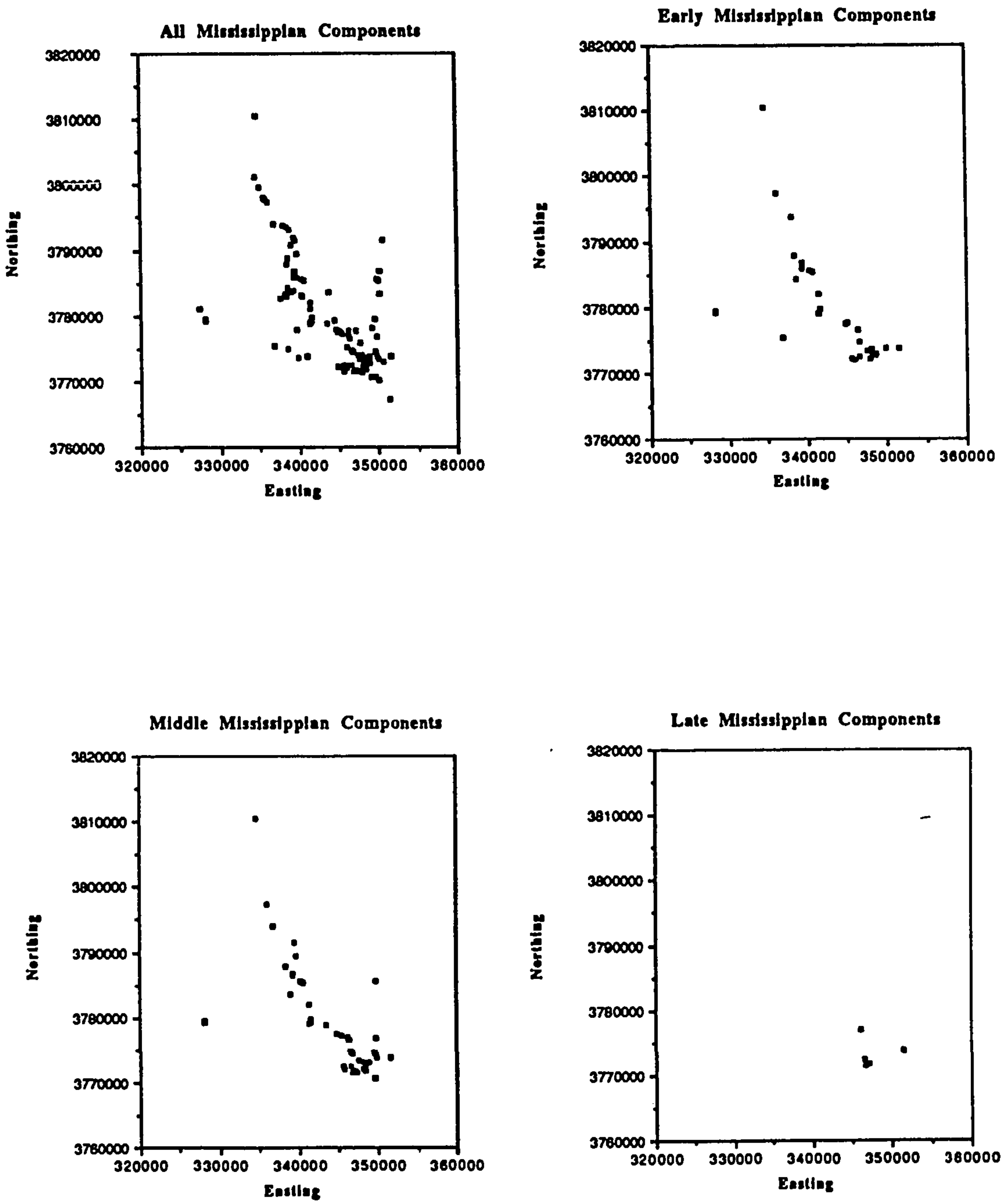


Figure 94. Distribution of Mississippian Sites by Period in the Richard B. Russell Reservoir.

Early Mississippian period one or more simple chiefdoms were present in the immediate locality, with centers at Beaverdam Creek and possibly at Tate, and the operation of these chiefdoms may have constrained settlement in some way. During the Middle Mississippian period these centers were abandoned, and the Rembert site, which was considerably farther away, achieved preeminence. Due to the increased distance of the Rembert center, elite control over settlement may have lessened somewhat locally during the Middle Mississippian period. Late Mississippian components, unlike those dating to earlier periods, were restricted to the lower part of the reservoir area, near the confluence of Beaverdam Creek and Rocky River with the Savannah. Why this is the case is unknown, although the restriction of Late Mississippian sites to a comparatively small portion of the locality suggests occupation was itself fairly limited.

Oglethorpe County Clearcut Tracts. The final intensive survey dataset examined encompassed eight clearcut tracts totaling 1198 ha in the central Piedmont of eastern Georgia (Freer 1989). The tracts were distributed in a near-linear fashion from the Oconee River to the Broad River, a tributary of the Savannah (Figure 95). As such, they effectively straddled the divide between these two major watersheds, and offered the opportunity to examine sites and assemblages in a possible boundary zone, at increasing distances from the major drainages in the area. A total of 313 prehistoric sites were located in the eight tracts, which were surveyed in their entirety following timber harvesting in 1988 by archaeologists from the University of Georgia under the direction of Jennifer Freer.

Mississippian components were identified at 71 sites, with pottery found at 61 sites and small triangular projectile points at 23 sites (Table 14). Thirteen of the 23 sites with points also had pottery, while at the remaining 10 sites only points were present. The incidence of sites where only small triangular projectile points were found, at about 14% of all sites with Mississippian components, is comparable to that noted in the

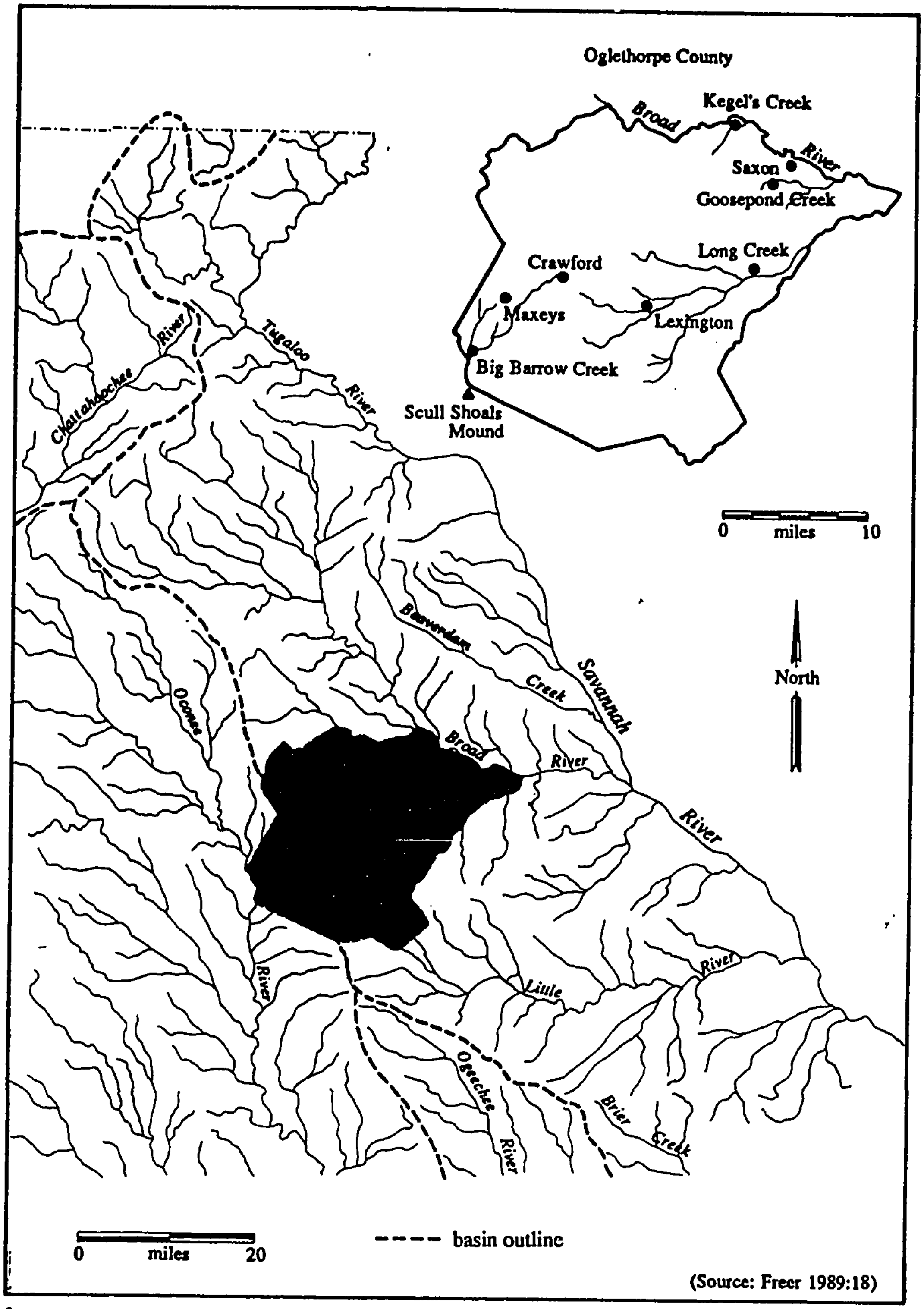


Figure 95. Oglethorpe County Clearcut Tract Locations.

Table 14.
Mississippian Components in the Oglethorpe County Clearcut Tracts.

Tract		Area (ha)	Total sites	Sites w/Miss Components	Total Mississippian Components
1	Big Barrow	476	46	13	15
2	Maxeys	176	64	12	13
3	Crawford	68	30	17	17
4	Lexington	190	20	9	11
5	Long Creek	119	40	2	2
6	Goosepond	85	51	6	6
7	Kegels Creek	28	23	3	4
8	Saxon	56	39	9	11
Totals		1198	313	71	79

Tract		Unknown Mississippian				Early Mississippian			
		Total	ppts	cer	pt&cer	Total	ppts	cer	pt&cer
1	Big Barrow	0	0	0	0	0	n/a	0	0
2	Maxeys	0	0	0	0	1	n/a	0	1
3	Crawford	1	1	0	0	0	n/a	0	0
4	Lexington	0	0	0	0	1	n/a	1	0
5	Long Creek	2	2	0	0	0	n/a	0	0
6	Goosepond	3	3	0	0	0	n/a	0	0
7	Kegels Creek	0	0	0	0	1	n/a	0	1
8	Saxon	8	4	2	2	1	n/a	0	1
Totals		14	10	2	2	4	n/a	1	3

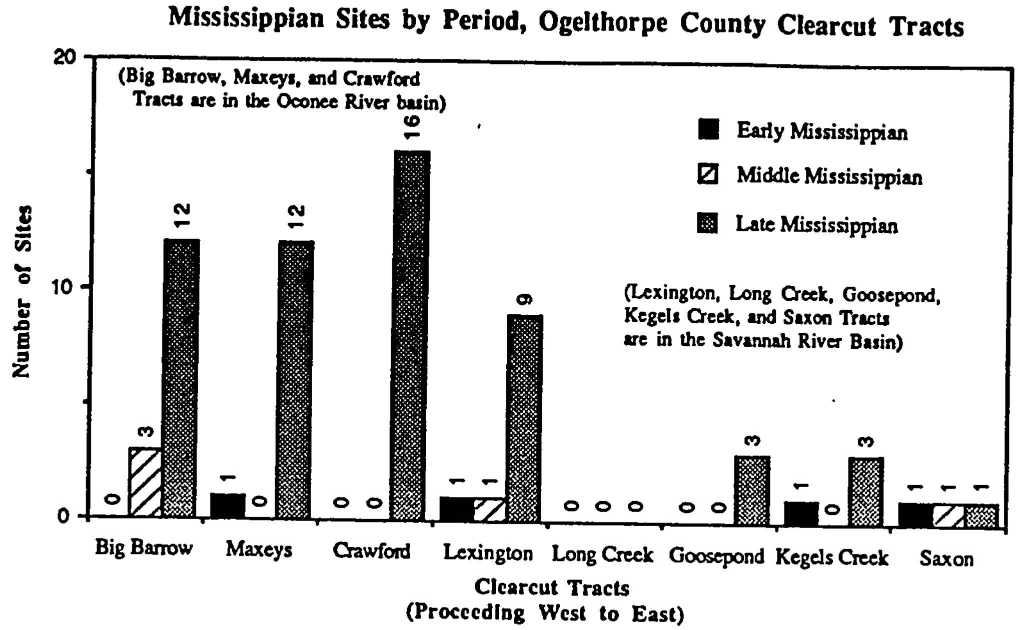
Tract		Middle Mississippian				Late Mississippian			
		Total	ppts	cer	pt&cer	Total	ppts	cer	pt&cer
1	Big Barrow	3	n/a	3	0	12	n/a	12	0
2	Maxeys	0	n/a	0	0	12	n/a	10	2
3	Crawford	0	n/a	0	0	16	n/a	14	2
4	Lexington	1	n/a	1	0	9	n/a	9	0
5	Long Creek	0	n/a	0	0	0	n/a	0	0
6	Goosepond	0	n/a	0	0	3	n/a	1	2
7	Kegels Creek	0	n/a	0	0	3	n/a	0	3
8	Saxon	1	n/a	0	1	1	n/a	0	1
Totals		5	n/a	4	1	56	n/a	46	10

ppts= Mississippian triangular projectile points only present
cer= Mississippian ceramics only present
pt&cer= Mississippian triangular projectile points and ceramics both present

Russell Reservoir, which is located immediately to the northeast. Examining the distribution of Mississippian components by period over the survey tracts, it is evident that settlement was greatest near the Oconee River, and was most intense during the Late Mississippian period (Figure 96).

Early Mississippian components, identified by the presence of Woodstock and Etowah ceramics, were uncommon, occurring on one site each in four of the tracts. Three of these four sites were in the Savannah River basin, perhaps indicating population density was higher in this drainage during the Early Mississippian. Small triangular projectile points were found on three of the four sites, suggesting both domestic and resource-procurement (i.e., hunting-related) activities may have been occurring (Figure 96). Middle Mississippian components, identified by the presence of Savannah materials, were only slightly more common, occurring on five sites (Figure 97). Interestingly, three of these sites were located in the Oconee River basin, suggesting a shift in settlement away from the Savannah basin or population increase in the Oconee basin was occurring (Freer 1989:130-131). Only one of the five sites yielded Mississippian triangular projectile points, indicating, possibly, that hunting related activity was becoming separated in some fashion from habitation sites. Freer (1989:131) has suggested that the emergence of chiefly centers in this part of the Savannah and Oconee basins during the Middle Mississippian period, at the Beaverdam Creek and Scull Shoals sites, respectively, may have resulted in a relocation of population to areas closer to these centers. Intervening areas, in this view, served as a combination boundary zone and hunting territory for these groups, and possibly an area where warfare occurred (Freer 1989:131).

Late Mississippian period components, identified by the presence of Iron Horse (A.D. 1450 to 1530), Dyar (A.D. 1530-1590), and Bell (A.D. 1590 to 1650) phase assemblages (Freer 1989:132-133; Smith 1981:186-189, 245; Williams 1983:433-439,



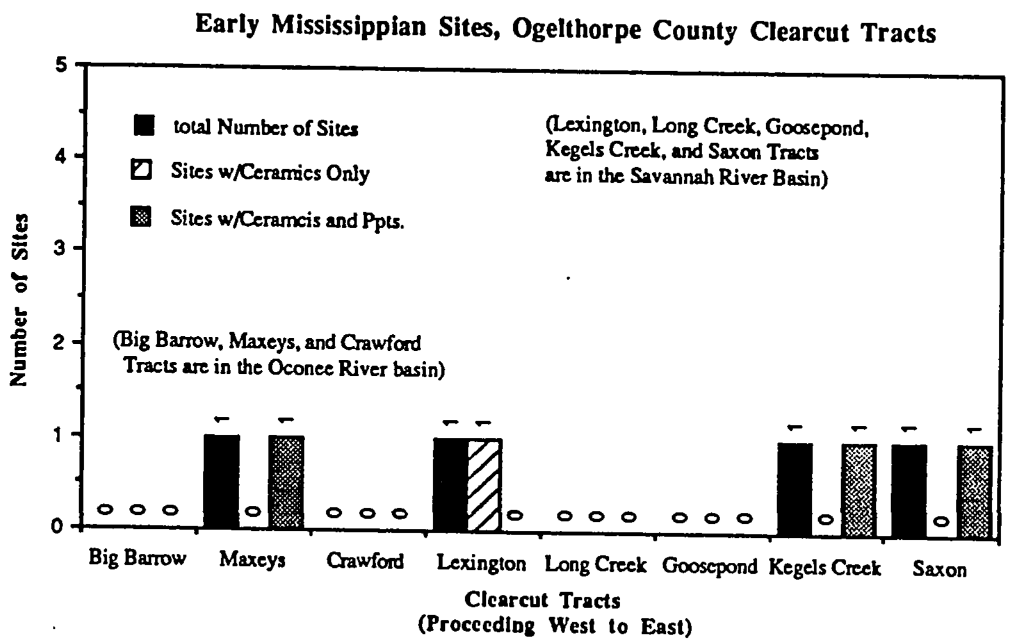
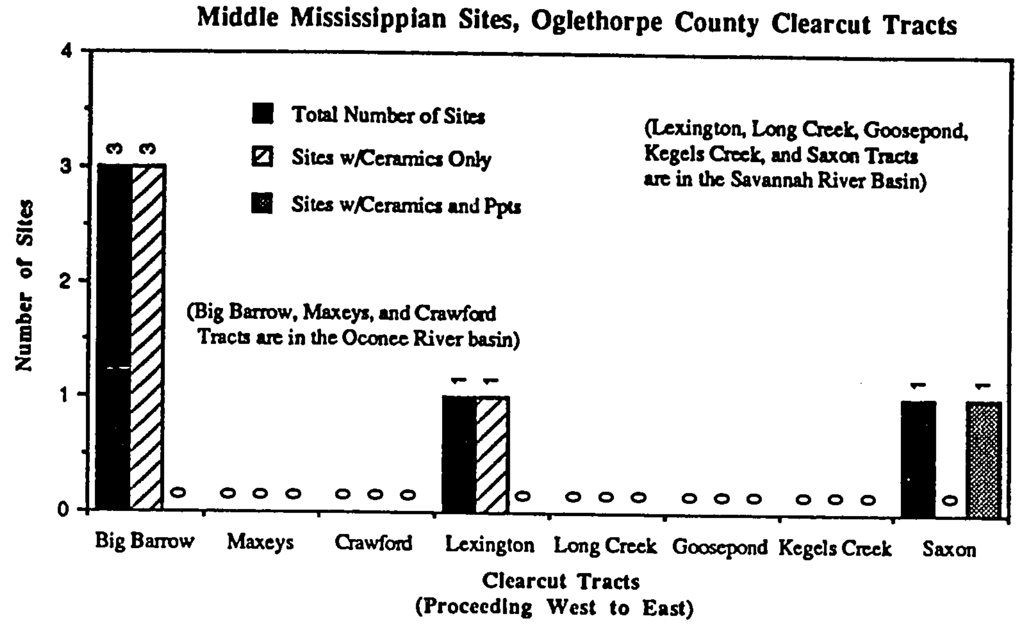


Figure 96. Mississippian Sites by Period and Survey Tract, and Early Mississippian Sites by Assemblage Characteristics, Oglethorpe County Clearcut Survey.



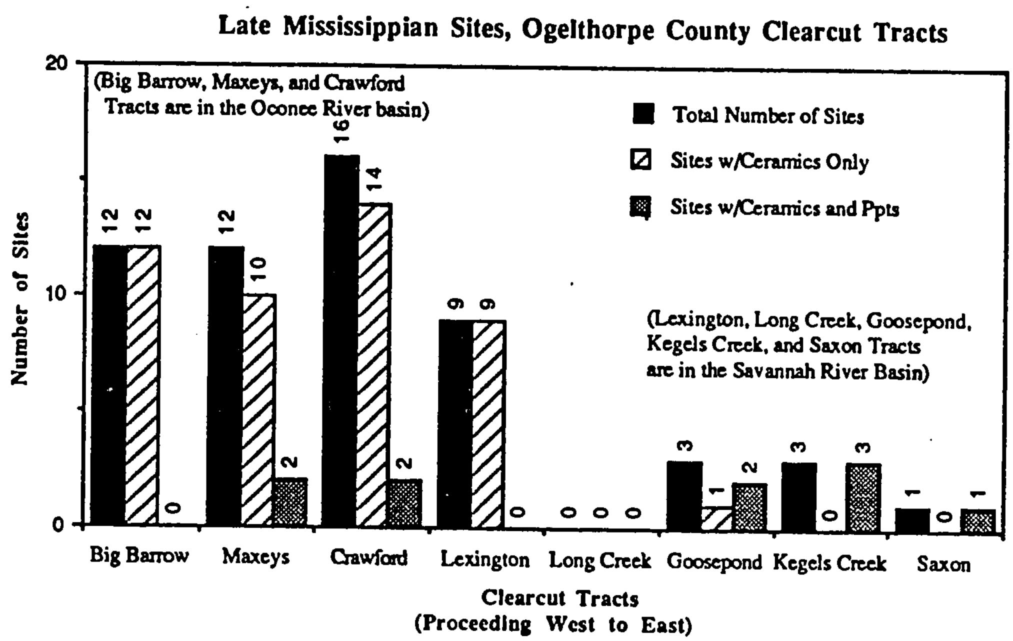


Figure 97. Middle and Late Mississippian Sites by Tract and Assemblage Characteristics, Oglethorpe County Clearcut Tracts.

1988:123-124), were extremely common, occurring on 56 sites (Figure 97). Major population increase and a dramatic expansion of settlement into upland environments is indicated by the numbers of sites found and an examination of their environmental associations (Freer 1989:152). An appreciable majority of the sites (N=40, 71.4%) were in tracts in the Oconee basin, indicating the settlement trends observed during the preceding Middle Mississippian period — an increase in settlement in this part of the Oconee basin, and comparative decrease in use of this part of the Savannah River basin — continued.

Mississippian triangular projectile points were observed only infrequently on Late Mississippian sites (N=10; 17.9%), like the pattern observed during the preceding Middle Mississippian period, again suggesting separation of hunting activity or possibly warfare away from habitation sites. Interestingly, six of the 16 Late Mississippian sites found in tracts in the Savannah River basin had small triangular projectile points, while points were found on only four of 40 Late Mississippian sites in the Oconee basin (Table 14). Greater hunting-related activity associated with habitation sites, or an increase in warfare, may be indicated by this distribution, at least for populations in the Savannah River basin. The increased incidence of projectile points on sites does suggest that the western Savannah River basin was some kind of a boundary area.

The settlement changes documented in the Oglethorpe County survey tracts appear to reflect events occurring over a much larger area. Major population increase during the Late Mississippian period is well documented in the upper Oconee River Valley. An analysis of materials from ca. 800 Mississippian sites in the Wallace Reservoir has documented a fourfold increase in the number of sites between the Early and Late Lamar periods (Rudolph and Blanton 1980). By the start of the Late Lamar period in the Richard B. Russell Reservoir along the Savannah, located to the east of the Oglethorpe County tracts, in contrast, population had declined markedly. The Oglethorpe

County survey data, however, indicate settlement continued in the Savannah basin in areas near the Oconee basin, although the number of sites declined rapidly with increasing distance from the Oconee basin. These patterns, particularly the comparatively large number of Late Mississippian sites (N=9) observed in the Lexington tract in the extreme western reaches of the Savannah River basin, indicate that major watershed divides did not serve as strict territorial boundaries, at least during the Late Mississippian period, in this area (Figures 95, 97). Population expansion into the Savannah River basin was probably facilitated, however, by the depopulation that occurred farther to the east.

The expansion of settlement observed during the Late Mississippian period in the upper Oconee Valley has been variously attributed to: (1) a breakdown in chiefly political systems following European contact, and movement of people away from the control of elites at centers, (2) population increase, brought about in part by the discovery that soils in upland areas was fertile and productive, and (3) in-migration of peoples from the Savannah River and other areas (Anderson 1990; Freer 1989:152-154; Kowalewski and Hatch 1988). While all of these explanations may be correct, only the second has received serious attention. While upland settlements in the Oconee basin are not disproportionately located on the most fertile soils, the high fertility of most upland soil types suggests some concern with maximizing agricultural productivity (Kowalewski and Hatch 1988).

Environmental Factors Affecting Political Change and the Stability of Chiefdoms in the Savannah River Valley

In this section environmental factors are examined to see how they might have influenced the record of Mississippian settlement and political change that has been documented in the Savannah River Valley in the preceding pages. Following a brief examination of regional physiographic conditions and biotic resource structure, attention turns to how Mississippian populations made use of their hinterlands, specifically the interriverine areas away from domestic settlements. Factors shaping buffer zone formation and maintenance are proposed and tested using archaeological data encompassing all of South Carolina. Finally, climatic records for the period A.D. 1300 to 1600, specifically moisture/drought severity indices extrapolated from bald cypress dendrochronological cores, are used to model probable crop productivity and food reserves in storage each year over this interval. The results are compared with the archaeological record from the basin to indicate the effects of climate and the kind of storage strategies likely in use among local Mississippian societies.

The Effects of Local and Regional Physiographic Structure

If our reconstruction of Mississippian settlement history is correct, chiefdoms in the lower part of the Savannah River basin, encompassing the Coastal Plain below the Fall Line, declined sometime between ca. A.D. 1300 and 1400. Only somewhat later, after ca. A.D. 1450, did the same fate befall the chiefdoms in the central Piedmont, while the area around the headwaters, in the Blue Ridge physiographic province, was occupied until well into the historic period. It is possible that the lower part of the basin was abandoned first because the kinds of resources attractive to Mississippian populations were never very great in this area. The Coastal Plain lies within Braun's (1950:280) Southern Evergreen Forest. Low-lying floodplain, swamp, and Carolina Bay areas are dominated by water-tolerant hardwoods, while vegetational communities away from these communities, most typically in the interriverine zone, are characterized by xeric mixed scrub oak-turkey oak-pine barrens at higher elevations, and mixed hardwood-pine forests at lower elevations (see also Barry 1980:95-190). Analyses of resource potential have indicated that the tributary/floodplain bottomland forests would have offered the greatest food resources to native populations (Brooks et al. 1989:44-52; Larson

1980b:51-56), and large numbers of prehistoric sites have been found on the terraces adjacent to this zone throughout the Coastal Plain (Anderson 1975; Brooks and Scurry 1978; Sassaman et al. 1989).

Few major Mississippian sites have been found in the lower Coastal Plain of either Georgia or South Carolina away from the Sea Island area (Ferguson 1971; Anderson 1975; Schnell and Wright 1990). This patterning has been attributed to the extensive pine forests or "barrens" in the area, and the decreased exploitable biomass away from major riverine swamps (Larson 1980b:56). The possibility that Mississippian agricultural technology, which apparently first appeared locally in the Piedmont of northern Georgia, and which may have been unable to adapt effectively to conditions in the Coastal Plain has also been advanced (Ferguson 1971:246). In the Savannah River Valley both of these factors may have constrained settlement somewhat. Below the Fall Line the basin is quite narrow, with few large tributary streams (Figure 98). Well-defined first terraces are comparatively rare along the lower part of the channel due to the great expanse of swamps. The broad shallow valleys of the central and lower Coastal Plain are characterized by low sedimentation rates and channel switching rather than lateral migration (Brooks et al. 1989:28), indicating areas where Mississippian floodplain agriculture might have been practiced were comparatively rare. Only in the upper Coastal Plain and particularly in the Piedmont, where relief is more pronounced, and channels more stable, are well defined, periodically flooded terraces presumably more suited to Mississippian agriculture present.

The presence of only a few large tributaries in the Coastal Plain portion of the Savannah River basin, furthermore, meant that hardwood bottomland swamps would have been comparatively rare away from the main channel. As a result, population levels probably remained fairly low in the lower basin. The large number of Mississippian sites noted along Upper Three Runs Creek, a major tributary passing through the SRS,

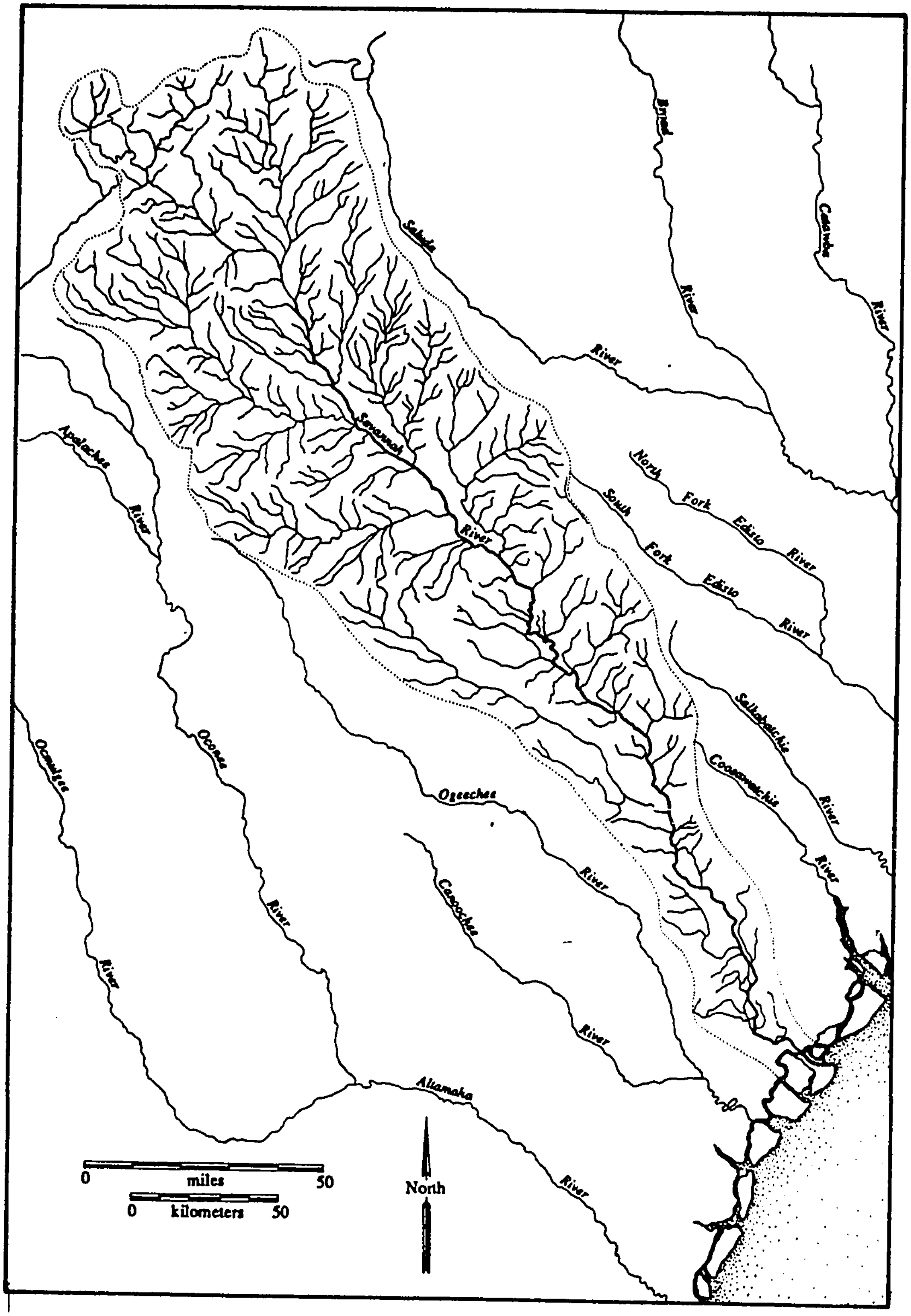


Figure 98. Tributary Drainage Patterns in the Savannah River Basin.

indicates major streams, where present, were favored settlement areas. The fact that they were infrequent, however, meant that there would have been only a comparatively minor zone of desired terrain between the floodplain forests of the main channel and the pine forests of the interriverine zone (Brooks et al. 1989). If the Coastal Plain portion of the Savannah River basin was not particularly suited to Mississippian settlement, it is possible that chiefdoms established in this area may have been particularly vulnerable to resource or political stress, thus helping to explain why they were abandoned before societies farther to the north in the basin.

Vegetation in the Piedmont falls within Braun's (1950:259) Eastern Oak-Hickory Formation, and consists of a mixed mesophytic forest with a considerable range of hardwoods (Barry 1980:75-76). In the South Carolina Blue Ridge province a wide range of species are found, ranging from mixed hardwoods in the narrow floodplain forests to oak-hickory forests in the uplands, with xeric pine-scrub oak associations on rocky ridge crests. The mixed, predominantly hardwood forests occupy both riverine and interriverine areas in the upper part of the basin, which meant that mast and hence game occurred throughout the region, unlike the situation in the Coastal Plain, where food resources of interest to human populations were largely concentrated in riverine habitats (Barry 1980; Ward 1983:68-69). Prehistoric sites have been found in large numbers in both the riverine and interriverine areas of the Georgia-South Carolina Piedmont (Anderson and Joseph 1988; Fish and Hally 1983; Freer 1989; Goodyear et al. 1979; House and Ballenger 1976; Kelly 1972; Sassaman 1983; Ward 1983; White 1982). While there is a tendency for larger sites to occur along the major rivers of the region, potential food resource distributions in the Piedmont and Blue Ridge areas do not appear to have constrained prehistoric land use to the extent noted in the Coastal Plain.

The organizational collapse and presumed associated abandonment of the central and lower Savannah River Valley that took place in the late 15th century may also be tied, at least in part, to regional physiographic structure, specifically drainage patterns. The Savannah is a somewhat smaller basin (27,450 sq. km) then the basins on either side, the Santee-Wateree-Congaree (41,500 sq. km) to the east, and the Ocmulgee-Oconee (35,200 sq. km) to the west (Carver 1959; U.S.G.S. 1974) (Figure 99). As documented in Chapter III, a number of major Mississippian polities were present in these drainages in the 16th century while the Savannah itself lay largely abandoned. This suggests that basin size may be related, in some way, to the variability in social complexity and longevity observed in the region's Mississippian chiefdoms. If this was the case, then societies in smaller basins could well have been at a disadvantage in any competition or conflict with societies in adjacent larger basins. Minimally, if land use was restricted largely to one's immediate basin, societies in smaller basins would have had a smaller resource base to draw upon and, probably as a direct result, lower population levels. The smaller size of the Savannah basin is due to the near-linear course of the main channel and the absence of an extensive tributary network radiating away from it. How local Mississippian populations made use of this terrain, and how they interacted with societies in adjoining basins, requires an examination of assemblages from a much larger area.

The Formation and Maintenance of Mississippian Buffer Zones

Theoretical Considerations. Mississippian exploitation of wild plant and animal resources was not restricted solely to the floodplain and immediately adjoining microenvironments, but included forays into the interriverine areas. This activity appears to have led to low intensity warfare and the creation of buffer zones between groups. Buffer zones, or unoccupied areas, are well documented in the early 16th century accounts (DePratter 1983:20-43). As noted in Chapter III, these accounts indicate that skirmishes tended to occur when groups from differing polities met when hunting or fishing. Terrain near permanent settlements thus served as a fairly safe procurement

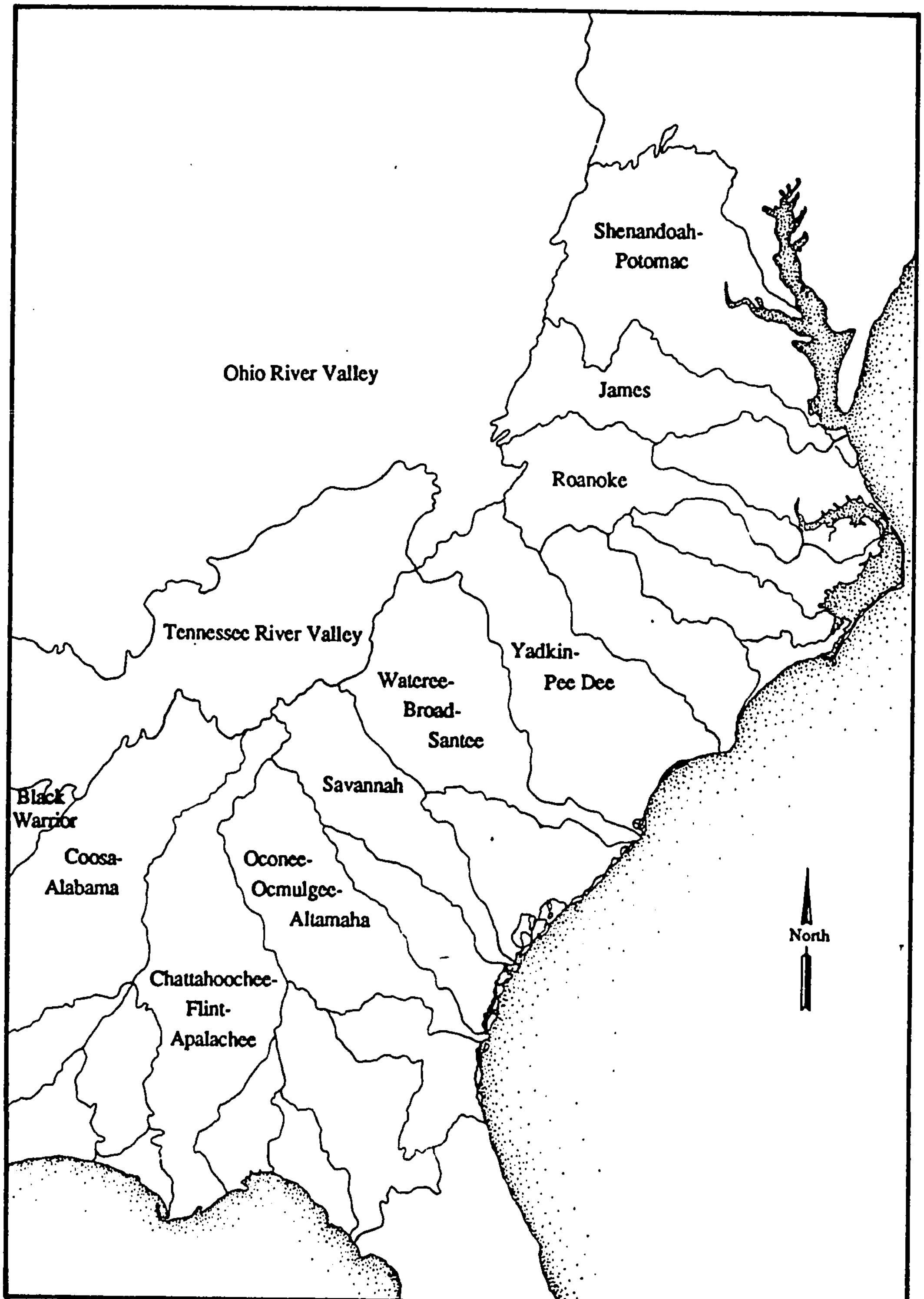


Figure 99. The Size of the Savannah River Basin in Comparison to Surrounding River Basins.

territory for a range of resources, while hunting and gathering in areas at a greater distance was increasingly dangerous.

Although studies of the specific patterns of human and animal behavior that lead to the formation of buffer zones have been only infrequently attempted (DeBoer 1981; DePratter 1983; Durham 1976; Gage 1979; Gramly 1977; Gross 1975; Hickerson 1965; Smith 1974b; Speth and Scott 1985), detailed studies have been made of buffer zone formation and maintenance in other animal species. Territorial boundary avoidance behavior, measured in a sharp decline in the occurrence of kills near group boundaries, for example, has been observed among wolf populations, social carnivores that do not tolerate intruders into their territory (Fritts and Mech 1981:62-63; Mech 1977; Nelson and Mech 1981:40). Areas midway between groups were thus typically avoided, to reduce the possibility of conflict. It is probable that Mississippian populations in the Southeast acted the same way. The low incidence of contact across the buffers in place in the 16th-century Southeast was highlighted by the fact that De Soto repeatedly surprised native groups when he emerged from buffer zones, even though his party numbered 600 soldiers, and was accompanied by hundreds of Indian bearers, close to 200 horses, and even a herd of pigs (DePratter 1983:39-42). This example suggests that contacts between groups separated by buffers were few and far between and, given the pattern of skirmishing between hunting parties, that the central portions of these buffers were to be avoided whenever possible. As noted in Chapter II, an ecological consequence of this behavior was that buffer zones served as game sanctuaries or refuges, from which species depleted closer to settlements might replenish themselves (Hickerson 1965; Mech 1977). The maintenance of buffer zones, whether intended or not, may have thus prevented overhunting and potentially serious food shortages. The necessity of maintaining viable hunting territories may have been as important a reason for skirmish-type warfare in Southeastern chiefdom-level societies as any need to control prime agricultural land (Larson 1972) or reduce social inequalities by offering commoners a way to achieve honored status (Gibson 1974).

Evidence for the existence and operation of buffer zones between Southeastern chiefdoms should be recognizable archaeologically. In the discussion of Mississippian settlement in the Savannah River basin, the distribution of diagnostic projectile points and ceramics was used to infer land use strategies and political conditions, specifically where habitation, hunting, and warfare may have occurred and with what intensity. These same data may be able to help us to understand how buffer zones were formed and maintained. In the Oglethorpe County Clearcut Tracts discussed previously, for example, a decrease in presumed habitation sites, and an increase in the incidence of projectile points on these presumed habitation sites, was documented with increasing distance from the Oconee River (Figure 96 above). Over this same sample, the number of sites with small triangular projectile points (lacking Mississippian pottery) also increased with distance from the presumed core settlement area near the Oconee River (Figure 100). These patterns suggest that areas away from major drainages served as hunting territories.

If the incidence of Mississippian habitation and hunting debris could be mapped over a large area, sufficient to encompass two or more polities, the resulting distributions might reveal the existence and extent of buffer zones, and the intensity with which these areas were used. Hypothetical artifact distributions are illustrated in Figure 101, using the presence of ceramics to indicate habitation areas, and small triangular projectile points for areas where hunting or warfare occurred. Two major patterns are predicted, depending on the nature of political relations between these societies. If individuals from the differing polities were making a deliberate effort to avoid each other, then the area midway between these polities would probably be devoid or nearly devoid of artifacts. If conflict was occurring between two polities that were essentially equivalent in strength, and foraging parties were being actively challenged, however, an increased incidence of

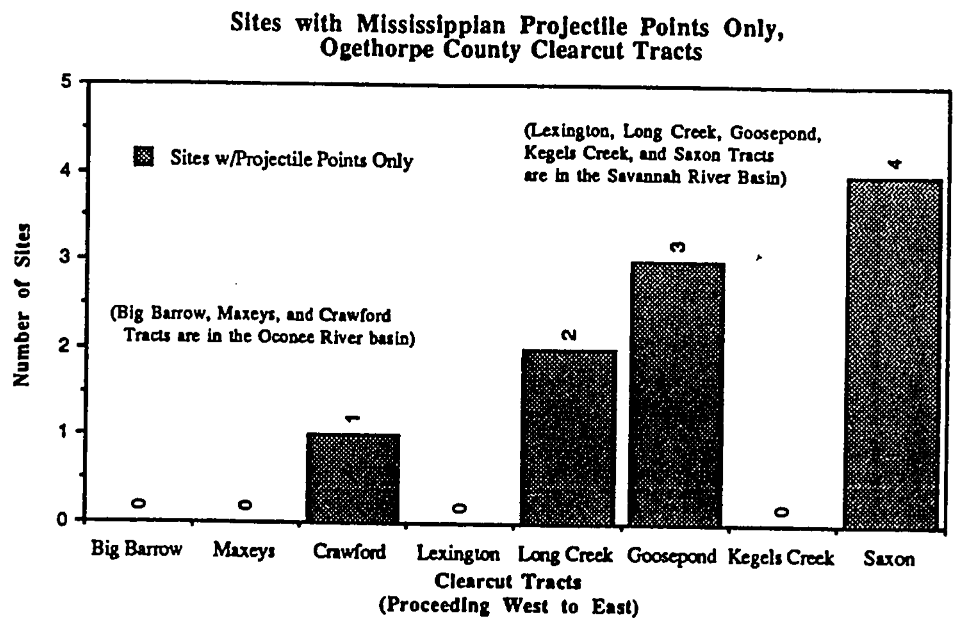
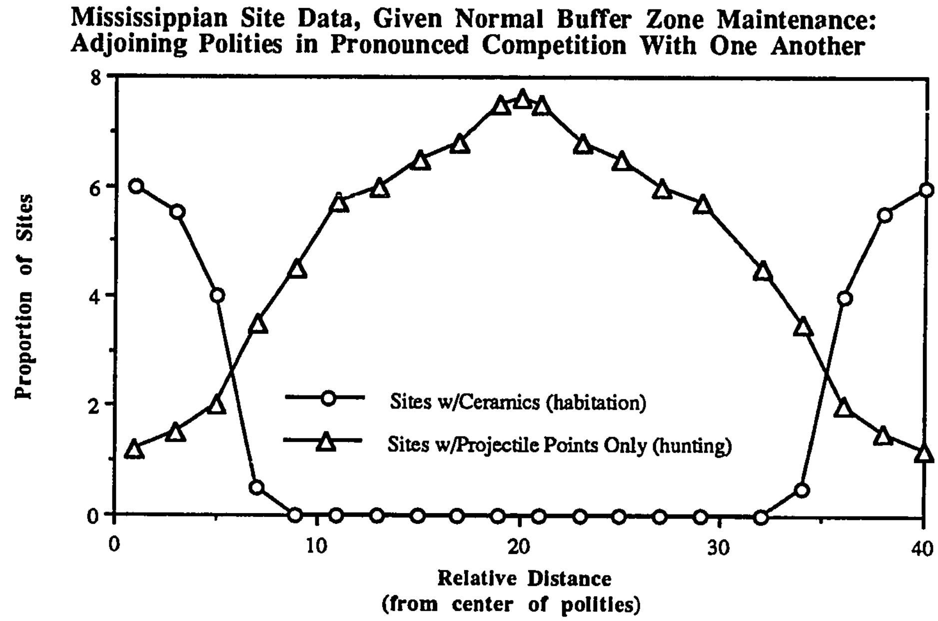


Figure 100. Sites with Mississippian Projectile Points Only; Oglethorpe County Clearcut Tracts.



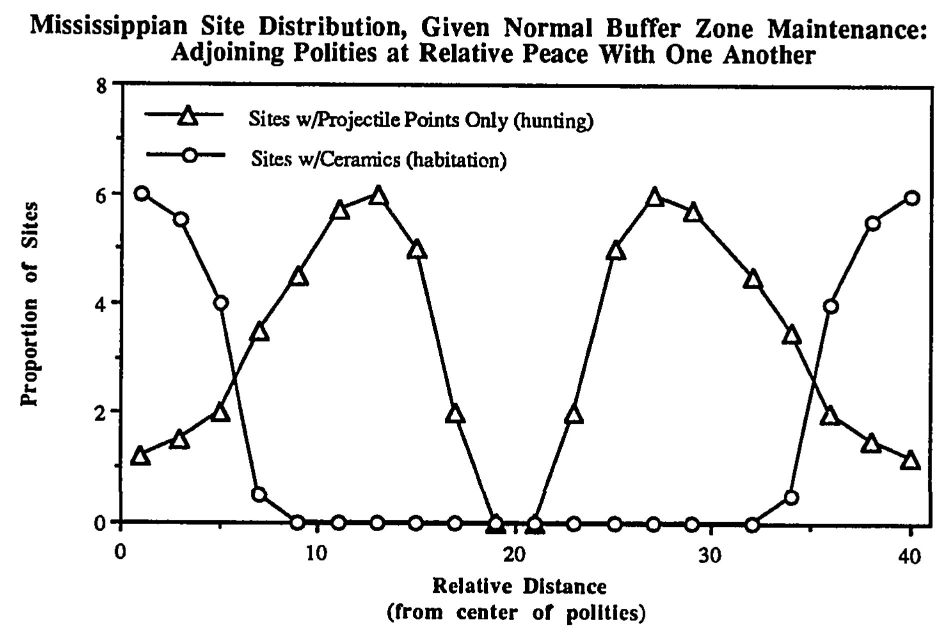


Figure 101. Hypothetical Artifact Distributions Created by the Operation of Buffer Zones Between Societies at Relative Peace With One Another, and in Intense Competition with One Another.

projectile points might be expected in intermediate areas, where the likelihood of conflict was greatest. This kind of behavior, parenthetically, would deplete animal populations and bring about additional economic hardship if these species were unable to rebound. The location of artifact-free zones (assuming comparatively peaceful conditions, with groups avoiding each other) or areas where increased numbers of projectile points occurred (assuming a higher level of conflict or competition) would, of course, depend upon the size and military capability of the polities in question, with the distributional centroids likely displaced toward the weaker polity.

Projectile Point Distributions. In an attempt to evaluate these ideas, the occurrence of Mississippian triangular projectile points across South Carolina was examined, using data from a state-wide survey of amateur collections (Charles 1981, 1983, 1986). The number of Mississippian projectile points in each collection was recorded by raw material, together with the total number of points in the collection (Table 15). The primary data used in this analysis are presented in Appendix C. A total of 4469 Mississippian triangular projectile points were present in the statewide sample of 85,102 points. The incidence of Mississippian projectile points, as a percentage of the total number of projectile points in each county, and as a percent of the total number of Mississippian triangular points in the statewide sample, was examined employing a series of west-to-east transects across the state (Figures 102, 103). Because county-level proveniences are used, and the data are derived from amateur collections, the resulting distributions are coarse-grained and to some extent nonrepresentative. The use of percentage values, that is, comparing the number of Mississippian points in a county to the total number of points collected in that county, and to the total number of Mississippian points collected statewide, were attempts to standardize the differing artifact totals in each county. While ideally the distribution of projectile points should be compared with ceramics, so few Mississippian sites with ceramics have been recorded in

Table 15. Mississippian Triangular Projectile Points in South Carolina: Summary Data by Raw Material Type and County.

Site Number	Mississippian Triangular Points								Total	Total	Percent	Percent of
	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Miss. pts	Points	Miss.	All Miss. ppts
Abbeville	0	0	0	6	0	0	0	0	6	306	(1.96%)	(0.13%)
Aiken	0	114	8	190	0	1	35	0	348	2658	(13.09%)	(7.79%)
Allendale	0	338	0	2	0	0	0	0	340	2986	(11.39%)	(7.61%)
Anderson	0	0	1	6	0	0	0	0	7	481	(1.46%)	(0.16%)
Bamberg	0	0	0	0	0	0	0	0	0	63	(0.00%)	(0.00%)
Barnwell	0	18	0	1	0	0	0	0	19	447	(4.25%)	(0.43%)
Beaufort	0	41	0	1	0	0	0	0	42	699	(6.01%)	(0.94%)
Berkeley	1	2	1	11	23	0	2	1	41	996	(4.12%)	(0.92%)
Calhoun	0	8	0	15	0	0	1	0	24	280	(8.57%)	(0.54%)
Charleston	0	2	3	0	3	0	2	0	9	348	(2.59%)	(0.20%)
Cherokee	0	0	0	2	0	0	2	0	4	514	(0.78%)	(0.09%)
Chester	0	0	0	37	0	0	115	0	152	27725	(0.55%)	(3.40%)
Chesterfield	0	0	2	22	0	1	52	0	77	2690	(2.86%)	(1.72%)
Clarendon	1	3	0	11	3	1	7	2	28	481	(5.82%)	(0.63%)
Colleton	0	42	0	1	0	0	0	2	45	581	(7.75%)	(1.01%)
Darlington	0	0	0	0	0	0	7	0	7	26	(26.92%)	(0.16%)
Dillon	11	0	0	6	1	0	23	0	41	691	(5.93%)	(0.92%)
Dorchester	1	12	0	6	2	0	3	21	45	436	(10.32%)	(1.01%)
Edgefield	0	0	0	5	0	0	1	0	6	58	(10.34%)	(0.13%)
Fairfield	0	0	0	93	0	0	8	0	101	3110	(3.25%)	(2.26%)
Florence	0	1	0	11	0	6	53	0	71	977	(7.27%)	(1.59%)
Georgetown	0	0	0	0	0	0	0	0	0	26	(0.00%)	(0.00%)
Greenville	0	1	64	265	10	0	18	2	360	2153	(16.72%)	(8.06%)
Greenwood	0	0	0	5	0	0	0	0	5	438	(1.14%)	(0.11%)
Hampton	0	1321	0	0	0	0	0	0	1321	8928	(14.80%)	(29.56%)
Horry	0	0	0	13	1	0	13	5	32	440	(7.27%)	(0.72%)
Jasper	0	8	0	0	0	0	0	0	8	65	(12.31%)	(0.18%)
Kershaw	0	2	1	150	0	0	244	0	397	6481	(6.13%)	(8.88%)
Lancaster	0	0	0	8	0	0	7	0	15	406	(3.69%)	(0.34%)

Table 15. (continued) Mississippian Triangular Projectile Points in South Carolina: Summary Data by Raw Material Type and County.

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Percent of All Miss. ppts
	Mississippian Triangular Points											
Laurens	0	1	8	292	0	0	7	0	308	3337	(9.23%)	(6.89%)
Lee	0	1	0	14	0	0	1	0	16	350	(4.57%)	(0.36%)
Lexington	0	27	4	111	0	1	17	0	158	4950	(3.19%)	(3.54%)
Marlboro	0	2	1	5	0	0	128	0	136	1101	(12.35%)	(3.04%)
McCormick, 38Mc4	0	0	0	0	0	0	0	0	0	105	(0.00%)	(0.00%)
Newberry	0	5	15	75	0	0	43	0	138	3212	(4.30%)	(3.09%)
Orangeburg	0	2	0	1	0	0	0	0	3	202	(1.49%)	(0.07%)
Pickens	0	0	6	1	0	0	0	0	7	417	(1.68%)	(0.16%)
Richland	0	11	2	44	0	0	36	0	93	1718	(5.41%)	(2.08%)
Saluda	0	0	0	0	0	0	0	0	0	44	(0.00%)	(0.00%)
Spartanburg	0	0	1	2	0	0	0	0	3	1220	(0.25%)	(0.07%)
Sumter	0	1	0	7	0	0	11	0	19	212	(8.96%)	(0.43%)
Union	0	0	2	10	0	0	5	0	17	1462	(1.16%)	(0.38%)
York	0	0	0	4	0	0	17	0	21	1192	(1.76%)	(0.47%)
Totals	14	1963	119	1433	43	10	858	33	4470	85012	(5.26%)	(100.00%)

the Piedmont away from the Savannah River as to preclude this option. This dearth of ceramic Mississippian components is, however, what would be expected if the interriverine area served as a hunting territory.

Comparatively large numbers of Mississippian triangular projectile points were observed in the interriverine area in the upper part of the state, in Laurens and Greenville counties, which encompass the headwaters of the Saluda River (Figure 102 middle, top). A much lower incidence of points occurred in the counties to either side, which lie along the Savannah and Broad rivers. This suggests that the upper Saluda may have been a hunting territory used by the Mississippian populations along the Savannah River as well as those around the Blair and McDowell centers along the Broad River in Fairfield and Chester counties, respectively (Ryan 1971a, 1971b; Teague 1979). The centers along the Broad River are thought to have been abandoned fairly early, by ca. A.D. 1400 (DePratter n.d.), and an appreciable buffer may have separated the major chiefdoms of the Savannah and Wateree/Catawba rivers during the later prehistoric era. While hunting appears most intense in the Saluda basin in the upper Piedmont, in the lower Piedmont the greatest incidence of projectile points away from the Savannah occurs in the vicinity of the Broad River, in Newberry and Fairfield counties (Figure 102 bottom). These concentrations are near the Blair and McDowell centers, and some of the points undoubtedly derive from these occupations. The area also lies roughly midway between the Savannah and the upper Wateree/Catawba, and may have been a zone of increased hunting or conflict for populations from these areas. In the late 17th and early 18th centuries the western South Carolina Piedmont was a well-documented hunting territory and buffer zone separating the Lower Cherokee towns on the upper Savannah and the Catawba peoples along the upper Broad and Catawba rivers (Milling 1940:231-232; 266ff). The Catawba word for the Broad River, *Eswa Huppeday*, in fact, means "(boundary) line river." Use of the western Piedmont as a buffer appears to extend well

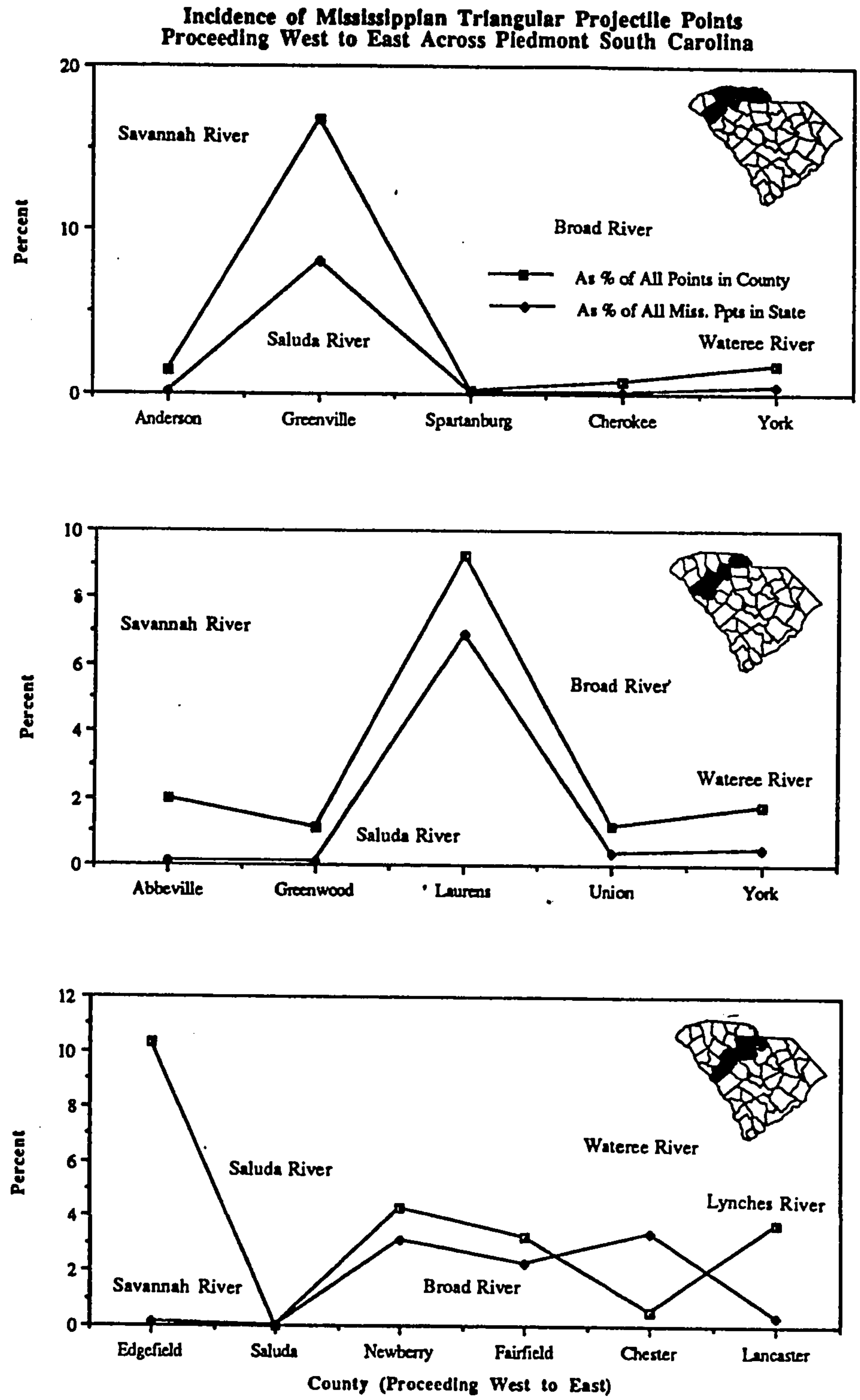


Figure 102. Incidence of Mississippian Triangular Projectile Points, By County, Proceeding East to West Across the South Carolina Piedmont.

back into the Mississippian period.

From the Fall Line south appreciably different distributions are evident (Figure 103). Mississippian projectile points occur primarily in counties near major river systems, and are much less common in counties in interriverine areas. In counties located along the Fall Line, for example, the greatest concentrations of Mississippian triangular points occur in Aiken, Kershaw, and Marlboro counties (Figure 103 top). The Mason's Plantation and Mulberry centers are present in the first two counties, along the Savannah and Wateree rivers, respectively, while extensive Mississippian in Marlboro County, along the Pee Dee River, is indicated from early Spanish accounts placing the province of Ilapi in this area (DePratter et al. 1984:73). The intervening counties have comparatively far fewer artifacts, suggesting hunting was predominantly around centers. In the central and lower Coastal Plain similar patterns are observed (Figure 103 middle, bottom). Traveling eastward, projectile point incidence is low in predominantly interriverine counties such as Bamberg, Orangeburg, and Lee, until it picks up in the vicinity of the Santee/Wateree and PeeDee rivers. The ethnohistoric evidence suggests that the Savannah River buffer, or the "desert of Ocute," was widest between the central Coastal Plain and the central Piedmont in the early 16th century, since chiefly polities were present in the headwaters along the Tugalo, and in the central and lower Coastal Plain along the Salkehatchie and nearby drainages (Hudson 1990). This may be indicated by the projectile point data. While the interriverine area of the upper Coastal Plain includes such lesser drainages as the Edisto and the Lynches rivers, the upper reaches of these streams do not appear to have been utilized as heavily as the major drainages in hunting/warfare activity. Interestingly, along the Savannah, Mississippian projectile point incidence is fairly low in Barnwell County, which lies between the counties containing the Mason's Plantation and Lawton centers (i.e., Aiken and Allendale), suggesting that even along the river systems of the Coastal Plain the use of

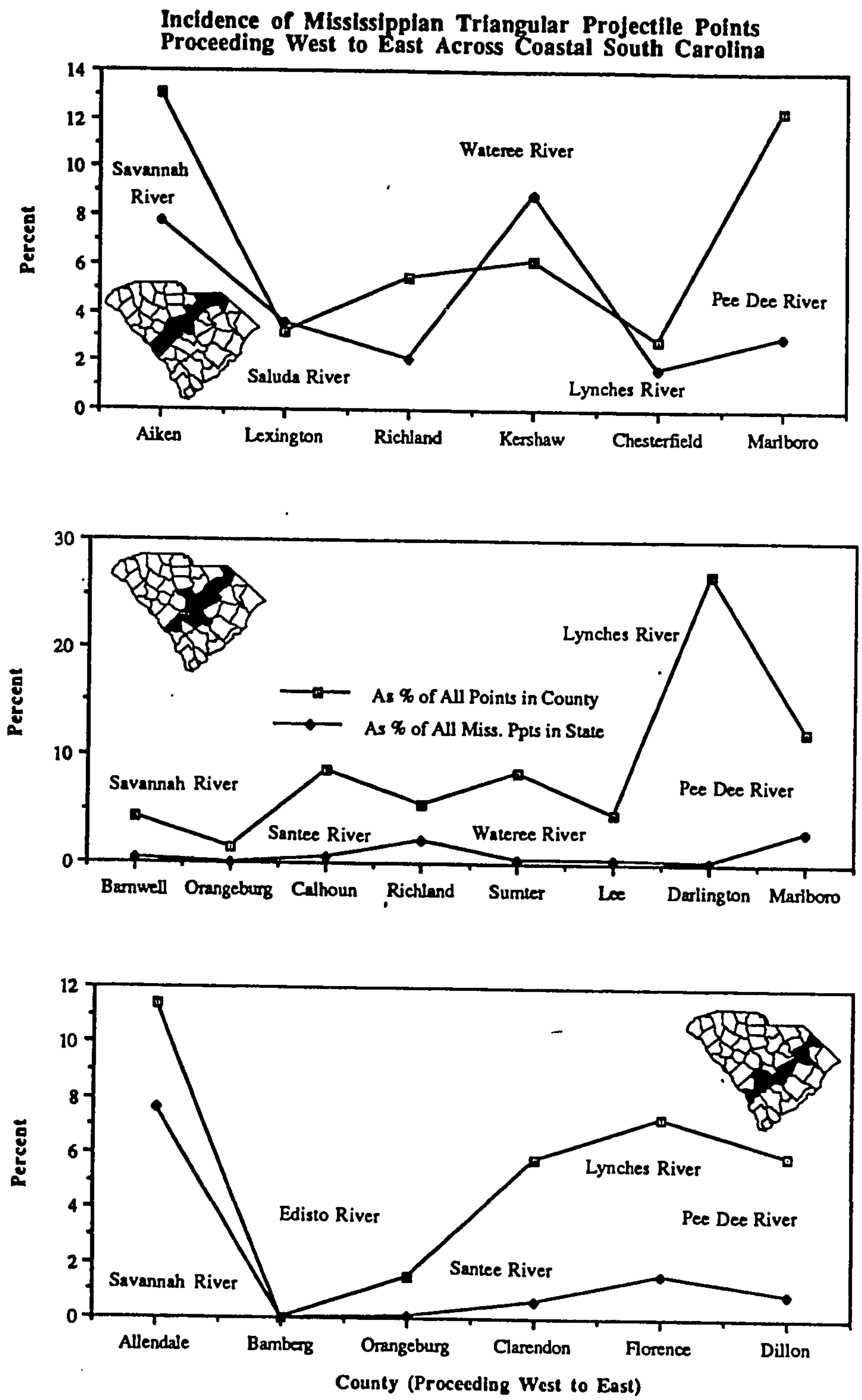


Figure 103. Incidence of Mississippian Triangular Projectile Points, By County, Proceeding East to West Across the South Carolina Coastal Plain.

projectile points was greatest in areas near centers.

Although Mississippian projectile points are comparatively infrequent along the lesser drainages of the southwestern South Carolina Coastal Plain, use of the area by Mississippian populations is indicated in the 16th-century Spanish accounts. The Pardo expedition documented the existence of the small Mississippian communities of Ahoya, Ahoyabe, Cocao, and Aboyaca in the southwestern Coastal Plain of South Carolina in the mid- to late 16th century, along the lower and middle courses of the Coosawatchie, Salkehatchie, and Edisto rivers (Hudson 1990). The Jesuit Juan Rogel's account (Chapter III), furthermore, indicates that coastal Mississippian groups such as the Orista dispersed into the interior, presumably along these same drainages, for up to nine months a year. These societies appear to have been relatively autonomous, simple chiefdoms that sometimes came together under the sway of a single chief (Waddell 1980:57-60). They were apparently separated from Mississippian towns along the Santee under the control of Cofitachequi, such as Guiomae, by an unoccupied buffer zone that encompassed portions of Orangeburg, and possibly Dorchester and Berkeley counties. To the south a comparable buffer encompassing the mouth of the Savannah River separated these 16th century groups from the Guale in the Sea Islands of Georgia. The low incidence of Mississippian triangular projectile points along the smaller drainages of the lower Coastal Plain, which were known to have been occupied in the 16th century, may indicate that these occupations were comparatively recent (perhaps facilitated by the abandonment of the Savannah?), or that hunting or warfare were not particularly intensive in this area. As we shall see in the discussion of climatic data below, some of the settlement of the interior in the lower Coastal Plain may have been an artifact of conditions during the period of Spanish observation.

While the available projectile point data are not, unfortunately, sufficiently fine-grained to permit evaluation of the specific models of buffer zone use advanced previously (Figure 101), they do reveal general patterns of Mississippian land use that can be evaluated, and refined, as our assemblage information increases. The triangular projectile point distributions from South Carolina indicate that the Piedmont and Coastal Plain portions of the state were utilized quite differently during the Mississippian period. In the lower part of the state, as we have seen, triangular projectile points occur primarily in counties near major river systems, while in the the upper part of the state, in the central and upper Piedmont, they occur in counties in predominantly interriverine area. These distributions appear to be closely tied to physiographic conditions and particularly to plant and animal resource distributions in the two areas. As noted previously, in the discussion of basin physiographic characteristics, hardwoods and wild game resources are widely distributed in the interriverine Piedmont, while in the Coastal Plain these resources tend to be more concentrated along the riverine terraces and swamps. The interriverine zone in the Coastal Plain is relatively impoverished in hardwood/game resources, and has been described as a "pine barren" (Larson 1980b). While for some time it has been known that Mississippian sites are infrequent along the minor drainages of the Coastal Plain, this pattern has been traditionally attributed to a preference for the rich floodplain areas of major drainages (Anderson 1975:189; Murphy and Hudson 1968). Instead, or in addition, these distributions may reflect the distribution of game resources, hunting patterns, and the operation of buffer zones.

Extralocal Lithic Raw Material Distributions. Raw material occurrence was also examined over the statewide Mississippian triangular projectile point sample, on the assumption that the incidence of extralocal lithic raw materials in assemblages might be a way of measuring interaction (i.e., trade or exchange) between peoples in different areas (Figures 104, 105). Perhaps not surprisingly, triangular points in most parts of the state were made of locally available raw materials. In counties in the southwestern Coastal Plain, for example, the vast majority of the Mississippian triangular points were made

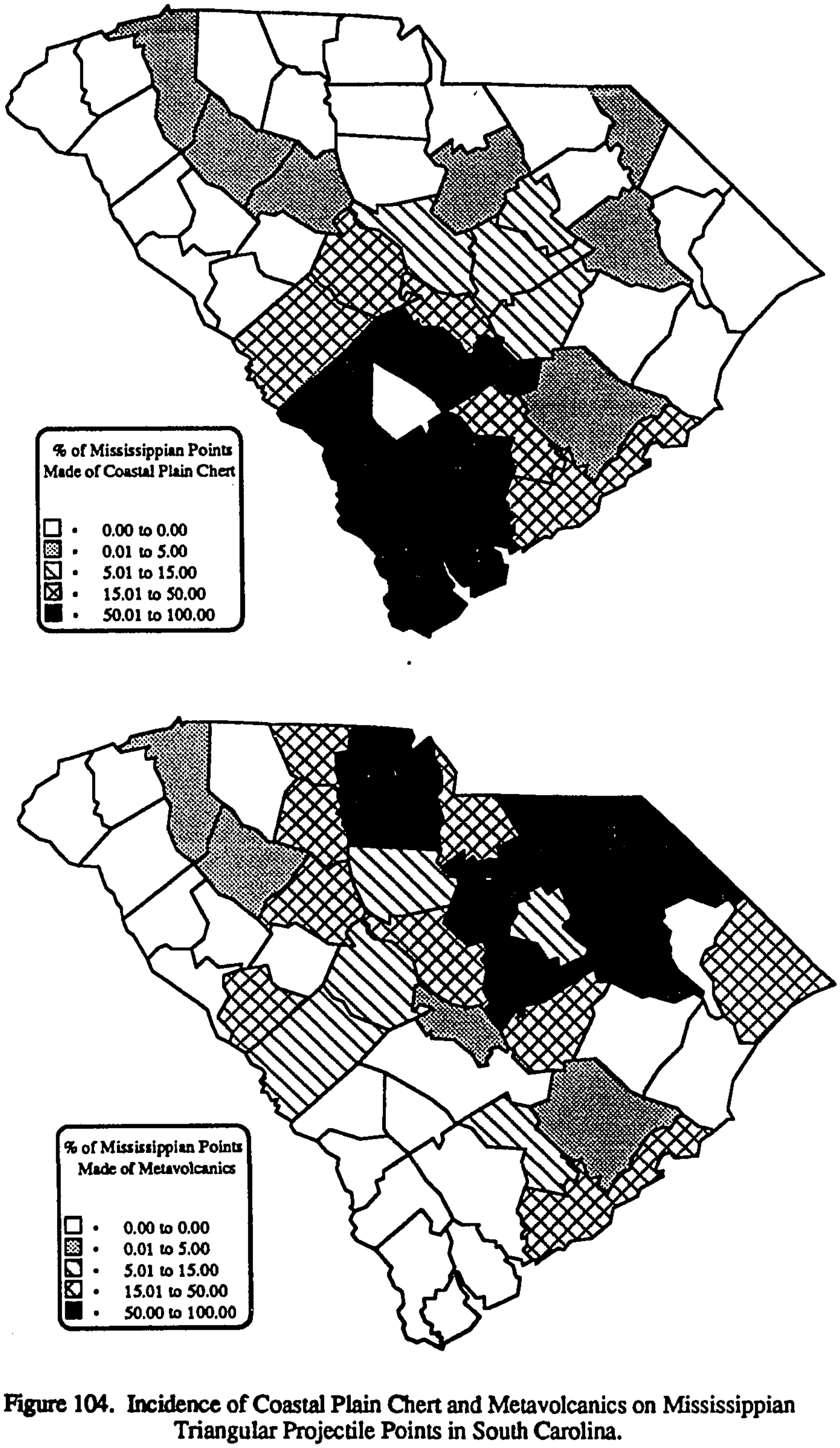
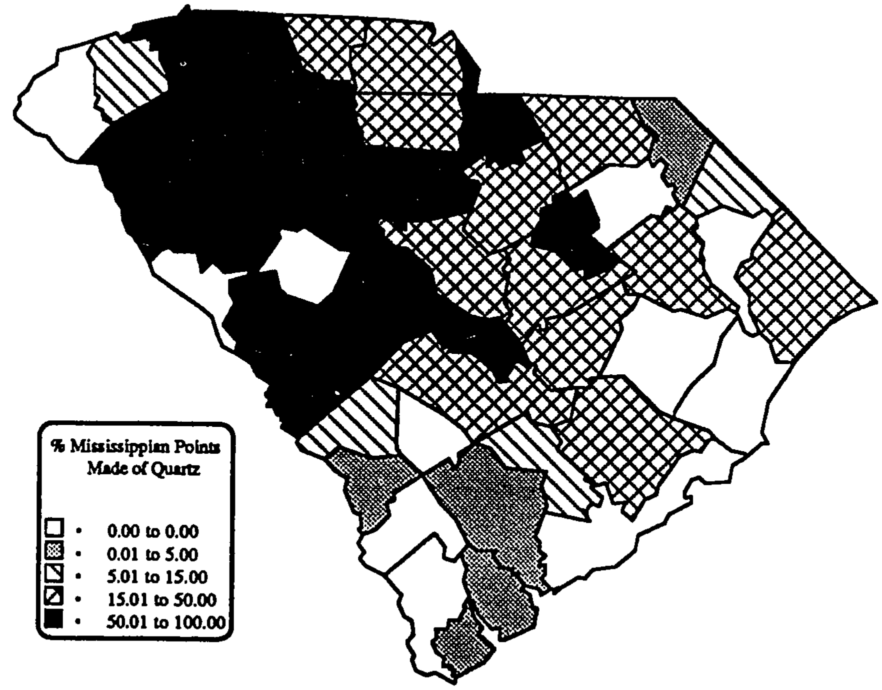


Figure 104. Incidence of Coastal Plain Chert and Metavolcanics on Mississippian Triangular Projectile Points in South Carolina.



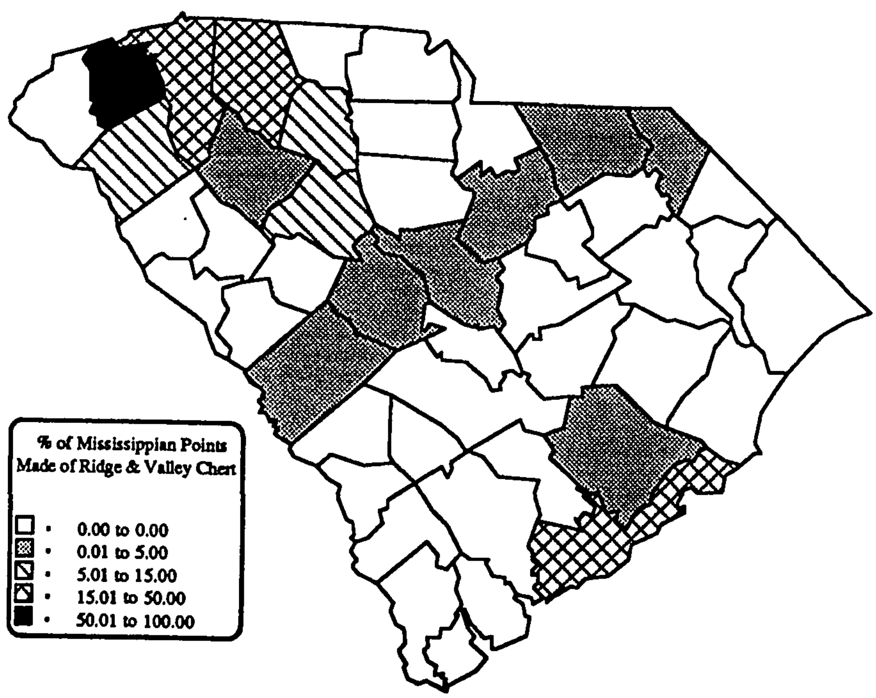


Figure 105. Incidence of Quartz and Ridge and Valley Chert on Mississippian Triangular Projectile Points in South Carolina.

from Coastal Plain chert, which crops out in Allendale County (Goodyear and Charles 1984), while in the eastern Piedmont and northeastern Coastal Plain metavolcanics, which occur in the Carolina Slate Belt of the lower Piedmont (Novick 1978), dominate assemblages (Figure 104). Quartz, which occurs widely in the upper part of the state (Novick 1978), dominates assemblages over much of the western Piedmont, while Ridge and Valley chert, from areas to the north and west of South Carolina (Goad 1979), is most common in the extreme northwestern part of the state and, to a lesser extent, along the Fall Line and in the lower Coastal Plain around Charleston (Figure 105).

The incidence of extralocal lithic raw material in each county Mississippian triangular assemblage is plotted in Figure 106. For the purposes of the present analysis, extralocal lithic raw materials were defined as those occurring outside of their physiographic province of origin. Thus, Coastal Plain chert is considered an extralocal raw material when it is observed in Piedmont or Blue Ridge assemblages, while quartz and metavolcanics, which originate in the upper part of the state, are considered extralocal raw materials when they occur in Coastal Plain assemblages. Ridge and Valley chert, which originates in northwest Georgia and eastern Tennessee (Goad 1979), is considered an extralocal material everywhere in South Carolina. While extralocal materials of Piedmont origin dominate Mississippian assemblages in the eastern Coastal Plain, along the PeeDee River, the reason for this is that there are no major stone sources in this area. The only major Coastal Plain source, in Allendale county, is farther away than Piedmont sources, and across several drainages.

Mississippian triangular points of extralocal lithic raw materials are common in the western Piedmont, an area previously interpreted as a buffer zone/hunting territories used by groups from along the Savannah and the Broad and Wateree rivers (Figure 106). The somewhat higher than usual incidence of projectile points made of extralocal raw materials in this area may, accordingly, reflect use by populations based at some distance.

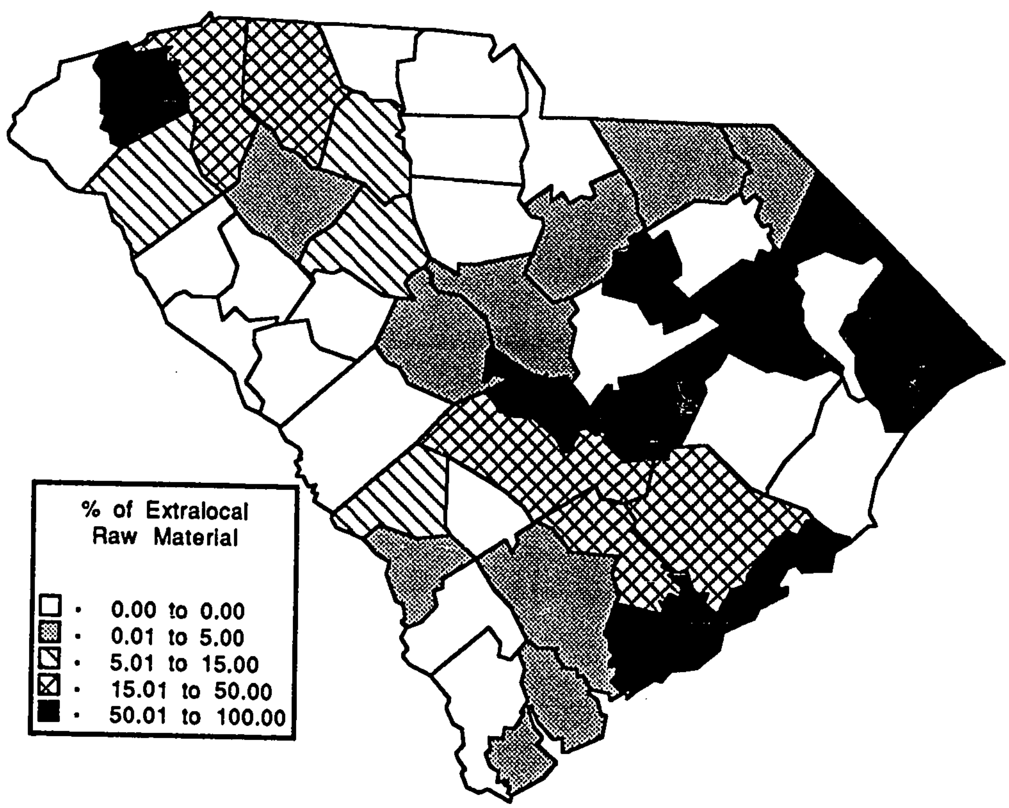


Figure 106. Extralocal Raw Material Incidence on Mississippian Triangular Projectile Points in South Carolina.

When specific raw material distributions are examined this inference is even more strongly supported (Figures 104, 105). A strip of three counties with points of Coastal Plain chert, for example, occurs in the area corresponding to the headwaters of the Saluda River. Points of Ridge and Valley chert and of metavolcanics, which seem to derive from the eastern Piedmont, are also found in these same counties. Both Ridge and Valley chert and Coastal Plain chert points are much less common in the counties to the west and east, along the Savannah and Broad rivers, while metavolcanic points are uncommon in the counties to the west, along the Savannah. These same counties along the upper Saluda also yielded large numbers projectile points (Figure 102), so the raw material distributions complement interpretations that the western South Carolina Piedmont saw use as a hunting territory.

The occurrence of a moderate incidence of points of extralocal lithic raw materials in the counties of the central Coastal Plain, to the south and west of the Santee/Wateree River, may also be reflect use of the area as a hunting territory. The Santee/Wateree drainage lacks major lithic raw material sources, however, so some of the patterning probably reflects the proximity of Piedmont raw materials, which were closer than the Savannah River chert quarries, and in the same rather than in a differing watershed. This explanation for the occurrence of extralocal raw materials in the interriverine zone, namely that they reflect proximity to sources rather than extensive use of the area in hunting, would appear more likely given the arguments raised previously about resource structure in the Coastal Plain. The distribution of Coastal Plain chert in Mississippian triangular assemblages drops off fairly evenly with increasing distance from the quarry areas in Allendale County. The material is uncommon in the vicinity of the PeeDee drainage, where Piedmont raw materials dominate assemblages, suggesting comparatively minimal interaction occurred between the populations of these areas.

Ridge and Valley chert is most common in the extreme northwestern part of the state, the area in closest proximity to its sources in Georgia and Tennessee, and falls off away from this area across the western Piedmont (Figure 105). The raw material has been noted on Lower Cherokee sites, and when small triangular points of black or gray chert are found in surface context in South Carolina, they are sometimes referred to as Cherokee points (see also Goodyear et al. 1979:184-187, 228-229). The western Piedmont of South Carolina was a hunting territory of the Lower Cherokee Towns in the early historic era (Milling 1940:266), so this distribution is not altogether surprising. Ridge and Valley chert also occurs in low incidence in Fall Line counties across the state, however, and in the two counties around Charleston, well away from the probable source area, and the settlements of the people who appear to have used it. This distribution probably reflects historic period exchange between the Cherokee Lower Towns and European settlements and trading posts. It may also illustrate the position of the Fall Line as a major transportation artery, along which unusual materials are likely to have flowed during both the historic period and the preceding late prehistoric era. Groups of Lower Cherokee are known to have visited or attacked European settlements along the Fall Line on the Savannah and Congaree rivers, and around Charleston (Milling 1940:144, 266-306). Trade with the Cherokee was intensive during the century prior to the destruction of the Lower Towns in the American Revolution, so the occurrence of triangular projectile points of Ridge and Valley chert well outside the western Piedmont is not an improbable occurrence.

The distributional patterns observed in the statewide collections sample, while subject to a number of limitations, do tend to be supported by data from areas where intensive survey work has been conducted. Along the Savannah River in the central Piedmont, for example, of 587 Mississippian small triangular projectile points found in the Russell Reservoir, almost all (N=569, 96.9%) were made of locally available raw materials (Anderson et al. 1988:25). The remainder were either of Coastal Plain chert or

Ridge and Valley chert, suggesting interaction was fairly minimal between the populations in the upper and lower portions of the drainage, and that extralocal raw materials were comparatively uncommon in the riverine zone. A similar pattern was observed on the SRS in the upper Coastal Plain, where almost every Mississippian small triangular was made from locally available chert (Sassaman et al. 1989). Until larger and more representative artifact samples can be obtained and examined the patterns presented here, and the inferences based on them, should be viewed as tentative. What is indicated, however, is that buffers were not merely empty areas occurring between groups, but were zones characterized by their own varying dynamics.

The Effects of Climatic Change as Measured by Dendrochronology

Theoretical Considerations. In an important study from the Southwestern United States, Burns (1983) examined long term relationships between climate, agricultural production, storage technology, and political organization, the latter measured in terms of extent of public construction. He first determined that a relationship existed between tree ring width measurements and crop yields during the early historic period, prior to the adoption of modern farming techniques and fertilizers. From this base, he extrapolated crop yields into the past employing dendrochronological cores from a series of sites (Burns 1983:106-114). Examining the paleoclimatic and crop data over the period from A.D. 652 to the historic period, Burns (1983:257-289) found that major public construction in the pueblos of the Four Corners area occurred during periods of extended or super abundant crop surpluses, and that little or no construction occurred during periods of scarcity.

Through formal modeling, Burns examined the amounts of agricultural food products that would have been available each year, given differing storage strategies, and using reconstructed crop yields derived from the dendrochronological data. Estimates of average annual production, consumption, and storage were made in terms of crop yield, that is, in bushels of corn or other crops (Burns 1983:158, 167). Years with above average rainfall were assumed to represent periods of food production above the needs of the population, or surplus, while years where rainfall was below average were assumed to represent periods of production shortfall, or food shortage. Production or crop yield/acre figures were calculated over the study period (A.D. 652-1968), and used to calculate the total amount of food reserves on hand for each given year. The effects of storage technology to accommodate production surpluses or shortfalls was then considered, in a series of analyses assuming storage capability equivalent to 1.5, 2.0, 2.5, 3.0, 3.5, 4.0, and 5.0 years consumption. For each model year, the amount of food already in storage (starting with zero) was added to the amount produced that year, calculated using the crop yield/tree ring calibration. The amount of food was compared to need (for food and seed), figured as equivalent to a normal year's production, and any surplus or shortfall calculated. Production surplus was put in storage, up to the given capacity, while production shortfalls were subtracted from the total food in storage. Once the upper storage limit was reached, any additional production was considered "excess surplus" that had to be used immediately, and was removed from the model. Deficits below zero, that is, when harvested and stored food reserves were exhausted, were also removed from consideration.

The results of the model were surprising. Famines, defined as "when the amount of food necessary to sustain a population at its normal level of consumption is lacking" (Burns 1983:186, 220ff), occurred, as expected, when production shortfalls exhausted stored food reserves. This happened not only during periods of severe drought, however, but could also come about through a series of slightly below-average production shortfalls that combined to gradually exhaust reserves. Two of the most serious famines documented in the Southwest, in fact, occurred when average production shortfalls were no more than about 25% below normal for an extended series of years, with only a few years of severe production shortfall (Burns 1983:202-207). This happened during the so-called "Great Drought" from A.D. 1276 to 1299, when many sites in the Four Corners area were abandoned, and during the period from A.D. 1772 to 1795, when severe famines were reported among the pueblos by the Spanish, particularly during the years from A.D. 1778 to 1780. Burns (1983:147) cautioned, however, that not all historic crop failures and subsequent famines in the Southwest could be attributed to drought. Warfare, frosts, mismanagement, or insect pests might also lead to crop failure, yet this would not be detectable using dendrochronological data.

Burns' analyses document how the storage capabilities of a society determine its ability to buffer production shortfalls. Accordingly, political organization and storage technology:

> intervene between crop failure and famines. A crop failure's impact is only immediate and severe when few or no food resources are left in storage to cushion the effect of that failure. The importance of the years immediately preceding a particular crop failure thus become obvious. It is during these preceding years that the amount of food reserves is determined [Burns 1983:149].

Obviously, a society that can store three years supply of food (i.e., enough to meet the current years demands, plus two extra years) would be able to weather shortfalls better than societies with only two years storage capacity (i.e., enough to meet the current years demands, plus one extra year). Storage history is thus a critical aspect of this equation, particularly the amount of stored food available at the start of a period of stress (Burns 1983:223). The order in which years of average, above average, and below average harvests occur is also critical, since different sequences of the same production figures can yield widely varying cumulative effects (Burns 1983:226, 239). Thus, if in a ten-year period five years had below average harvests, the long-term effect would be much more severe if they occurred in succession than if poor years alternated with good ones. Famine can thus occur following periods where annual production shortfalls were comparatively minor, but cumulatively great. A series of slightly below average years, given inadequate or insufficient long-term storage, could be cumulatively as devastating as more severe droughts (Burns 1983:141).

Burns' approach also permits the identification of favorable periods, when production was average to above average, and food stress was minimal. A few years of above average harvests, for example, would fill storage facilities to capacity. If favorable conditions persisted, and production consistently exceeded storage capacity, the excess surplus (surplus over and above the storage capacity of the society) could be used to finance public ceremonial and construction activity. Periods of public construction in the Four Corners area, which are known very precisely from dendrochronological analyses delimiting years when wooden construction members were cut, were most extensive during periods of extended surplus, and rare to nonexistent during periods of production shortfall (Burns 1983:215, 256, 264-289).

Paleoclimatic Analyses in the Savannah River Area. Over the past decade investigators at the Tree Ring Laboratory, Department of Geography, University of Arkansas, led by David Stahle, Malcolm K. Cleaveland, and John G. Hehr, have been exploring paleoclimatic conditions in the Southeast using bald cypress (*Taxodium distichum* L. Rich) annual growth ring data (Stahle et al. 1985a, 1985b, 1985c, 1988). Using historic weather records, a correlation between ring width and temperature and rainfall during the growing season has been documented in bald cypress, with monthly climate variables accounting for between 20 and 70% of the variance in growth width in the chronologies examined to date (Stahle et al. 1985a:530, 1985b:798). As part of this research program, a chronology was developed from 24 cores taken from 15 bald cypress trees in Four Hole Swamp, northern Dorchester County, South Carolina, and ring width data from it used to calculate June Palmer drought severity index (PDSI) values for the period from A.D. 1300 to 1984. These data, although unpublished, were graciously made available

(Malcolm K. Cleaveland, personal communication: 18 September 1987), and are presented in Appendix B.

The PDSI is a meteorological drought index calculated from monthly temperature and precipitation data (Palmer 1965). Calculated values, which range from -4 to +4, indicate departures from average soil moisture conditions, with the positive numbers indicating moisture surplus and the negative values moisture deficit (Stahle et al. 1985b:1517). Values from 0 to ±1 reflect average or near normal conditions (with 0 as the mean), ±1 to 2 mild drought or wetness, ±2 to 3 severe drought or wetness, and ±3 to 4 extreme drought or wetness. Using PDSI values calculated for the period from 1931 to 1983 in South Carolina (Karl et al. 1982, 1985), June PDSI values were correlated with tree ring indices from the Four Hole Swamp core over the same period. The Four Hole Swamp chronology used in this study accounted for ca. 25% of the variance in June PDSI values from 1887 to 1982 (1887 to 1930, variance explained was 40%; 1931 to 1982, variance explained was 15%; Malcolm Cleaveland, personal communication: 7 March 1990). These were then used to reconstruct PDSI values back into the past, to A.D. 1300, the extent of the dendrochronological record. The same procedures used to calibrate climatic and tree ring data from the Four Hole Swamp core are described and documented in a study from along the Black River in North Carolina (Stahle et al. 1988).

Primary PDSI data values from the Four Hole Swamp core for the interval from A.D. 1300 to 1600 are plotted in Figure 107. Because annual fluctuations are difficult to separate and interpret over this interval, the data were smoothed using a sliding or running average procedure (Rafferty and Norling 1986:6-16 to 6-18). In this technique, the middle value in each specified group of values (the smoothing width) is replaced by the average of these values. The Four Hole Swamp June PDSI data for A.D. 1300 to 1600, smoothed using a width of 15, is presented in Figure 108 (use of narrower smoothing intervals masked major trends). Because the Four Hole Swamp locality is

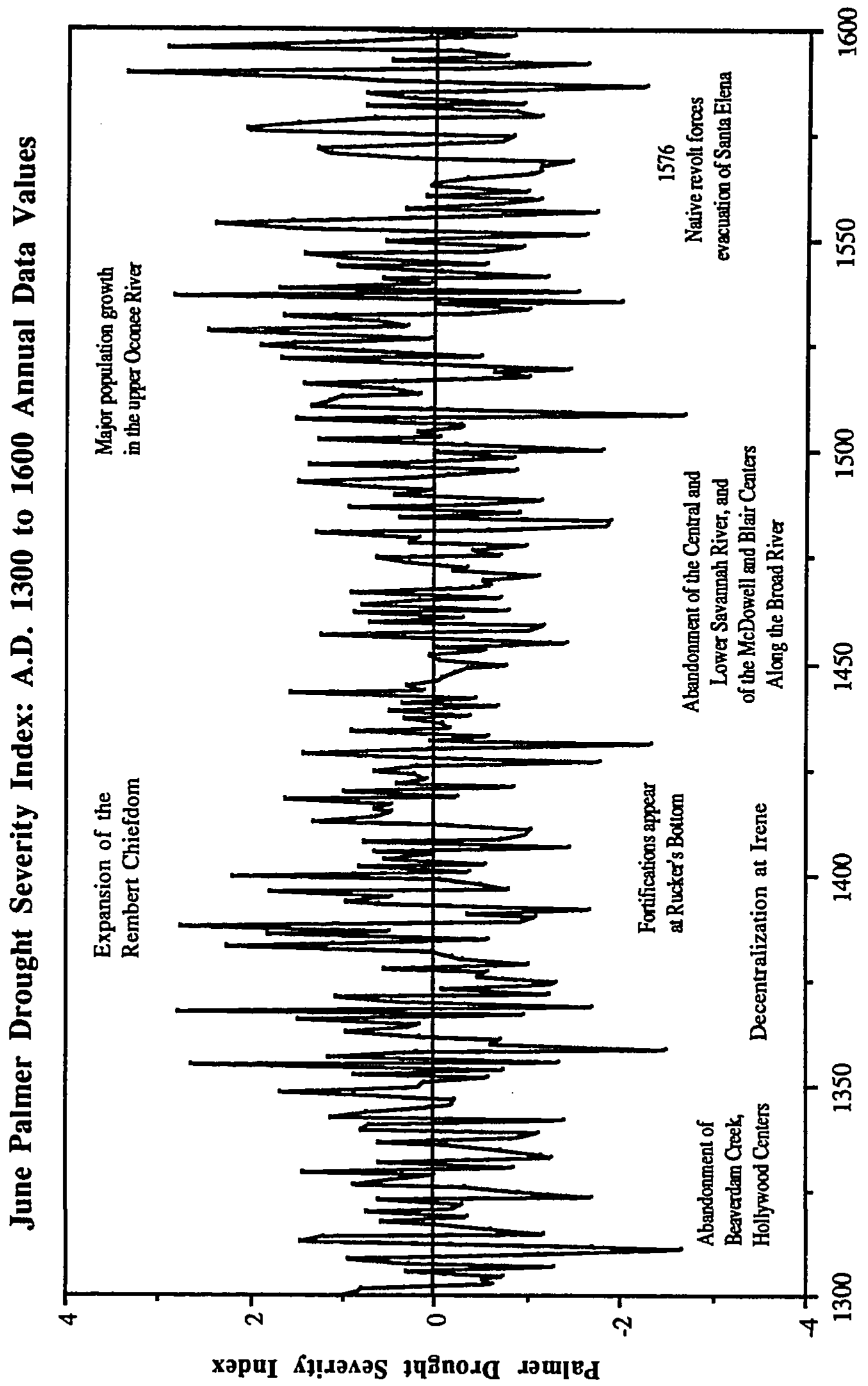


Figure 107. Four Hole Swamp June Palmer Drought Severity Index: A.D. 1300 to 1600 Annual Data Values.

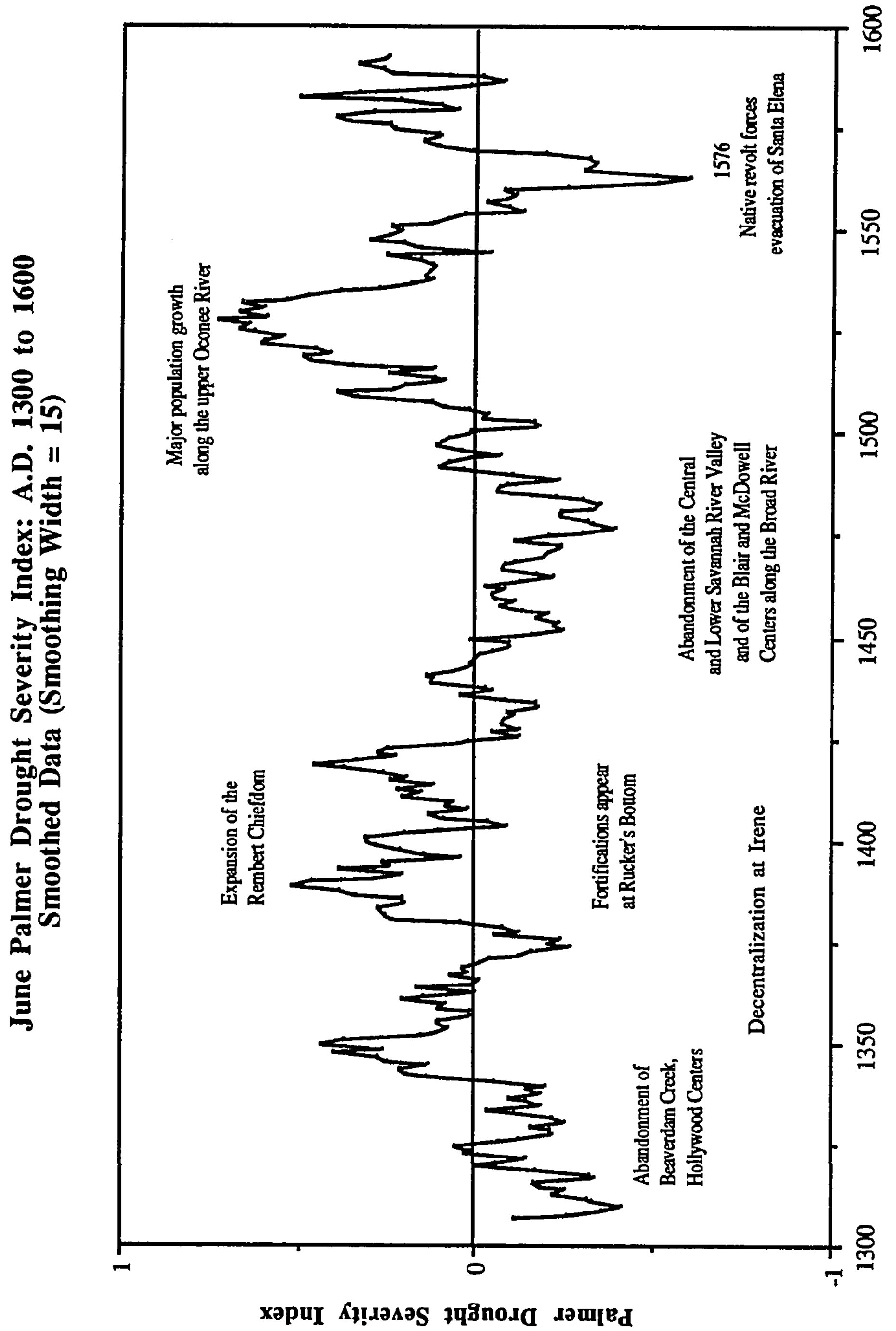


Figure 108. Four Hole Swamp June Palmer Drought Severity Index:
A.D. 1300 to 1600 Smoothed Data (Smoothing Width = 15).

only approximately 80 km due east of the Savannah River Valley, it is assumed that climatic conditions observed in the two areas are roughly comparable. This assumption will, of course, require testing as additional bald cypress data come available from the region (see below).

Examining both the primary and smoothed data from Four Hole Swamp for the interval from A.D. 1300 to A.D. 1600, periods of significant drought were inferred based on the presence of either three or more successive years of below average PDSI moisture values (after Burns 1983:259-260; primary data is in Appendix B herein) or, using the smoothed data (Figure 107), more extended periods (>10 years) of above or below average PDSI moisture values. While a number of minor fluctuations are evident over the 300-year period, there are four periods when lower than average PDSI values occur over fairly appreciable intervals (Figure 108; see also Appendix B for year-to-year values). These periods were: (1) from ca. A.D. 1300 to 1340 (extended negative PDSI values occurred during A.D. 1303-1305, 1310-1312, 1324-1326, 1333-1336), (2) from ca. A.D. 1370 to 1400 (extended negative PDSI values occurred during A.D. 1372-1377, 1379-1381, 1389-1392, and 1397-1399), (3) from ca. A.D. 1440 to 1485 (extended negative PDSI values occurred during A.D. 1446-1451, 1453-1455, 1468-1473, and 1482-1484), and (4) from ca. A.D. 1565 to 1575 (extended negative PDSI values occurred during A.D. 1565-1569 and 1573-1575). These are assumed to have been periods of unusual drought, when agriculture would have been stressed, and harvests below normal levels. More favorable conditions, with extended periods of average to above average moisture conditions, occurred between ca. A.D. 1340 to 1370, 1400 to 1450, 1485 to 1565, and from 1576 to 1600.

During many of these periods significant changes appear to be occurring in the Mississippian archaeological record from the Savannah River and immediately adjoining areas. The most prominent events observed archaeologically are noted on Figures 107 and 108. Before discussing these apparent associations between the paleoclimatic and archaeological records, however, it must be emphasized at the outset that the absolute timescale for the archaeological sites, occupations, and assemblages from the Savannah River Valley that is available at present is far coarser than the year-to-year timescale available from the dendrochronological record. While archaeological components in the basin are commonly dated to within ca. 100- or at best 50-year intervals, resolution finer than this is unavailable at present. Continued research, furthermore, will undoubtedly modify the intervals already established for sites and phases somewhat, as new assemblages and absolute dates are obtained. Accordingly, the inferences that follow, linking together specific aspects of the archaeological and paleoenvironmental record, should be viewed as hypotheses to be tested, observations that will be refined or rejected through future investigation.

The first period of extended drought conditions occurs from ca. A.D. 1300 to 1340. About this time a number of small mound centers are inferred to have been abandoned throughout the drainage, including Hollywood, Lawton, and Red Lake in the Coastal Plain, and Beaverdam Creek, Tate and Fortson in the central Piedmont. At the mouth of the river a century or more of continuous mound construction apparently came to an end at Irene. Two major multi-mound centers are thought to have emerged about this time, at Rembert and Mason's Plantation. The abandonment of the smaller centers and the emergence of more complex chiefdoms may have been been brought about, at least in part, by the poor climatic conditions. More complex organizational forms may have been needed to handle the greater uncertainty in the agricultural system.

After A.D. 1340 favorable conditions occurred for about 30 years. The Irene site, which fell into disuse during the previous period, underwent something of a renewal about this time, although there is no evidence that a chiefdom level of organization reappeared. This period is thought to have been the heyday of the presumed complex chiefdom centered at Mason's Plantation, and if so, the elites at this center may have stifled political ambitions among populations in the lower drainage. Evidence for the reoccupation or re-emergence of centers occurred during this same general interval in the upper part of the basin, at the Tugalo site. The re-emergence of a Mississippian center in the headwaters area may have been spurred, in part, by more favorable conditions throughout the valley.

Around A.D. 1370 climate deteriorated again for about a quarter of a century. Occupation apparently ceased at Mason's Plantation, and by ca. A.D. 1400 Tugalo and Rembert were the only platform mound centers in use in the entire basin. Fortifications appeared at the Rucker's Bottom site sometime around A.D. 1400, and this may have also been the period when major fortifications were erected around the rotunda and mound at Irene. With the fragmentation of the complex chiefdom at Mason's Plantation, the chiefdom centered at Rembert was the only major polity in the basin.

Favorable climatic conditions were again present throughout most of the first half of the 15th century, from A.D. 1400 to 1440, and it is during this period that the Rembert chiefdom, presumably encompassing the Mississippian populations of the central Piedmont, apparently reached its peak. In the lower part of the basin the populations using the Irene site appear to have dominated the landscape, with evidence for their interments, in the form of urn burials, noted as far inland as Hollywood and Stallings Island. No new chiefdoms appear to have emerged during this period anywhere in the valley, however.

A pronounced and extended deterioration in climate took place from about A.D. 1440 to 1485, and it is during this time that the most dramatic change in the regional political landscape occurred. Mississippian chiefdoms disappeared throughout the central and lower Savannah River Valley, and possibly in the nearby Broad River drainage as well, where the Blair and McDowell sites were abandoned. These depopulations may have been brought about, in part, by this long interval of decreased rainfall, which probably had a marked effect on crop yields and surplus production, affecting in turn the ability of local chiefly elites to finance their political systems. In the upper part of the Savannah basin the Tugalo site remained occupied, however, and new centers appeared about this time or slightly later at Chauga and Estatoe. Occupation of the headwaters, in fact, continued seemingly uninterrupted until the later 18th century. Average annual rainfall in the headwaters area is almost twice that in the lower portions of the drainage (Kronberg and Purvis 1959:7), however, and it is possible that this pattern of greater annual rainfall would have precluded or ameliorated what would have been drought conditions lower in the basin.

After ca. A.D. 1485 an extended period of favorable moisture conditions occurred, lasting for almost three-quarters of a century. Unfortunately, there do not appear to have been any Mississippian populations in the central and lower Savannah River basin to take advantage of these conditions. Mississippian populations are reported from the Coosawatchie and the Salkehatchie rivers during the early and middle sixteenth century, close to where the Four Hole Swamp core was taken, and it is possible that they were taking advantage of favorable local conditions. During this same period a marked expansion in population, particularly into upland areas, occurs in the upper Oconee River Valley (Kowalewski and Hatch 1988), and it is also probably at this time that the chiefdom of Cofitachequi achieved regional prominence (Hudson 1990). All of these events would have been facilitated by an extended period of favorable climatic conditions.

A final extended period of low PDSI values occurred from 1565 to 1575, with lower than average rainfall recorded during the years 1565 to 1569 and 1573 to 1575. This period corresponds almost exactly with the first ten years of Spanish settlement at Santa Elena (1565-1576), which was located on Paris Island some 60 km southwest of the Four Hole Swamp sampling locality (South 1980). Our best account of climatic conditions comes from April 1566, when the Spanish first attempted to settle Santa

Elena. At this time the land was undergoing a severe drought that had greatly reduced native food supplies. Descriptions of the native Orista included the observations that "there was little food in the land, as there had been no rain for 8 months" and that "their cornfields and farming lands were dry, whereat they were all sad, on account of the little food they had" (Merás in Quin 1979:492, 493; see also Conner 1928:177, 210). Although Menéndez de Avilés stationed one of his officers and some twenty men with the Orista, they were in "great fear of lack of food" since "even if the Indians had been willing to give their food to Estébano de las Alas and his men, they had none, for it had not rained for many months" (Merás in Waddell 1980:147). These records lend credence to the PDSI data from Four Hole Swamp, which indicate the period from 1565 to 1569 was particularly dry. Further use of Spanish colonial data to evaluate the dendrochronological evidence would doubtless prove fruitful (e.g., Burns 1983:12-13; Hawley 1941:66).

The colony at Santa Elena had a precarious existence in its early years, something that was unquestionably a result of the poor climatic conditions. The first decade of settlement at Santa Elena, in fact, was the driest period of the entire 16th century, although the Spanish could have had no idea how atypical these conditions were. Food was scarce during the first years of settlement and its acquisition preoccupied the local authorities (Connor 1928). The Pardo expeditions were sent into the interior at this time not only to further exploration but also to relieve the colony of the necessity of feeding his men. During Pardo's second expedition from 1567 to 1568 conditions were so desperate at Santa Elena that Pardo was ordered to bring food from the interior, and food shortages in the colony were at least part of the reason why he dispersed his forces into a series of small forts along his route (Hudson 1990:45; 152ff). These forts were all destroyed, and their companies massacred, within a few months of their establishment.

Native rebellions during this period, the records indicate, were brought about by demands the Spanish placed on local populations for food and services. These would have been an added imposition given the likelihood that the agricultural system was under considerable stress. A minor rebellion occurred in 1570, for example, when the authorities at Santa Elena, short on food, "ordered three or four caciques, among them Escamacu, Orista, and Hoya, to bring some canoe loads of maize to Santa Elena" (Rogel 1570, cited in Waddell 1980:149). Rogel, a Jesuit living with the Indians, abandoned his mission at this time, knowing the Indians would not react well to these demands. When the Indians failed to provide the corn, the Spanish sent soldiers to their village, and rebellion ensued until the caciques were appeased with gifts. Although no mention of climatic conditions or amount of food on hand is given in Rogel's account, the reaction of the natives suggests they had little to spare, which would have likely been the case if, as indicated by the dendrochronological data, the previous four years had been particularly dry.

In 1576 a massive native revolt forced the temporary abandonment of the Santa Elena colony. The 1576 rebellion, called the Escamacu War, was brought about by the Spaniards' continued demands on the local population, as well as a general pattern of mistreatment. Events came to a head when the authorities at Santa Elena attempted to quarter troops, or least obtain food from the Escamacu, shortly after they had executed an Indian in front of the assembled caciques in direct violation of a promise to do no harm to their people (Waddell 1980:171-182). A party of twenty-two soldiers sent to Escamacu was massacred when the cacique tricked them into putting out their arquebus fuses. Emboldened by this success, the Indians along the Georgia and South Carolina coast rose in revolt. Laying siege to Santa Elena, in fairly short order they forced the abandonment of the colony. Santa Elena was re-established in 1577, and for the next two years the Spanish practiced a scorched earth policy against the coastal groups until they sued for peace. Although climatic conditions were more favorable over the reminder of the century, the colony was abandoned in 1587. The effect of these favorable conditions on the native populations is unknown.

Modeling Stored Food Supplies in the Savannah River Area. To further examine the relationship between the Four Hole Swamp paleoclimate data and events in the Mississippian archaeological record from the Savannah River Valley, analyses were conducted to determine the amount of agricultural food that could have been in storage, and years when shortfalls or excess surplus occurred, over the interval from A.D. 1300 to 1600. Two separate analyses were run, assuming a native storage capacity equivalent to two and three years normal harvest, respectively. To do this the Four Hole Swamp PDSI data values were assumed to reflect crop yields directly for the years in question. That is, all years with above average rainfall were assumed to have yielded above average harvests, while all years of below average rainfall yielded below average harvests. Critical to such an analysis, of course, is the assumption that periods with below average and above average PDSI values actually reflected periods with decreased or increased crop yields. It must be stated at the outset that while rainfall and crop productivity are undoubtedly linked, the possibility exists that this relationship is not direct or linear. Periods of too much rainfall, for example, may be as detrimental to crops as periods of too little rainfall. Additionally, cultural factors may affect crop production, such as the kind of political organization that was present, or whether communities were at relative peace with one another. In the present analysis, however, a direct relationship between rainfall and crop yield was assumed.

Relative crop yields were calculated using the PDSI data values for each year. The PDSI values over the period from A.D. 1300 to 1600 were divided by two, to give a converted range of from -2 to +2. Values below -1 were assumed to reflect years of total crop failure. These would have been years of severe to extreme drought in the Palmer classification. Years with values between -1 and 0, with mild drought conditions, were assumed to reflect years when crop production was below average. The converted PDSI value was accepted as indicating the amount of this shortfall. The shortfall range only goes only to -1 because numbers lower than this would mean more crops failed than were planted, an obvious impossibility. The same relationship was assumed on the positive side, with values above 0 assumed to represent years where production was above average. The amount of harvest surplus was allowed to range up to 2 (the maximum value allowed), since crops from bountiful harvests could be stored or otherwise used.

To examine the effects of storage, and long-term climate history, crop production values were summed from year to year over the study interval. Years with 0 values were assumed to represent average harvests, and were assigned a value of 1, which was also assumed to represent normal annual consumption. Storage capability was assumed to be equivalent to two or three average harvests, allowing for one years or two years reserve above normal use. Any production above storage capacity (>2 or >3, depending upon the analysis) was classified excess surplus. The first model, assuming a storage capacity equivalent to two normal harvests, is assumed to have been the most likely. While it is possible that local Mississippian societies maintained more than one year's reserve, given the Southeast's moist climate maintaining corn or other foodstuffs for longer than two years probably would have been difficult. Ethnohistoric accounts quantifying crop reserves are rare, but enough references exist to indicate that a full year's reserves could have been maintained, particularly in the complex chiefdoms observed during the 16th century (DePratter 1983:165; Swanton's 1946:256-265 accounts of harvests rarely lasting a year almost all come from 17th or 18th century sources, well after most of the region's complex chiefdoms had disappeared).

Beginning in A.D. 1300, and assuming one year's crops were in storage, the harvest was calculated for each successive year. Shortfall values (ranging from 0 to -1) were subtracted from the running total, while surplus values (ranging from 0 to +2) were added to it. The totals were never allowed to drop below -1 or above +2 (or +3 in the case of the second analysis) for any given year since, as noted previously, values below -1 were an impossibility, while values greater than +2 (or +3) exceeded storage capacity. When the surplus was greater than storage capacity (i.e., >+2 or +3, depending on the analysis), it was declared "excess surplus" and the amount noted. Converted PDSI values, amounts of annual surplus or shortfall, the running total surplus in storage (if any), and the amount of excess storage for each year from A.D. 1300 to 1600 for the two models are presented in Appendix B.

The results of these calculations indicate the extent to which the storage technology and strategy presumably in use could have buffered the Mississippian populations of the Savannah River Valley from environmental perturbations. The quantity of crops potentially in storage each year from A.D. 1300 to 1600, given a storage capacity equivalent to two normal harvests, is presented in Figure 109, while the quantity given a storage capacity equivalent to three normal harvests are given in Figure 110. The negative values in the figures indicate the amount of shortfall that would have to be made up from other food sources, since in these cases the actual amount of stored food would have been zero. The negative values are included to indicate the severity of the shortfall, which could range up to an entire year's consumption (-1), if a total crop failure occurred when no reserves were in storage. Since the first model appears the more plausible of the two, the results from it are discussed at length.

Even with a storage capacity that allowed for a year of reserves above normal consumption, severe shortfalls lasting up to several years or more would have occurred during each of the four major periods of drought that occurred between A.D. 1300 to 1600 (Figure 109). The periods between A.D. 1300 and 1350, and A.D. 1440 and 1485 were particularly grim, with 11 successive years of shortfall during the first interval and 23 successive years of shortfall in the second. It is thus not altogether surprising that a series of small chiefdoms disappeared during the first period, and that the entire lower

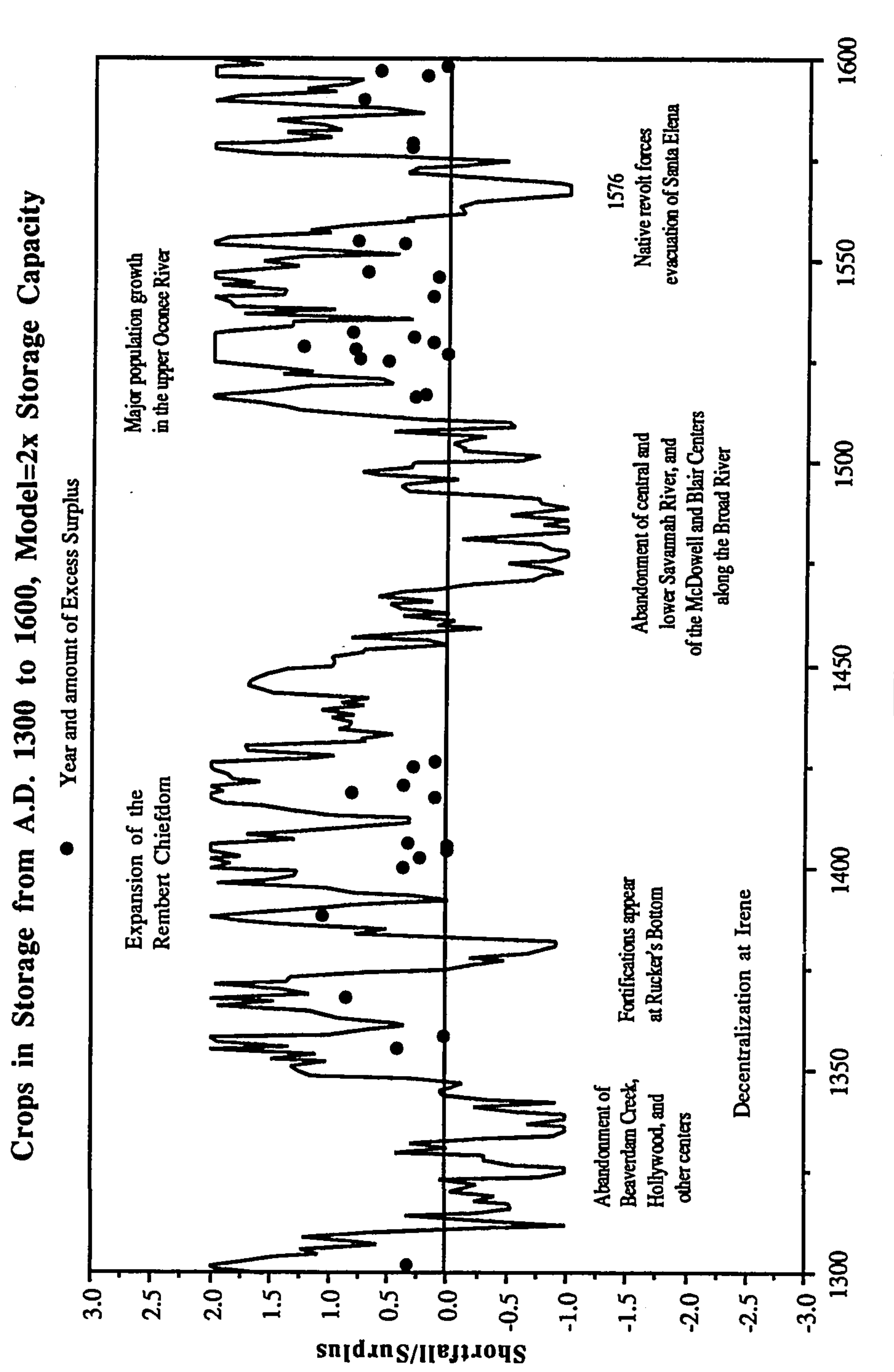


Figure 109. Crops in Storage, and Years of Shortfall or Excess Surplus, Assuming a Storage Capacity Equivalent to Two Normal Harvests: A.D. 1300 to 1600.

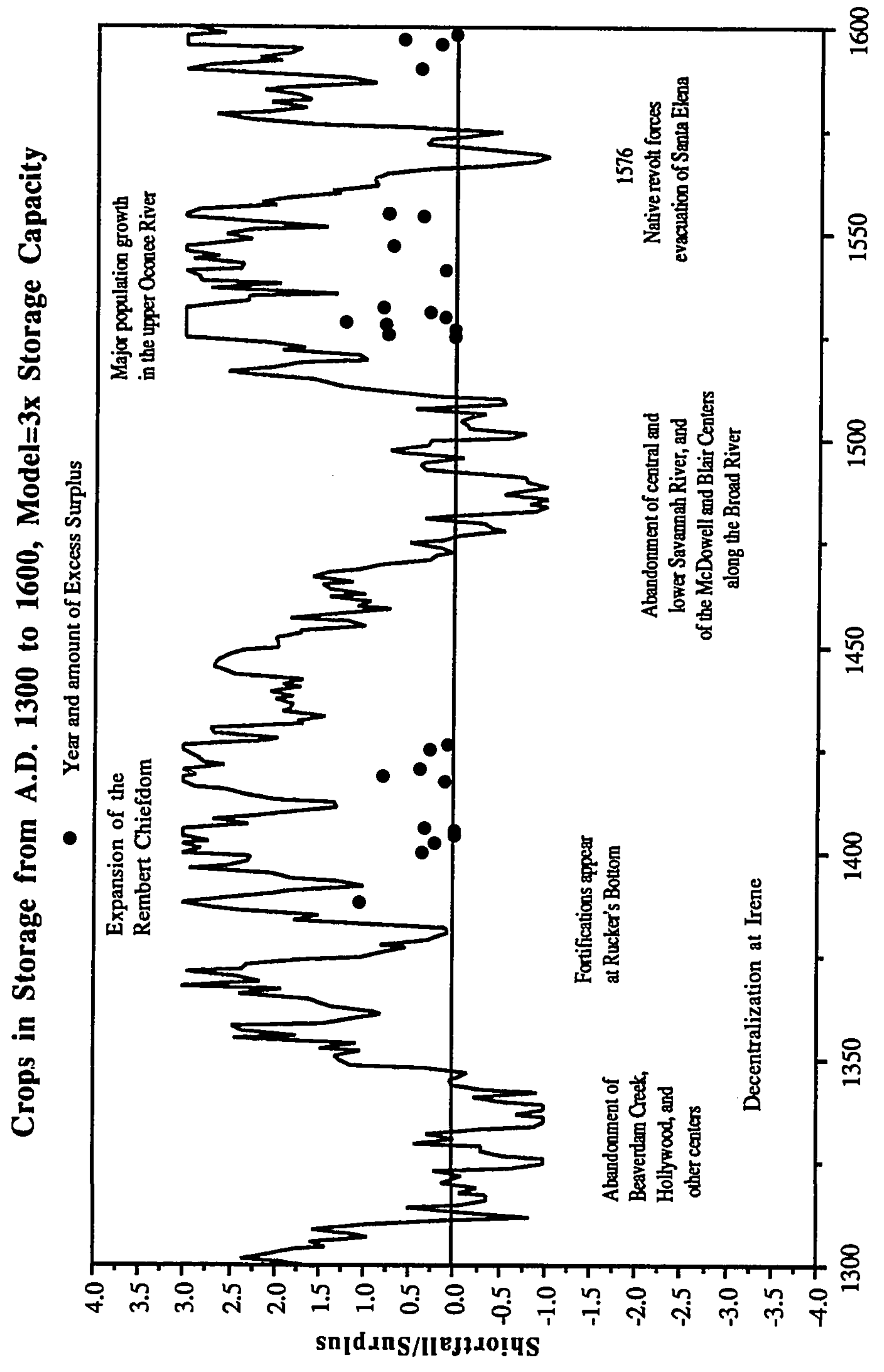


Figure 110. Crops in Storage, and Years of Shortfall or Excess Surplus, Assuming a Storage Capacity Equivalent to Three Normal Harvests: A.D. 1300 to 1600.

valley was abandoned during the second period. While the period after A.D. 1440 was perhaps the worst, the earlier period appears to have been almost as bad. From A.D. 1311 to 1343, in fact, crop surpluses occurred in only four years.

Storage would have greatly ameliorated the effects of the period of decreased rainfall observed from A.D. 1370 to 1400, to the point that shortfalls would have occurred during only one seven-year period, from A.D. 1376 to 1382. Thanks to the bounty of the immediately preceding period, when harvests were good, Mississippian societies could have entered the period from A.D. 1370 to 1400 with full storage bins, enabling them to make up shortages for the first several years of the drought. After A.D. 1382 over the remainder of this interval, furthermore, enough good years occurred to overcome intervening periods of decreased rainfall. This does not mean that the Mississippian societies present in the basin escaped stress completely, however, for the period from A.D. 1376 to 1382 would still have been a time of great privation. The appearance of fortifications about this time at Rucker's Bottom and the probable expansion of fortifications at Irene suggests warfare or raiding also increased, probably as local groups sought to obtain food.

Storage would have deferred, but not overcome, privation during the final extended period of decreased rainfall, from A.D. 1565 to 1575. From A.D. 1556 on, furthermore, rainfall had been only slightly above average to considerably below average, so Mississippian societies would have had few reserves to dampen the effects of the extended drought that began in 1565. From 1562 to 1571, in fact, crop shortfalls occurred every year. The colonization of the Santa Elena colony could thus have not taken place at a worse time, from the perspective of the Indians, upon whom the Spanish were placing demands for food, and for the Spanish themselves. The observation of the missionary Rogel (1570, cited in Waddell 1980:147-153) that the Orista had spent much of the year wandering since "time immemorial" may have instead been an artifact of the period of his mission, which encompassed the worst part of this decade of drought, and occurred at a time when the natives had probably experienced greatly reduced harvests, if not total crop failure, for several years running.

The model indicates that the inferred Mississippian storage strategy (i.e., equivalent to two normal harvests) enabled local populations to overcome both isolated crop failures as well as a number of consecutive years of slightly below average harvests. This was sufficient to ensure adequate or better food supplies over two-thirds of the years (N= 211, 70.3%) between A.D. 1300 and 1600. From 1383 to 1470, in fact, no years of shortfall would have occurred if this storage strategy was in place. When extended periods of drought did happen, however, such a strategy would have done little more than defer periods of privation. What this did do, significantly, was give these populations more time to switch over to other food resources, since the lead time between the onset of reduced rainfall and actual food shortages could have been several years. For example, while 6 of 9 years between A.D. 1303 and 1309 had below average PDSI values, and hence harvests, the effects of storage were such that agricultural food shortfalls did not begin until 1311. The same is true of the period of extended drought that began in the mid-15th century. Even though below normal PDSI values occurred in 17 of the 25 years between A.D. 1446 and 1470, serious crop shortfalls did not begin until 1470. Even the onset of food shortages during the less severe drought that occurred in the late 14th century was deferred four years, from A.D. 1472 to 1476.

The same data also indicate extended periods when food was relatively abundant, particularly during the 87-year period from A.D. 1383 to 1470, when no food shortage occurred, and excess surplus was produced in 11 separate years (Figure 109). Years with excess surplus, following arguments by Burns (1983), would have likely seen increased feasting and public construction. The early 15th century saw the emergence of Rembert as the dominant Mississippian center in the basin, something that was perhaps facilitated by the unusually extended period of favorable climate. Because no appreciable climatic downturn occurred during this period, however, the deterioration that occurred after A.D. 1440 may have caught local populations comparatively unprepared. Given years of repeated surplus, less attention may have been paid to stored food reserves, something that would accentuate food shortages when they did occur, and magnify the crisis that led to the abandonment of the area shortly thereafter.

From A.D. 1511 to 1561, following the period of decreased rainfall during the mid-to-late 15th century, climate was again favorable for agriculture for an extended period in the Savannah River Valley. Had Mississippian populations been present, the preferred model indicates surpluses would have occurred every year, and excess surplus would have been present in 15 separate years, including eight years in a row from A.D. 1525 to 1532 (Figure 109). The fact that no one was living in the area suggests factors other than environmental conditions were constraining settlement. Parenthetically, the year De Soto visited Cofitachequi, on the nearby Wateree River, the model indicates the Indians would have had extensive food reserves, with storage facilities close to capacity (Appendix B). The generosity that De Soto received from this society (Vega in Varner and Varner 1951:300-301), may well have been genuine rather than forced, since the chiefdom could have had plenty of food reserves.

The second analysis, calculated assuming a storage capacity equivalent to three normal harvests, yielded generally similar results (Figure 110). The extra storage capacity did defer the onset of food shortages and reduce the initial shortfalls that were experienced during three of the four major periods of stress noted previously, in the early 14th, mid-15th, and late-16th centuries. Since these periods were characterized by long intervals of successive poor harvests, no practical storage capacity would have been enabled the local populations to overcome this stress. The increase in capacity from two to three years harvest would have been sufficient, thanks to the bounty of the immediately preceding period, to allow local populations to avoid shortfalls during the interval from A.D 1370 to 1400. That is, food shortfalls observed over the seven-year period from 1376 to 1382 in the first model were avoided in the second (cf., Figures 109, 110). Given the evidence for stress observed in the archaeological record at this time, notably the appearance of fortifications at Rucker's Bottom and possibly at Irene, and the apparent collapse of the polity centered at Mason's Plantation, it is unlikely that this higher level of storage was actually present.

Research linking paleoclimatic data to the archaeological record is currently in its infancy in the South Appalachian area, and a great deal of research will be required to bring a high level of confidence to our interpretations. Refinement of the archaeological time scale is a particularly critical area, since at present our placement of assemblages is, at best, to within ca. half-century intervals. Many more absolute dates will be needed than are available at present if we are to make linkages between the archaeological and paleoclimatic records with any degree of precision. In addition to employing radiocarbon determinations in the refinement of cultural chronology, archaeologists locally must take advantage of any and all possible dating procedures (i.e., archaeomagnetic dating; hydration/patination-based dating procedures; correlation with palynological and geoarchaeological/geomorphological signatures, etc.). As this study clearly indicates, dendrochronology should come to to be an extremely precise dating tool for archaeologists in the Southeast, providing sufficiently large enough pieces of carbonized or uncarbonized wood can be recovered in archaeological context. Dating should be possible if as pieces of wood with as few as ca. 20 growth rings can be recovered (David W. Stahle, personal communication, 3 February 1990).

While the paleoclimatic reconstructions are far more precise than the archaeological cultural sequence, additional bald cypress chronologies will need to be developed to see if the data from the Four Hole Swamp reconstruction used in this study are representative of climatic conditions in the general vicinity of the Savannah River basin. Since this study was initiated, additional cores have been examined from Four Hole Swamp which, when added to the original dataset, should improve the utility (i.e., as measured by variance explained) of the paleoclimatic reconstruction. Chronologies are also under development in the lower Savannah and Ocmulgee River areas by the staff of the Tree-Ring Laboratory at the University of Arkansas. While these additional data were not available for use at the time of this study, they will be in the near future, and can be used to test the inferences raised in this study.

Independent records of climatic change will need to be examined in conjunction with the *Taxodium* record, not only to corroborate the paleoclimatic reconstruction, but also to see what other environmental changes were occurring that might have affected local human populations. Are the periods of extended above and below average moisture conditions reflected in pollen records or geological deposits (i.e., are sedimentation rates and depositional/erosional regimes affected by changing moisture patterns)? At an even larger scale, do the inferred changes from the rainfall/moisture record tie in with regional or even global patterns of climate change, as reflected in sea level curves or glacial advances? Are drainage and moisture conditions where the paleoclimatic reconstructions were developed, for example, impacted by eustatic (global) or isostatic or neotectonic (regional or local) adjustments (Colquhoun and Brooks 1986)? The world-wide Neo-Boreal deterioration in climate in the mid-15th century, marking the onset of what has been called the Little Ice Age, affected human settlement and agricultural productivity over large areas (John 1977:131-143; Lamb 1966, 1982; Penman 1988). The political developments observed in the chiefdoms in the Savannah River Valley may well be part of this larger picture of environmental change.

Another topic that needs to be explored is how extensive an area is covered by the inferred climatic record in the Four Hole Swamp chronology. Are the extended periods of above and below average precipitation synchronous over large areas, and if so how does this impact cultural and political developments within these areas, specifically warfare, alliance formation, habitation and field dispersal, and hunting and storage strategies? Finally, basic information about Mississippian storage technology and capacity will need to be developed, through the use of ethnohistorical, archaeological, and ethnoarchaeological analyses, to see if the assumptions in the models of crop yield and storage strategy presented here are warranted. Research will specifically need to be directed to verifying local relationships between PDSI values and crop yields, factoring out the effects of modern agricultural practices. This study, as a first effort, does indicate that analyses linking paleoclimatic and archaeological data are likely to prove quite valuable in this part of the Southeast.

CHAPTER VII.

EXPLORING THE CAUSES OF CHIEFLY CYCLING IN THE SAVANNAH RIVER VALLEY (II): EVENTS AT PARTICULAR SITES

Introduction

In this chapter archaeological evidence at a series of sites in the Savannah River basin is examined, in a further effort to determine the causes of political and organizational changes observed within local chiefdoms. The focus for this examination is on the causes of cycling behavior, that is, the events surrounding the formation and fragmentation of complex chiefdoms in the valley. The analysis also addresses the related topic of organizational change in chiefdoms in general, since in some cases it is not possible to determine how changes observed on a particular site tie into the larger question of cycling. The formation of complex chiefdoms locally, we have seen in the previous chapter, occurs during periods of subsistence uncertainty and increased conflict, with individual centers (and presumably the elites at these centers) achieving preeminence at the expense of other centers. Maintenance of complex chiefdom organizational forms locally, furthermore, is facilitated by favorable climatic conditions, while their demise is triggered, at least in part, by the same factors that helped bring them into being, subsistence uncertainty and increased conflict. Unfortunately, we have little data from the two mound sites presumed to have been the centers of the complex chiefdoms that emerged in the valley, Mason's Plantation and Rembert. As a result, our analyses focus on other sites, and how events in their history may be related to this larger problem. As we shall see, the record from these secondary sites indicates organizational transformations can have pronounced archaeological signatures.

Evidence for Organizational Change at Particular Sites in the Savannah River Basin

A least some level of information is available from several hundred Mississippian sites in the Savannah River basin, and excavations have been conducted at some twenty sites (Chapter V). Of this total, the archaeological record from seven sites — the Irene, Hollywood, Beaverdam Creek, Chauga, Tugalo, and Estatoe mound centers and the Rucker's Bottom village site — is particularly extensive, and provides valuable information about what was happening during periods of organizational change, and how these changes may have come about.

Irene (9Ch1)

The Irene site was occupied during the Savannah I/II, Savannah III, and Irene I phases in the mouth of the Savannah sequence, from ca. A.D. 1150 to 1400. The site record details the development of a center assumed to have been the focus of political life for a simple chiefdom occupying the area of the river mouth. Successive construction stages in the primary mound suggest local elites were able to increase their power and status for several generations, as evidenced by the growth in mound volume and enlargement of structures, or the construction of multiple structures, atop the mound. The elaborate hearth and gutter arrangements atop Stages 5 and 6, furthermore, suggest ceremonial life was becoming more complex. The appearance of fortifications, if these are what the fences at the site are and not merely screening walls around a sacred precinct, suggests tension also increased over time. The ceremonial complex atop the platform mound was abandoned during Stage 7 and, when construction resumed sometime later, it was channeled in new directions. The primary mound now served as a burial mound and this, and the construction of a public building to the south of the main mound, suggests a more egalitarian society now occupied the site.

Major periods of change that are well documented in the archaeological record occur two times at Irene, first during the transition from the Savannah III to the Irene I occupation, around A.D. 1300, when the main platform mound fell into disuse for a number of years, and then again about a century later, around A.D. 1400, when the site was abandoned. The first major disruption occurred during the period when Mound Stage 7, the last Savannah III occupation of the site prior to the Irene I phase, was in use. The site record changes dramatically at this time. The mound and its associated ceremonial structures fell into disuse for some time prior to the beginning of the Irene phase construction marking Stage 8. The two structures identified atop Mound Stage 7 had been clearly abandoned for some time, as evidenced by the presence of considerable erosion on the mound slopes, to the point where portions of the southeastern structure and the palisade line around the summit had washed away. While a thin layer of ash and charcoal were found on the floor of the southeastern structure, there was no conclusive evidence that it, or the northeastern structure, where very little ash was found, had burned.

The seven Savannah stages each had had an associated summit structure, and palisades had surrounded the base of Stage 3 and the summits of Stages 5, 6 and 7. The placement of palisades around first the base and then the summit of the Savannah mound may point to either the increasing isolation of the local elite, or increased warfare in the general region. A large semicircular palisade was built around the mounds at some point during the Savannah occupation as well, a further indication of hostilities. If the presence of palisades reflects the increasing physical isolation of the elite, or an increase in regional patterns of warfare, either could have resulted in organizational destabilization, leading to the abandonment of Stage 7. Increasing pomp and ceremony is implied in the successive

Savannah mound stages which, as noted, proceed from simple to more elaborate earth-embanked structures, to ever larger platform mounds with seemingly specialized central structures with unusual fire basin/gutter features. Whether this pattern continued in Stage 7 could not be determined due to the erosion on the summit.

The artifactual evidence from the summit suggests this was unlikely. Savannah Complicated Stamped pottery, which was present in each of the preceding mound stages (Caldwell and McCann 1941:2, 78), is absent in the occupation zone associated with Mound Stage 7 at Irene. Other Savannah finishes, specifically check stamping and burnished plain are found, but no complicated stamped sherds were recovered from the mound. It is possible that this disappearance of complicated stamped wares may reflect an impoverishment of local elites, that is, a decline in the incidence of status marking goods at the center, or the decline in the manufacture of a ware minimally signalling affiliation with and continuity in a local Mississippian tradition. Savannah Complicated Stamping is most typically found on large jar forms, at least in the upper part of the basin where detailed vessel functional analyses have been conducted (Rudolph and Hally 1985:373), and the same appears to be true of the sample recovered from Irene (Caldwell and McCann 1941:45). These large complicated stamped jars are thought to have had storage functions, and their absence in the last Savannah mound stage may point to a decline in the ability of local elites to mobilize tribute, some of which may have been stored in the structures atop the mound, following arguments developed by Shapiro (1985a) and Blitz (1989). All of this assumes, of course, that Savannah Complicated Stamped wares signaled elite status or group affiliation in some way, and that the pottery sample from the summit of Stage 7 (N=111 sherds) is representative of site conditions.

The replacement or reinvigoration of local political structures is marked by the appearance of Irene I phase materials across the site, and the extensive construction activities associated with this occupation. The final episode of construction in the primary mound was much different than the preceding stages. Stage 8, dating to the Irene I phase, was built after the summit of Stage 7 had been abandoned long enough for extensive erosion to occur, possibly for as long as one or more generations. The mound created by the construction of Stage 8 was circular with a rounded summit and measured approximately 48.8 m in diameter and stood 4.7 m high. Appreciably larger than the Stage 7 mound, no evidence for structures was found on its summit, a major break with the earlier tradition. The construction of Stage 8 included a number of features that appear intended, in fact, to symbolically demarcate and separate the new stage from its predecessors. These included the placement of shell layers over the old stage, and the deliberate effacing of the ramps on the sides of the earlier mound. The new mound also functioned differently, over and above the absence of structures. Save for a skull associated with a Savannah Cordmarked pot found just under the western margin of Mound Stage 3, possibly representing a dedicatory offering, no formal burials were found in the first seven mound stages. A number of burials were present in the fill of Stage 8; however, three apparently were interred during construction and several more some time later (Caldwell and McCann 1941:18, 20). The function of the mound had clearly changed, from an elite residence or temple to a burial mound, like the smaller mound at the site, and the earlier mound at Haven Home. A return to earlier, more egalitarian burial practices is indicated.

Perhaps the most convincing evidence that organizational change was occurring at this time at Irene, beyond the abandonment of platform mound architecture and the conversion of the primary mound into a rounded burial mound, was the construction of a probable rotunda or council house to the south of the main mound. This rotunda apparently underwent one or more episodes of rebuilding and expansion, indicating it was in use for some time. This strongly suggests a change from decision-making by elites to decision-making by some form of public consensus. Council houses were observed in a number of Southeastern Atlantic coastal groups during the early contact era, and in these cases appear to have served as public forums (Crook 1978:39-40; Hilton 1663, in Cheves 1897:21-22; Waddell 1980:45-46). DePratter (1983:207-210) has suggested that council houses were present only in Mississippian societies that were weakly integrated, specifically chiefdoms that were just getting started or that were falling apart, that is, becoming more egalitarian (Chapter IV and below). The latter appears to have been occurring at Irene. The expansion in size of the Irene council house over time, furthermore, may indicate either population growth or the inclusion of a larger percentage of adults in the decision-making process, or both. If the latter explanation is correct, it may indicate the society was indeed growing more egalitarian over time.

There is some evidence from the site for an increase in warfare during the Irene occupation. One burial from the center of the rotunda was missing its head, and five isolated skulls that may have represented war trophies were found around the site in Irene contexts (compared to one in Savannah contexts). Two adult males with crushed skulls found buried near the edge of the Stage 8 Irene mound that may have been victims of warfare, or possibly sentinels executed for failing in their duty, something explicitly depicted in a plate by LeMoyne (1875). Another possible war casualty, an adult female buried in the Irene mortuary, had apparently been killed by an arrow to the head. The appearance and elaboration of fortifications at the site, first around the Savannah mound and then around the Irene rotunda, may also point to increasing hostilities, as noted previously. Of the six domestic structures at the site, the two latest ones dating to the transitional Savannah/Irene and Irene I occupations had burned, as had the Irene mortuary.

Within the Irene mortuary complex itself there is evidence for an increase in raiding and warfare, and possibly the impoverishment of the site occupants, during the period prior to abandonment. This complex was apparently built in two stages, first an inner enclosed burial area around the mortuary structure, and then a second, outer enclosure. A number of double (N=6) and fragmentary burials (N=4) were placed in these areas, suggesting multiple deaths were occurring and, possibly, that people were killed and their bodies recovered considerably later in a fragmentary condition (*sensu* Hudson et al.'s 1988 reconstruction of events at the King site in northwest Georgia). Almost half the burials in the inner, earlier circular enclosure (19 of 41 individuals) had grave goods, compared to less than one-quarter (5 of 23 individuals) of those in the outer and presumably later circular enclosure (Caldwell and McCann 1941:28). A similar decline in the occurrence of grave goods in burials prior to site abandonment, as we shall see, has been noted at a number of other sites in the Savannah River Valley.

Hollywood (9Ri1)

Striking evidence for the impoverishment of local elites during the period leading up to site abandonment has been found at the Hollywood site. In Mound B, which was excavated by Reynolds in 1891, a marked difference is evident in the kinds and amounts of grave goods found with the burials in the upper and lower divisions, or first two stages, of the lower mound fill (Table 16). Elaborate materials were found associated with the burials in what Reynolds called the lower division of the lower mound, including copper celts and engraved plates, painted and engraved ceramic vessels, shell beads, stone celts, pipes, lumps of galena and glauconite, and discoidals. In the upper division, in contrast, one or two pottery vessels and a repousse copper plate fragment were all that were found with the burials. After these upper division burials were interred sometime toward the end of the Hollywood phase mound construction ceased (at least until later in the historic period, when an upper level was added, presumably by 18th or 19th century settlers), although the mound was used for some time after by early Irene groups, who placed several urn burials in the fill just below the surface. In some ways the use of Mound B at Hollywood parallels events at Irene itself, where the Savannah

Table 16. Mississippian Burials from the Hollywood Site: Summary Data by Provenience.

Upper Division	Grave Goods
Burial 11	Repoussé figured copper plate, small vessel
Burial	Two vessels
Burial 10	Vessel
Burial	No grave goods
Lower Division	
Burial 2	Long necked jar (negative painted w/sunburst), a tripodal bottle (tripod made of human heads), five clay and one soapstone pipes, five other pottery vessels, a copper ax head wrapped in cloth and bark, copper falcon warrior plates, a biconcave disk of quartz, two copper celts wrapped in cloth and encased in bark, and several large pieces of mica.
Burial 3	Two lots of shell beads, perforated shell disks, a copper-sheathed wooden earspool, and a lump of galenite.
Burial 5	Owl effigy pipe, a decayed shell ornament, three stone celts, five discoidal stones, an unusual stone implement, and a lump of glauconite.
Burial 6	A stone celt.
Burial 7	No grave goods (It is possible that two of the vessels, the falcon warrior plates, the biconcave disk, mica, and two copper celts from Burial two were actually associated with this burial.)
Burial 8	A lot of shell beads, a copper ax encased in wood, a whelk columella, and a lump of glauconite.
Burial 9	One pipe.

phase platform mound was subsequently used as a burial mound by Irene populations (although no evidence for burials was found in the platform mound stages at Irene).

The individuals buried in the lower division of Mound B at Hollywood unquestionably occupied positions of high status in their society. Given the unusual nature of the associated grave goods which included pottery styles from potentially as far afield as Spiro (see Chapter V), they also were in some kind of contact with other elites at considerable distances. The placement of the lower division burials, immediately above the premound midden, suggests these individuals were interred fairly soon after the site was founded, that is, soon after a chiefdom level of organization arose locally. Because the associated grave goods are so unusual and elaborate, that they hardly seem to be the type an indigenous emerging elite could acquire, particularly since there appears to be little of value locally such an elite could offer in exchange, at least as far as we have been able to determine to date. It is suggested that these grave goods were brought to the site by a founding elite originating elsewhere, possibly from the contemporaneous late Etowah/ Wilbanks phase chiefdoms of northwest Georgia.

Beaverdam Creek (9Eb85)

Evidence for increasing social complexity, followed by elite impoverishment and then site abandonment is also indicated at Beaverdam Creek. The small mound at this site went through six separate construction episodes during the Beaverdam phase, from ca. A.D. 1200 to 1300. Two earth-embanked structures or "earthlodges" were built initially, one on top of the other, followed by four platform mound stages. The transition from earthlodges to platform mound stage at the site suggests society was becoming increasingly stratified. An analysis of the relative age of the burials in the Beaverdam Creek Mound, based on the provenience where the burial was found, documented a decline in the incidence of interments with grave goods over time (Table 17,

Table 17. Mississippian Burials from the Beaverdam Creek Site: Summary Data by Provenience

Burial Number	Sex	Age	Pathology	Stature	Alignment	Provenience	Grave Goods
20	?	4.5 years	one carious tooth	-	semi-flexed	Premound midden	Two shell ear ornaments
22	?	7 years	none apparent	-	semi-flexed	Premound midden	None
28	?	4.5 years	none apparent	-	unknown	Premound midden	None (burial is isolated cranium)
35	?	2 years	none apparent	-	semi-flexed	Premound midden	None
37	?	6 months	none apparent	-	unknown	Premound midden	None
39	?	2 years	none apparent	-	flexed	Premound midden	None
43	?	fetus	none apparent	-	unknown	Premound midden	None
44	?	5.5 years	none apparent	-	flexed	Premound midden	One plain ceramic vessel w/scalloped rim
47	?	infant	none apparent	-	semi-flexed?	Premound midden	None
48	?	18 months	none apparent	-	semi-flexed?	Premound midden	Two shell gorgets, 7 bone beads.
10	F	>40 years	dental abcesses	155-163 cm	flexed	Premound midden	Two charred logs, 1 shell bead, 2 shell pins
17	F	21 years	tuberculosis	-	flexed	Premound midden	None
19	F	25-30 years	excessive calculus	-	flexed	Premound midden	None
24	F	42 years	caries	-	flexed	Premound midden	One burnished plain bowl
32	F	21 years	none apparent	163.9 cm	flexed	Premound midden	Turtle shell carapace
33	F	45 years	gerontal osteoporosis	-	flexed	Premound midden	None
34	F	48 years	none apparent	-	flexed	Premound midden	Five shell beads
46	F	24 years	none apparent	161.7 cm	flexed	Premound midden	None
13	F	55 years	none apparent	-	flexed	Premound midden?	None
26	F?	20 years	one carious molar	-	flexed	Premound midden	None
23	M	55 years	none apparent	171 cm	flexed	Premound midden	None
27	M	30-35 years	none apparent	168.1 cm	flexed	Premound midden	Four projectile points
29	M	75-80 years	none apparent	-	semi-flexed	Premound midden	None
30	M	65-75 years	calculus deposit	-	flexed	Premound midden	Whelk shell vessel
31	M	60 years	blastomycosis, -1	175.2 cm	flexed	Premound midden	450 small, barrel-shaped shell beads
36	M	55 years	none apparent	-	semi-flexed	Premound midden	Two shell beads
40	M	28 years	carious molar -2	168.8 cm	semi-flexed	Premound midden	None
21	M?	Adult?	none apparent	-	unknown	Premound midden	None ("burial" is isolated tibia)
25	M?	42 years	none apparent	-	semi-flexed	Premound midden	None
38	M	22 years	none apparent	165.8 cm	flexed	Early Mound Stage?	None
41	M?	30 years	none apparent	-	unknown	Early Mound Stage?	Two ceramic elbow pipes
42	F	20 years	none apparent	-	semi-flexed	Early Mound Stage?	None

Table 17. (continued) **Mississippian Burials from the Beaverdam Creek Site: Summary Data by Provenience**

Burial Number	Sex	Age	Pathology	Stature	Alignment	Provenience	Grave Goods
2	M	30-35 years	osteomyelitis	-	flexed	Earthlodge A1/A2	Copper crescent, 2 earspools, whelk columella, 12 ollivela shells, 1 shell gorget, 1 shell button, 7043 shell beads
5	?	Adult	none apparent	-	unknown	Mound Stage 1	None
12	M	45-55 years	none apparent	169-170 cm	flexed	Mound Stage 3	None
11	M	> 40 years	periostitis	-	semi-flexed	Mound Stage 4	None
14	M	35-45 years	none apparent	178 cm	semi-flexed	Mound Stage 4	None
1	?	subadolescent	none	-	unknown	Village	None
3	F?	30 years	tooth loss	-	semi-flexed	Village	None
4	F?	20-25 years	none apparent	-	semi-flexed	Village	None
6	F	35-45 years	severe caries	-	flexed	Village	None
7	?	Adult	none apparent	-	semi-flexed	Village	None
8	?	3-5 years	none apparent	-	bundle	Village	None
9	F	20-30 years	caries, periodl.	163 cm	semi-flexed	Village	None
15	?	5.5 years	none apparent	-	unknown	Village	None
16	F	20 years	caries, periostitis	155.6 cm	flexed	Village	None
45	?	?	?	-	?	Village	Unexcavated

(no burial 18 excavated)

period. = periodontal disease
1= Burial 31 also had osteophytosis and partially healed cut marks
2= Burial 40 also had blastomycosis

Figure 111). Most of the burials with grave goods, in fact, occurred in the earliest phases of site use, presumably when the chiefdom was just emerging. Unfortunately, given the extent to which the site had been looted prior to excavation, most of the burials upon which this analysis is based came from the lowest stages. While a pattern of progressive impoverishment of the center prior to its ultimate abandonment is suggested, the extensive destruction of the upper stages and the difficulties attendant in dating many of the surviving burials renders this interpretation open to question.

Rudolph and Hally (1985:348-351) made an attempt to arrive at a more precise relative placement of the burials at Beaverdam Creek, by examining their position within the premound midden, and the location and extent of the overlying stages. Burials found near the top of the premound midden were assumed to contemporaneous with the mound stage just prior to the mound stage that covered them. Adult burials in the premound midden that were extremely shallow, however, were assumed to have been placed in the immediately overlying stage. Their arrangement of the burials, while less conservative than the preceding analysis, may more closely represent the interment history of the site (Figure 111). Burials with grave goods occur much more evenly over time, making claims of site impoverishment more difficult to justify. Examining the incidence of elaborate burials, however, defined as those with shell or copper grave goods, it is evident that a majority (5 of 8) of these burials occur in the group assigned to pre-Mound Stage 1. Five of the 11 burials in this earliest group (45.5%), in fact, have elaborate grave goods, as opposed to only three of the 24 burials (12.5%) in the stages above them. Thus, both analyses indicate an impoverishment of local elites was occurring over time.

A detailed analysis of vessel form and function was conducted using all of the intact or reconstructable vessels from the site, and those rimsherds (N=198) large enough to permit accurate vessel shape determinations and orifice diameter measurement

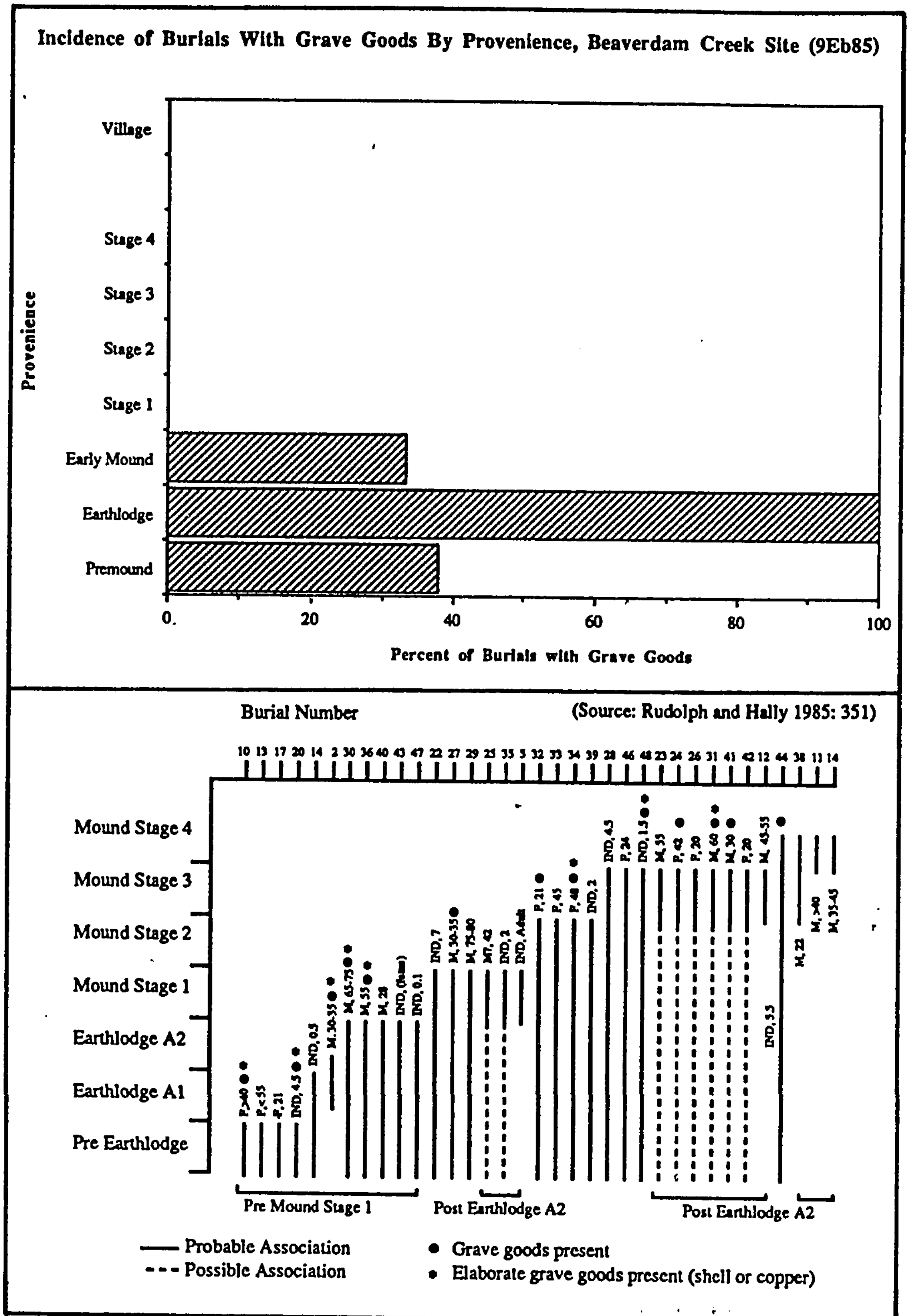


Figure 111. Incidence of Burials with Grave Goods by Provenience at the Beaverdam Creek Site (9Eb85).

(Rudolph and Hally 1985:367-398; see also Hally 1983a, 1983b, 1984, 1986b). Eight distinct vessel forms were identified, each exhibiting a fair degree of size variability, and this absence of size standardization has been interpreted as reflecting household rather than community or specialist patterns of manufacture and use (Rudolph and Hally 1985:384). Most of the ceramic vessels from Beaverdam Creek indicated domestic or secular use, with little evidence for a class of "sacred" vessels (*sensu* Sears 1973). The scarcity of elaborate vessels like those found with the lower burials at Hollywood suggests elite prestige-based display and competition was not well developed in the Beaverdam Creek society, or at least was not conducted using this medium. Following arguments developed by Brumfiel (1987) and recounted in Chapter IV, this suggests that factional competition may have been fairly minimal in the simple chiefdom assumed to have been centered on the site. If so, than the abandonment of the site may well have been due to external causes, such as extended periods of inclement weather or the emergence of a complex chiefdom nearby, as suspected, rather than internal dissension and conflict. Further inferences obtained from this site are presented in the comparative analyses of subsistence and mortuary data from the valley's sites presented below.

Rucker's Bottom (9Eb91)

The Rucker's Bottom site was a small agricultural community occupied during the Beaverdam and Rembert phases, from approximately A.D. 1200 to 1450. Throughout its occupation the village remained fairly small, never exceeding a hectare in size, although it did relocate a hundred or so meters along the terrace between the Beaverdam and Rembert phases. Both the earlier and later villages at the site were characterized by structures about plazas, a typical southeastern Mississippian arrangement. Large circular structures were found in both villages to the south of the plazas. These have been interpreted as council houses, and their presence may indicate considerable local decision-making in these societies. The portions of the community plans that were recovered indicate that between 15 and 30 houses were present at any one time. Total village population was probably somewhere between ca. 90 and 330, depending on whether Naroll's (1962; 5.9 people per house) or Cook's (1972; 11.0 people/house) estimate is used. Given the small size of the site's presumed domestic structures, which range between ca. 25 and 50 sq. m, a community size toward the lower end of this range is suggested, on the order of 90 to 150 people.

The earlier, Beaverdam phase village at Rucker's Bottom was probably a tributary community to the Beaverdam Creek mound center, which was located ca. 12 kilometers downstream. Comparative mortuary and paleosubsistence analyses indicate that the inhabitants of this village did not live as well as those at the center (see below). On the average they were in much poorer health and shorter in stature, and when they died they were interred with less elaborate grave goods, if any at all. While both of these Beaverdam phase components, at the mound center and at Rucker's Bottom, made use of a fairly wide range of wild plant and animal foods as well as cultigens, there is some evidence to suggest that food, specifically deer hindquarters, was leaving the village as tribute. If food was being removed from one site to the other, it might explain the differences in health and stature observed between the two populations.

Shortly after A.D. 1300 the Beaverdam Creek Mound site was abandoned, with the Rembert Mounds to the south becoming the principal ceremonial center in this part of the drainage. About this time the village at Rucker's Bottom was relocated to the northern part of the terrace, and simple ditch and stockade fortifications appeared. No evidence has been found for food leaving the site as tribute in this later occupation, and the villagers appear to have been in better health, suggesting the community exercised greater autonomy than previously. Subsistence became increasingly focused, with a much narrower range of species exploited, and a particular emphasis on deer and acorns.

Archaeological evidence for the presence of council houses was noted during both the Beaverdam and Rembert phase occupations. The presence of a council house during the Rembert phase occupation is virtually certain, given the large, well-defined postmold pattern found fronting on the plaza in the southern part of the village (Figure 68). Evidence for the Beaverdam phase rotunda, in contrast, was less secure, since the large post ring presumably defining the structure occurred amid a dense scatter of postmolds. Either council houses were present in both phases, when the site was under control of the nearby Beaverdam Creek mound center and later when it appears to have had greater autonomy, or else the Rembert council house was the first on the site and was built to handle decision-making formerly conducted outside the village, and presumably at the center.

The size of the village increased between the earlier and later enclosures from 5600 to 7200 sq. m. The rectangular enclosure, surrounding the final occupation at the site, surrounded an area about a quarter again as large as that within the semicircular enclosures. These figures suggest at least some increase in local population. With the apparent eclipse of the Beaverdam Mound by Rembert, a site over twice as far away, the Rucker's Bottom community may have also attained greater prominence in the local settlement system, possibly becoming somewhat more autonomous.

The size of the fortifications in the Rembert phase village increased over time, from a fenceline composed of posts 15 cm in diameter in the semicircular enclosure to one of posts up to 30 cm wide in the later, rectangular enclosure. The greater emphasis on fortifications may reflect the somewhat greater isolation of the community, which may have had to serve as a center or defended area for a somewhat larger surrounding population. Sites with Mississippian components, most appreciably smaller than the scatter at Rucker's Bottom, have been found throughout the floodplain along this stretch of the Savannah and appear to represent isolated hamlets or smaller communities. The inhabitants of these nearby sites may have gravitated to Rucker's Bottom in times of stress, and possibly at other times for communal activities or ceremonies. The fact that the fortifications are not particularly elaborate, however, suggests that while defense was a consideration it was not a preeminent concern.

There is some evidence for a greater concern with food storage and for preventing unsanctioned use of food during the Rembert phase occupation, something that may be linked to the extended period of drought that apparently occurred toward the end of this phase. During the Beaverdam phase and presumably during much of the Rembert occupation storage is assumed to have been in above-ground facilities, or barbacoas like those reported by the early Spanish explorers (Chapter III). A number of small circular and rectangular post arrangements were found at Rucker's Bottom that were interpreted as possible storage sheds or corncribs. Three of these structures, Numbers 3, 4, and 6 (Figures 67, 68) were located in the Rembert village, two adjacent to the probable rotunda, and the third to the east, near the rectangular palisade wall (Anderson and Schuldenrein 1985:538-539, 551-552). Only postmold patterns were documented, so interpreting the function of these structures is difficult. No evidence for plant food remains was found in the fill of the posts delimiting these structures, although it should be noted that flotation samples were taken and examined from only four posts, all from Structure 6. The placement of these structures near the rotunda and plaza, if they are indeed storage facilities, suggests some concern with public access during the Rembert occupation.

What appear to be massive subterranean storage features occur for the first time at the site during the Rembert phase occupation. Two of these were excavated, one (Feature M1143) found behind a house against the inner wall of the semicircular palisade, while the other (Feature M1193) was in the center of the plaza area (Anderson and Schuldenrein 1985:536, 554). These features had little in their fill but pottery fragments and small amounts of other midden debris, something that distinguished them from the other large pits found on the site, which either invariably contained burials or, if found in plaza areas, were filled with boulders and appear to have served as massive post supports. Each had a capacity of about a cu. m, and would have thus been able to hold ca. 28.4 bushels of shelled corn (see Morse 1980:21-8 to 21-11 and DeBoer [1988] for further discussion of how these features functioned in Southeastern Mississippian societies). Their locations suggest a desire to hide food supplies, or restrict them to use by a single family, in the case of M1143, or maintain them in public view and hence ensure their access was known to the community, in the case of M1193. Two other large pits were found near M1193 in the center of the plaza in the Rembert village. These pits, Features M1183 and M1184, were interpreted as major post supports, although unlike similar pits in the Beaverdam phase village, they did not have well-defined rock-lined postmolds in them (Anderson and Schuldenrein 1985:488-490, 552-554). These features had volumes approaching two cu. m, and may have been used for storage at some point, although they were ultimately filled with >500 kg of rock.

The fact that there is no evidence to suggest the Rucker's Bottom community burned suggests it was abandoned by its inhabitants rather than destroyed by outsiders. At least one of the Rembert phase houses, Structure 2, was abandoned and later used as a butchering area, although this could have occurred during normal village occupation (Anderson and Schuldenrein 1985:561-578). Some low-level conflict may have been occurring, however, since the only multiple burial found at the site, a group of of three individuals lying extended on their back, came from inside the Rembert enclosure (Weaver et al. 1985:631-634). This may have been a family group, since it consisted of two adults (one female and the other unidentifiable as to sex) and a young child of about 6 or 7 years. No evidence for trauma was observed on the remains which were, however, in a shallow pit and quite fragmentary. Site abandonment might have been hastened by a series of multiple deaths.

Chauga (9Oc47)

The Chauga site was occupied during the Early Mississippian Jarrett phase, when the first six mound stages were built. After a hiatus of about two centuries the site was reoccupied during the Late Mississippian Tugalo phase, when four additional stages were built over the first six. The six Jarrett phase mound stages each had a well defined clay cap. This clay capping, while potentially functioning to reduce erosion of the underlying basket-loaded fill, also would have symbolically sealed and separated the earlier stages from the most recent stage. A palisade was apparently built around the mound at the time Stage 6 was erected. While an earlier palisade had been erected around Stage 1, and was assumed to demarcate a burial area, these fences may have also had a defensive purpose. The fact that palisades were present during both the initial and the final periods of the Early Mississippian occupation points to a greater concern with defense at the times when the chiefdom was just getting established, and when it was falling apart.

Stages 7-10 at Chauga corresponded to the Late Lamar Tugalo phase occupation. The absence of clay caps on the summit of these stages indicates a different approach to mound building had emerged in the two centuries since the Jarrett occupation. Stages 7 and 8 were large, furthermore, indicating extensive construction was occurring, and suggesting the founding society was vibrant. A second decline of mound building occurred during Stages 9 and 10, however, which were much smaller than Stages 7 and 8. The timing of this decline, late in the Tugalo phase, suggests it is linked with the decline in moundbuilding observed throughout the interior Southeast during the late 16th century, a pattern equated with a European contact-induced collapse of chiefly political organization (Smith 1987).

In all, 62 burials were excavated at Chauga, 53 in or near the mound, and nine in the village area (Figures 64, 112; Table 18). Close to thirty of the burials came from a small area on the southeast side of the mound, and several more were found buried in the

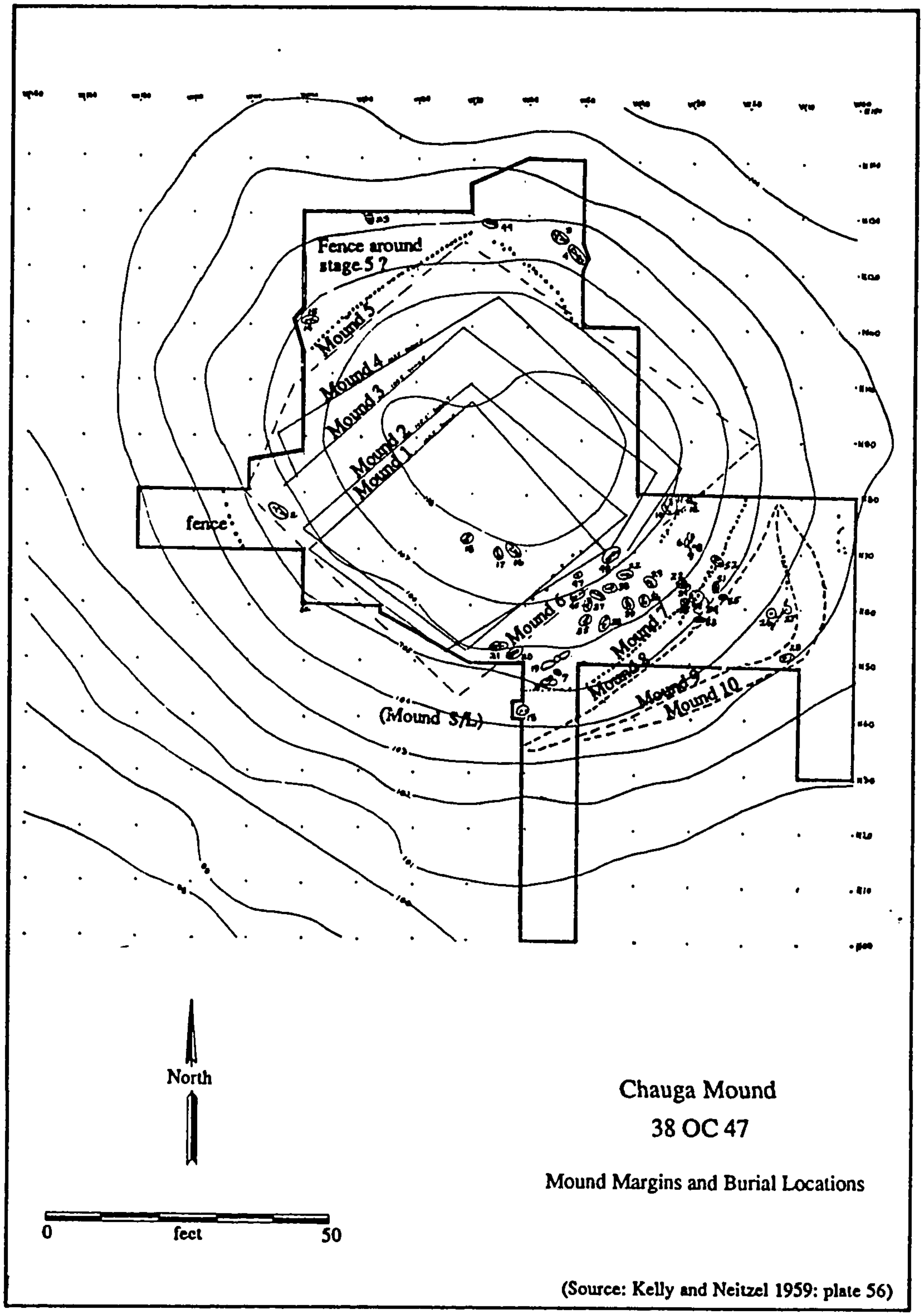


Figure 112. Burial Locations at the Chauga Site (38Oc47).

Table 18. Mississippian Burials from the Chauga Site: Summary Data by Provenience.

Burial Number	Sex	Age	Alignment	Provenience	Grave Goods
42	?	Adult	Partly Flexed	Premound	Celt, Discoidals, Shell Beads and Pin
46	?	?	Fully Flexed	Premound	Shell Beads
47	?	Adult	Bundle	Premound	None
7	?	Child	Bundle	Premound	Cut Disc beads/Barrel Beads
18	?	Child	Partly Flexed	Premound	Burial Wrapping/Sandstone Concretions
23	?	Infant		Premound	None
16	F	Adult	Fully Flexed	Premound	None
45	F	Adult	Partly Flexed	Premound	None
21	F?	Adult	Partly Flexed	Premound	None
22	F?	Adult	Fully Flexed	Premound	None
24	M	Adult	Bundle	Premound	Projectile Point
2	M	Mature	Partly Flexed	Premound	None
20	M	Mature	Fully Flexed	Premound	Beads, Labret, Graphite, Stones
12	M?	Adult	Fully Flexed	Premound	None
17	M	Mature	Fully Flexed	Mound 1	None
19	M	Mature	Bundle	Mound 1	None
9	?	Unknown	Bundle	Mound 2	None
5	M	Adult	Partly Flexed	Mound 2	Charred Stick
6	M	Mature	Partly Flexed	Mound 2	Olivella beads at wrists
8	M?	Mature	Partly Flexed	Mound 2	Cut Disc Beads
10	F	Mature	Fully Flexed	Mound 3	Tubular Beads/Burial Wrappings
11	F	Mature	Fully Flexed	Mound 3	None
1	M	Mature	Partly Flexed	Mound 3	None
48	M	Mature	Partly Flexed	Mound 3	Shell Dipper, Copper Eagle Plate, Mica Sheet

Table 18. (continued) Mississippian Burials from the Chauga Site: Summary Data by Provenience.

Burial Number	Sex	Age	Alignment	Provenience	Grave Goods
62	?	Infant		Mound 3/5	None
4	F	Mature	Extended	Mound 5	None
3	F?	Adult	Partly Flexed	Mound 5	None
44	F	Adult	Fully Flexed	Mound 6	None
33	M	Adult	Partly Flexed	>Mound 6	None
13	?	Adult	Fully Flexed	Outwash >Mound 6	None
15	M	Adult	Fully Flexed	Outwash >Mound 6	None
14	M?	Adult	Partly Flexed	Outwash >Mound 6	None
43	M	Adult	Partly Flexed	Mound 7	None
35	M	Mature	Partly Flexed	Mound 7	3 Projectile Ppts; Stones; Shell Pins, Beads, & Gorget
25	?	Mature	Partly Flexed	>Mound 7	None
29	?	?	Partly Flexed	Premound 7	None
34	?	Infant	Bundle?	Premound 7	Tubular Shell Beads
38	?	Infant	Partly Flexed	Premound 7	Shell Beads
39	?	Mature	Partly Flexed	Premound 7	Shell Beads
54	?	Mature	Partly Flexed	Premound 7	None
37	F	Adult	Partly Flexed	Premound 7	None
58	F	Mature	Partly Flexed	Premound 7	Conch Shell Spoon, Shell Beads
36	M	Mature	Partly Flexed	Premound 7	None
51	M	Mature	Partly Flexed	Premound 7	Shell Beads
52	M	Mature	Partly Flexed	Premound 7	Copper Plate, Dipper

Table 18. (continued) **Mississippian Burials from the Chauga Site: Summary Data by Provenience.**

Burial Number	Sex	Age	Alignment	Provenience	Grave Goods
55	?	?		Premound 8	None
28	M	Mature	Partly Flexed	Premound 8	None
53	M?	?	Fully Flexed	Premound 8	None
26	?	Infant		Premound 9	None
32	?	Child	Partly Flexed	Premound 9	Mica Sheet, Projectile Point, Debitage
27	?	Infant		Premound 9/10	None
30	?	Mature	Partly Flexed	Premound 9/10	Beads, Shell Gorget, Rattle
31	?	Adult	Partly Flexed	Premound 10	None
			Village Area		
40	?	?	Fully Flexed	Village	None
49	?	?	Cemation	Village	None
41	?	Adolescent	Fully Flexed	Village	None
61	?	Child	Partly Flexed	Village	Shell Disc, Beads, & Gorget
56	F	Adult	Partly Flexed	Village	None
57	F?	Adult	Fully Flexed	Village	Shell Beads
59	F	Senile	Fully Flexed	Village	None
60	F	Adult	Partly Flexed	Village	Bone Gorget, Shell Beads & Gorget
50	M	Adult	Partly Flexed	Village	Shell Beads

mound itself within particular stages. There was some indication that the burials in this cluster were placed at the edge of each successive mound stage, and this, and the presence of a number of recognizable pit outlines, permitted the approximate dating of many of the interments by the excavators (Kelly and Neitzel 1961:Table 1; these assignments are presented in Table 18). Most of the burials were intact enough to place in coarse age groups, and twenty six were identified to sex. Almost all of the burials were either flexed or partially flexed, a few were bundle burials, and one was a cremation. Twenty four of the burials had accompanying grave goods, mostly in the form of shell beads or pins, with an occasional gorget, celt, discoidal, projectile point, or a piece of unusual rock or mineral. No truly elaborate interments like the ones noted at Hollywood and Beaverdam Creek, however, were found, suggesting elite-commoner distinctions may not have been pronounced.

Clear evidence for a progressive impoverishment of the site occupants is evident over the course of both the Jarrett and Tugalo occupations (Figure 113). The number of burials with grave goods of any kind during the Early Mississippian Jarrett phase occupation, for example, declined markedly after the initial stages of mound construction. No grave goods, in fact, are found with burials in the last four stages of the Jarrett occupation, just prior to the abandonment of the center. When the site was later reoccupied the same pattern occurred. Grave goods are found with an appreciable number of the interments associated with Stage 7, the initial Tugalo phase mound addition. This incidence declined in subsequent stages, and no grave goods were found in burials in the final stage of mound construction. Interestingly, the incidence of grave goods was higher among females than males, although females with grave goods were present only during the earliest stages of each occupation. Although the sample sizes are small, this patterning suggests that these two chiefdoms were each initially quite successful, with the elites in control of more wealth than in later times.

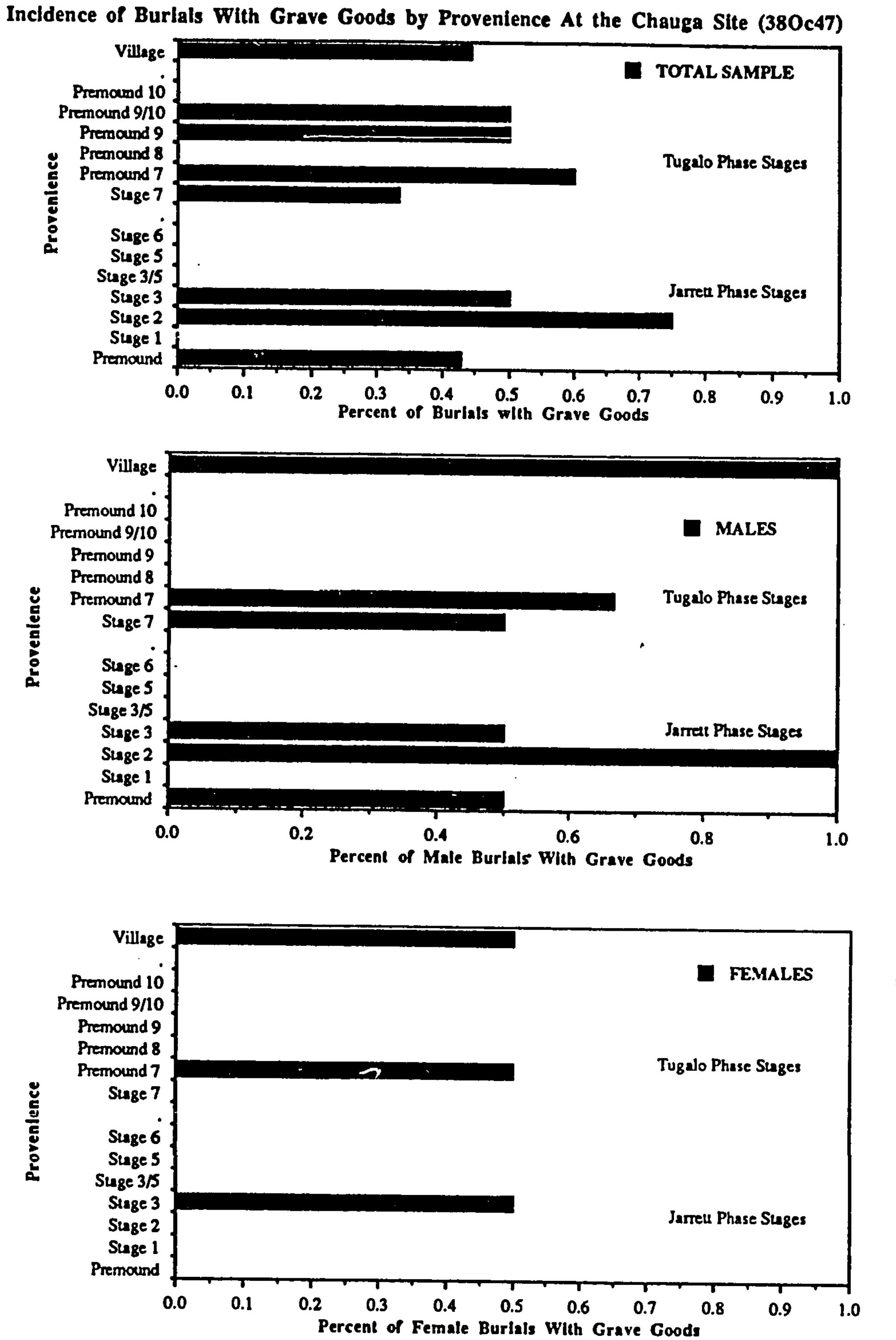


Figure 113. Incidence of Burials with Grave Goods by Provenience and Sex at the Chauga site(38Oc47).

Organizational change in the Mississippian populations occupying the headwaters of the Savannah basin at the beginning of the Tugalo phase is indicated by the new mound construction at Chauga and at Estatoe and, possibly, by the dramatic change in ceramic style that is observed at this time at Tugalo, which may have also seem new mound construction (see Chapter V and below). All of these events take place around or shortly after ca. A.D. 1450, when the lower portion of the basin was abandoned. An influx of people from these chiefdoms to the south may have occurred, resulting in social reorganization. This is demarcated in part by symbolic termination and rebuilding episodes at Estatoe and possibly Tugalo, and the reoccupation of other, previously abandoned centers like Chauga. While these occupations that emerged in the late 15th century appear to have continued into the historic period, and hence represent the formation of the Lower Cherokee towns, this is the subject of some debate. Appreciable continuity is evident between the ceramic assemblages of the Tugalo and Estatoe phases (Hally 1986a:112), although as noted in Chapter V assemblages from the interval between these phases, from ca. A.D. 1600 to 1700, remain to be documented.

There is some evidence from the early historic period to support the idea that Cherokees may not have been living in the upper Savannah area in the mid-16th century, but only later moved into this area. A number of the mountain Cherokee leaders Pardo met in western North Carolina, at the town of Tocae near Asheville and Cauchi near Marshall, had names suggesting possible affiliation with the Cherokee towns located along the upper Savannah River in the early 18th century, such as Estate Orata (after Estatoe?), and Tacoru Orata (after Tugalo?) (Hudson 1990:94-99). Given current reconstructions of Pardo's route, these communities were either farther into the mountains at this time, or the chiefs traveled appreciable distances to see Pardo. Hudson (1990:96) is uncertain which interpretation is correct, and notes that the possibility must at least be considered that the Lower Cherokee moved into the Savannah River Valley from towns farther into the mountains sometime after the 1560s, perhaps replacing or combining with the inhabitants of the chiefdoms already present in the area. While the site assemblage data on hand indicate continuity of occupation, refinement of our knowledge of events in the headwaters between A.D. 1600 and 1700 will be critical to the resolution of this problem.

Tugalo (9St1)

The Tugalo mound and village site was apparently occupied throughout the Mississippian period, with a possible break only during the Beaverdam phase. As at Irene and Beaverdam Creek, a transition from earth-embanked structures to substructure mound mantles apparently occurred during the Early Mississippian period. The four lowest stages or construction episodes, dating to the the Jarrett phase, were characterized by square earth-embanked structures with a central fire basins. The stages above this, unfortunately, had been plowed down, and were very poorly defined. At least one of these dated to the Jarrett phase, however, and may have been a first formal mound stage. As at the other sites, a transition from more to less egalitarian decision-making and the emergence of a social elite is indicated by these architectural changes.

The presence of well-defined log mantles over Mound Stages 2 through 4 at Tugalo (Figures 51-53) is different from the clay capping noted over the Jarrett phase mound stages at the nearby Chauga site, although the blue clay layer present around the base of Stage 4 at Tugalo was similar to the capping noted at Chauga. At both occupations the inhabitants appear to have gone to considerable trouble to separate earlier from later construction stages. This effort also served to emphasize the importance of the mound itself, and presumably of the elites who made use of it. Unfortunately, no burial data are available from the mound, and the burials from the adjoining off-mound block remain unanalyzed, precluding the kind of diachronic mortuary analyses conducted at

Hollywood, Beaverdam Creek, and Chauga. As at Chauga, a fenceline appears around the later Jarrett mounds, specifically Stages 3 and 4, prior to the abandonment of the center following Stage 5. The log mantle and fenceline associated with Stage 4 had burned, as had the fenceline associated with Stage 3, suggesting either increasing hostilities, or the use of fire in mound renewal/rebuilding activity.

While the later Mississippian occupations at Tugalo are currently poorly understood, they appear to have begun in the Rembert phase, following a hiatus in occupation of a century or more. As noted in Chapter V, ceramics from a refuse area on the northeast side of the mound were used by Hally (1986a) to define the Late Lamar Tugalo phase, which he argued developed directly out of the preceding Rembert phase. Continuity in ceramic manufacture from the Rembert through the historic Cherokee Estatoe phases is indicated at site like Tugalo in the upper Savannah basin, although as noted previously, assemblages dating from ca. A.D. 1600 to 1700 are currently undocumented, and the vents of this period remain uncertain.

Estatoe (9St3)

The occupation of the Estatoe site appears to have begun about the same time as the construction of Stages 8 through 10 of the Late Mississippian Tugalo phase occupation at Chauga, and about the same time the northeast dump deposit formed at Tugalo. Six construction episodes were were identified in the primary mound at Estatoe, all apparently dating to the Tugalo phase. The first five were each only a few cm thick, and surmounted by large squared structures ca. 12 m on a side. These buildings resemble the presumed public structures erected during the Early Mississippian occupations at Irene, Beaverdam Creek, and Tugalo, although they are appreciably larger and the earth embankments are missing. Although dating to considerably later in time, they may indicate that decision-making was fairly egalitarian during the early Tugalo phase. Since occupation began at Estatoe at this time, it is possible that the inhabitants were initially under the control of elites at another center, such as Tugalo or Chauga, which had earlier Tugalo phase occupations. If Estatoe was founded in part to accommodate an influx of people from lower in the basin, as is suspected, it is reasonable to assume that the older centers would have exercised some kind of control over these people, at least initially. Of these older centers Chauga may have been preeminent, since evidence for mound construction is present, while at Tugalo it is equivocal.

The emergence of elites at Estatoe proper may be indicated by the placement of a thick layer of stone over the fifth stage, evenly covering the underlying structure, and the erection of a fairly appreciable mound stage above this. The rock layer clearly differentiates the upper from the lower stages, and suggests some kind of change had occurred in the local society. The fact that a thick mound stage was erected, where previously thin lenses of earth had separated the first five structures, suggests the mound had become a true platform mound. Whether subsequent stages were built above Stage 6 could not be determined, since the upper part of the mound had been reduced by plowing, although no traces of such stages were found around the mound margin. Interestingly, even though Stage 6 is differentiated from the preceding stages, continuity is indicated by the re-use of major corner support post holes for the structure built atop the mound. These holes extended through the rock layer separating Stages 5 and 6 suggesting, if the emergence of an elite is indicated, it may have come from within the community and the tradition that used the earlier structures. Alternatively, since the post supports were rock lined and hence both durable and practical, their reuse may have been from purely practical considerations. Given the absence of evidence for later stages, however, if an elite group had emerged locally, they were apparently not in power for long. As at Chauga and possibly also at Tugalo, mound construction ceased in the drainage at this time, and across much of the region.

General Trends Associated With Organizational Change at Mississippian Sites in the Savannah River Basin

Council Houses and Political Change

At the present the occurrence and function of council houses on prehistoric Mississippian sites in the region is uncertain. By analogy, they are assumed to have functioned like the council houses on historic Creek and Cherokee sites, serving as combination men's houses and the locus of community decision-making (see Chapter V). Archaeological and ethnohistorical summaries of evidence pertaining to Dallas and Cherokee townhouses have been prepared by investigators working in eastern Tennessee (Baden 1983; Lewis and Kneberg 1946:70-72; Polhemus 1987:247-259; Schroedl 1978, 1986:228-23). Large circular structures have been reported from the Cemochechobee site in southwest Georgia (Schnell et al. 1981:63-66), at Macon Plateau in central Georgia (Fairbanks 1956), at Bessemer in central Alabama (Dejarnette and Wimberly 1941:53) and, in the Savannah River Valley, at Rucker's Bottom and Irene (Anderson and Schuldenrein 1985; Caldwell and McCann 1941). A public structure was recognized at the Julien site in the American Bottom (Milner 1984b:43-44, 102-103). An occurrence of public buildings or council houses throughout the Mississippian era, and on sites of widely varying sizes, is thus indicated from the regional archaeological record.

There is evidence from several sites that the appearance or disappearance of public structures signaled changes in political organization, specifically from decision-making by consensus to to decision-making in the hands of elites. At the Bessemer site in central Alabama, for example, large public buildings were replaced by mounds (Welch 1990). A replacement of earth-embanked structures, possible council houses, by mound stage construction is documented at a number of sites in the South Appalachian area, including at Irene and Beaverdam Creek and, possibly, at Tugalo in the Savannah River Valley. Rudolph (1984) has suggested that this replacement of earthlodge by platform/temple mound architecture reflected a replacement of communal meeting places by the residences and temples of a much smaller group of elite decision-makers, while DePratter (1983:209) believed council houses occurred in weakly centralized societies and that as chiefly authority increased, councils would have grown weaker and their structural correlates would have disappeared.

The Savannah River data indicate that the appearance or disappearance of council houses at centers appears to be linked to changes in organizational structure, but it also suggests that council houses were common in outlying communities. The appearance of a rotunda at Irene occurred shortly after temple mound architecture, a visible symbol of chiefly organizational structure, disappeared and about the same time that the complex chiefdom centered at Mason's Plantation farther upriver apparently collapsed. A general replacement of chiefdom-level organization by more egalitarian social forms appears to have been occurring throughout the lower part of the valley at this time. The probable council house in the Beaverdam phase occupation at Rucker's Bottom, however, occurred when a chiefdom organizational structure was present, centered at the nearby Beaverdam Creek mound. The site record at Rucker's Bottom, in fact, indicates that probable council houses or public buildings were present throughout the period of Mississippian occupation, during the periods when first the Beaverdam Creek and then the Rembert centers were in ascendancy. The existence and use of public buildings, it is suggested, probably occurred throughout the Mississippian period in this general region. Their role as decision making centers, or 'council' houses, however, may have been diminished in more complex chiefdoms, particularly at ceremonial centers.

Fortifications and Political Change

Two types of fortifications were documented in the Savannah River Valley, stockade or ditch and stockade lines around entire communities, and stockade lines around the base or summit of platform mounds or rotundas. Whether these enclosures served as true fortifications or merely screening walls demarcating public or ceremonial precincts in each case is unknown. What is evident, however, is that their appearance signaled either the establishment of a chiefly center at a site, as indicated at Chauga, or the onset of a period of (presumably) increasing tension that in most cases resulted in organizational collapse or site abandonment, as documented at Irene (both occupations), Rucker's Bottom, Chauga, Tugalo and, possibly, at Lawton.

Fortifications surrounding entire communities or centers are documented at the Irene, Lawton, and Rucker's Bottom sites and, possibly, at Tugalo. At Irene the Savannah III phase semicircular enclosure surrounds both mounds, while smaller enclosures were built round and atop the platform mound itself beginning with Stage 3. In size, shape, and orientation with respect to the river the large Savannah III enclosure at Irene is nearly identical to the early Rembert phase semicircular enclosure at Rucker's Bottom, which dates to just after ca. A.D. 1375, somewhat later than the one at Irene. Sixty kilometers southwest of Rucker's Bottom a circular enclosure is also inferred to have been present about ca. A.D. 1350 to 1400 at the Shoulderbone site along the Oconee River (Williams and Shapiro 1986b). At Lawton mounds when the rectangular ditch line surrounding both mounds was built is unknown, although the site itself was apparently abandoned at the end of the Lawton phase or very early in the ensuing Hollywood phase, around or shortly after ca. A.D. 1300. A stockade line may have also surrounded the village at Chauga, although when it dated to could not be determined. At both Rucker's Bottom and Irene, and also apparently at Shoulderbone, the semi-circular to circular enclosures were replaced by rectangular enclosures somewhat later, after ca. A.D. 1350 to 1400, and possibly as late as ca. A.D. 1450. Both Irene and Rucker's Bottom were abandoned sometime after the rectangular fortifications were built.

Fortifications are documented around the margin or summit of the primary mounds at the Irene, Chauga, and Tugalo sites. At Chauga a stockade was built around the first mound stage, during the Jarrett phase. The presence of fortifications at this site, which appears to have been (with Tugalo) one of the first chiefly centers in the valley, suggests that Mississippianization locally may not have been an entirely peaceful process. That is, the emergent chiefly elites may have had (or felt they had) to maintain fortified centers until they consolidated their position. If these chiefdoms were established by people from outside the valley, as suggested by the strong ceramic similarities these sites have with centers like Etowah and Wilbanks in northwest Georgia, some protection from local populations may have been necessary. No fortifications were built around the next several stages at Chauga, however, suggesting this inferred period of tension passed fairly quickly. While the initial mound stage at Tugalo may have been surrounded by a fence, the excavation of this stage was not extensive enough to determine this one way or the other.

At Irene palisades appear around the Savannah III platform mound for the first time beginning in Stage 3, and continued through Stage 7, when the mound was abandoned. At Chauga a palisade reappeared around the platform mound during Stage 6, just prior to the end of the Jarrett phase occupation and the abandonment of the site for some two centuries. At Tugalo fencelines were found around both Stages 3 and 4, and both had burned. The presence of these fences suggests increased hostilities were occurring. It is not known, however, whether the presence of fortifications signaled conflict with other polities or increased factional competition locally. That is, fortifying mounds, if due to increased hostilities, may have been to make them final retreats for entire populations or, if indicative of increased factional competition, to make access to elites more difficult. Whatever the explanation, the appearance of fortifications was almost invariably followed by organizational change or collapse locally.

The similarity in the fortifications at Irene, Rucker's Bottom, and Shoulderbone, including how they changed over time, suggests a common tradition about what constituted proper fortifications in this part of the South Appalachian area. The absence of obvious bastions or multiple stockade lines, however, suggests that community defense may not have been an overwhelming preoccupation. The De Soto chroniclers, for example, did not report substantial aboriginal fortifications in their travels through the Southeast until they reached Chiaha in eastern Tennessee (Chapter III). The apparent absence of substantial fortifications in the central Georgia and South Carolina areas in 1540 is interesting, since a pronounced rivalry was reported between the provinces of Ocute, centered on the Oconee in Georgia, and Cofitachequi, centered on the Wateree in South Carolina (Hudson et al. 1985, 1987). Direct travel and/or warfare between these complex chiefdoms appears, however, to have been infrequent, as De Soto's army, assisted by recruits from Ocute, got thoroughly lost attempting to reach Cofitachequi (see Elvas in Bourne 1904, I:59-64).

The absence of major fortifications at the sites along the Savannah in the years immediately prior to the abandonment of much of the basin, suggests something other than large-scale warfare may have brought about the observed depopulation. The appearance of fortifications in the Savannah River Valley, after the initial period when chiefdoms were first becoming established, appears to have occurred first at Irene and Lawton in the lower part of the basin, and only later at sites upriver. This pattern is in agreement with the survey data from the basin that suggest the lower portion was abandoned first. A gradual retreat of population upriver, and possibly into adjoining drainages, may be indicated.

Mortuary Behavior and Political Change

Mortuary data from five sites in the Savannah River Valley indicate chiefdom organizational collapse is preceded by the relative impoverishment of local populations, as measured by the incidence of grave goods in burials. At Irene, Hollywood, Beaverdam Creek, Rucker's Bottom, and Chauga burials from the period immediately prior to site abandonment all exhibit a lower incidence of grave goods, and typically much less elaborate grave goods, than burials from earlier periods of occupation. This decline in grave goods incidence appears to reflect the diminishing involvement of local elites in prestige goods exchange networks. How this affected their ability to legitimize their status and position (*sensu* Peebles and Kus 1977), however, appears less certain.

At the Hollywood, Beaverdam Creek, and Chauga sites, prestige goods were most common during the earliest occupations, when these chiefdoms were presumably just getting started. At Beaverdam Creek and particularly at Chauga comparatively few burials in the last three stages of mound construction had grave goods, suggesting the pattern of impoverishment at these sites occurred over a period of several generations. If this is indeed the case (the burial data from the upper stages at Beaverdam Creek are very limited), it indicates that possession of prestige goods was not critical to the maintenance of power in these societies, at least in the short run (see also Welch 1986:189). Even after access to these symbols of power diminished or disappeared, elites were apparently able to maintain control for two or three more generations. While the Savannah River data thus support the argument that a decline in the occurrence of prestige goods likely signals a chiefdom in trouble, the fact that these societies were able to continue for some time anyway suggests organizational collapse probably occurred for a number of reasons. The incidence of prestige/grave goods at a center may thus indicate the relative stability or instability of a chiefdom's organizational structure, but by itself does not tell us the reasons for this condition.

The decline in the incidence of grave goods observed in the burials from the inner and outer enclosures at the mortuary at Irene, and in the Rembert phase village at Rucker's Bottom, occurs in contexts where chiefly organizational structures were either not present or else centered elsewhere. At Irene during the period when the mortuary was in use, the presence of a council house suggests a fairly egalitarian form of social organization was present, while at Rucker's Bottom, which also had a council house at this time, chiefly authority appears to have been based at Rembert. In both cases a decline in the incidence of grave goods characterizes the period prior to site abandonment. The fact that commoner populations were affected indicates patterns of impoverishment were society-wide, and not just centered on elites.

The mortuary data from the lower Savannah indicate the emergence of chiefdoms in this area was accompanied by a change from collective to individual interment, and increasing concern with distinguishing individual status differences. In the initial Mississippian components at Haven Home and Irene, burials were placed in low sand burial mounds. The first burials in these mounds were mass cremations, suggesting collective interment with little concern for individual status distinctions. Soon after, a pattern of individual interment began, with burials placed in low mounds or buried individually in village areas. At Haven Home there is evidence that the subsequent burials placed in the low mound built around the central feature were defleshed prior to interment. The existence of charnel houses and a pattern of secondary burial is inferred, suggesting continuity with earlier Woodland burial traditions (Brooks et al. 1982; Thomas and Larsen 1979).

A pattern of individual interment becomes common throughout the valley once chiefdoms are established. Elite status was marked by placement in or at the margin of mounds, and by the quantity and quality of grave goods. Some individuals were placed in vessels during the Middle Mississippian period, with this pattern most common among peoples using Savannah and early Irene ceramics. Whether charnel houses were present is unknown, although to date there is no evidence for them. This pattern of individual interment continues through the Cherokee occupations in the upper part of the drainage. After the disintegration of the chiefdom centered at Irene, however, a mortuary complex and enclosed cemetery area was built during the Irene I phase occupation, suggesting something of a reversion to earlier Woodland burial practices.

Limited evidence to indicate when and how chiefly succession may have occurred at chiefdoms in the valley was found at Hollywood and Beaverdam Creek. At Hollywood a series of burials with elaborate grave goods occurred seemingly together in the base of Mound B, suggesting the interment of a founding and certainly dominant elite. Mound construction may have proceeded upon the interment of the final individual, although given the period when this site was examined, the early 1890s, evidence about the existence of burial pits was not noted. At the Beaverdam Creek Mound a burial with unusual grave goods was found between the two earth-embanked structures, A1 and A2. The Beaverdam Creek burial, which was unquestionably interred during the period between the construction these two structures, offers the best evidence locally for an association between the death of an elite and mound stage construction. If this association is valid, the fact that several stages of mound construction have been documented at most of the centers in the Savannah River Valley that have been examined indicates these chiefdoms had an average lifespan on the order of several generations (Table 4). Hally (1987), in an analysis of occupation span at 24 mound centers from northern Georgia, noted that continuous occupation rarely exceeded 100 to 150 years, which he inferred was about the maximum time a Mississippian chiefdom could remain intact. This evidence illustrates the fragility of chiefdom political structures, and suggests even the most successful polities were unlikely to remain in place for more than 5 or 6 generations.

Paleobiological Evidence for Political Change

Throughout the Savannah River Valley there is evidence that commoners lived differently in life and were treated differently in death than elites during the Mississippian period. Summary data on the total burial sample recovered to date from the valley, by site, are presented in Table 19. At the Beaverdam Creek, Chauga, and I. C. Few sites burials were recovered from both mound and village contexts. In each case the burials in the village areas included a much higher incidence of females than burials from the mounds. In addition, mound burials tended to have a much higher incidence of grave goods. The only exception to this pattern was at Chauga, where a slightly higher proportion of the burials in the village area had grave goods than those in the mound. Interment of higher status individuals, a higher proportion of which were male, in mound as opposed to village contexts is indicated at these sites. At Irene, where data on individual interments are difficult to reconstruct from the report in some cases, Caldwell and McCann (1941:38) note that 40 burials were found scattered over the site in shallow pits, suggesting little care was taken in their interment. Only five of these burials had grave goods, furthermore, supporting the implication that they were lower status individuals.

Mortality data from Beaverdam Creek, where a detailed analysis of the skeletal materials was conducted (Blakely et al. 1985), indicate mound interment was reserved either for children or adults, with adolescents excluded (Table 17, Figure 49). This pattern is also indicated at the Chauga and I. C. Few sites, although the physical anthropological analyses conducted on the burials from these sites were far more limited, consisting of little more than approximate aging and sexing (Tables 5, 18). The data from these three sites do suggest that once past early childhood status had to be achieved, even among the elite, and the way this was done was by passing through adolescence. Hatch (1987), noting an unusually high incidence of stress markers on Dallas skeletons, has argued that adolescence was a period of intense stress for the children of elites (Chapter IV); survival of this period of training and testing may have been necessary to warrant burial in mound contexts in the Savannah River chiefdoms. The relative health of the individuals from Beaverdam Creek was good, with little evidence for disease or

Table 19. Mississippian Mortuary Data from the Savannah River Basin: Summary Data by Site

Site	Provenience	Total Burials	Male	Female	Child	Indet.	Incidence of Grave Goods	Dominant Burial Type	Relative Health
Haven Home	Central Feature	n/a	n/a	n/a	n/a	n/a	(100.0%)	Cremation	n/a
	Outer Mound	43	n/a	n/a	n/a	43	(28.6%)	Flexed	fair
Irene Burial Mound	Central Feature	7	n/a	n/a	n/a	n/a	(71.4%)	Cremation	n/a
	Outer Mound	99	22	19	n/a	n/a	(7.1%)	Flexed	n/a
Chauga	Stages 1-6	32	14	9	4	5	(34.3%)	Semi-flexed	n/a
	Village	9	1	4	2	2	(44.4%)	Semi-flexed	n/a
Beaverdam Creek	Mound	37	15	11	10	1	(35.1%)	Flexed	Good
	Village	9		5	3	1	(0.0%)	Semi-flexed	Good
Hollywood	lower division	7	n/a	n/a	n/a	7	(85.7%)	n/a	n/a
	upper division	4	n/a	n/a	n/a	4	(75.0%)	n/a	n/a
Rucker's Bottom	Beaverdam phase village	14	4	6	2	2	(50.0%)	Semi-flexed	Fair
	Rembert phase village	10	1	3	0	6	(10.0%)	Semi-flexed	Good

Table 19. (continued) Mississippian Mortuary Data from the Savannah River Basin: Summary Data by Site

Site	Provenience	Total Burials	Male	Female	Child	Indet.	Incidence of Grave Goods	Dominent Burial Type	Relative Health
Irene*	Stage 8	12	n/a	n/a	n/a	n/a	n/a	Flexed	n/a
	Mortuary structure	25	n/a	n/a	n/a	n/a	(100.0%)	Flexed; Urn burials	n/a
	Inner Enclosure	41	n/a	n/a	n/a	n/a	(34.1%)	Flexed	n/a
	Outer Enclosure	23	n/a	n/a	n/a	n/a	(21.7%)	Flexed	n/a
Chauga	Stages 7-10	21	7	2	5	7	(42.9%)	Semi-flexed	n/a
I. C. Few	Mound	10	4	1	2	3	(80.0%)	Flexed	n/a
	Village	4	1	2	0	1	(25.0%)	Flexed	n/a
Totals**		393	64	59	26	78			
Irene	Entire Site	265	74	75	54	62			
	Mortuary	89	23	24					

* Partial figures obtained from report. The total figures from the site at the bottom are from Hulse (1941:57).
** Based on total figures from Irene as provided by Hulse (1941).

pathology (Blakely et al. 1985:343-345). Although stature was calculated for a number of individuals, no evidence for a gradient, with taller burials towards the center of the mound (cf., Hatch's 1987:12 observation about Dallas mound burials) was observed, although given the extensive destruction of the core of the mound the burial sample from the center was limited.

Burials recovered from village contexts at Rucker's Bottom were also subjected to a detailed series of analyses (Butler 1986; Weaver et al. 1985; see also Chapter V). Although the evidence is inconclusive, the individuals dating to the Rembert phase appeared to be in somewhat better skeletal health than those dating to the Beaverdam phase. As noted in Chapter V, six of the 13 Beaverdam phase burials exhibited osteomyelitis, as opposed to only two of the 10 Rembert individuals, although when examined using a Fischer's Exact Test this incidence was not found to be statistically significant (p=.343; Butler 1986:173). The incidence of dental enamel hypoplasia was found to be similar in the two samples, occurring with a slightly higher incidence in the Beaverdam (N=6, 54%) as opposed to the Rembert phase individuals (N=5, 45%) with surviving teeth (Fischer's Exact p=.272; Butler 1986:171). The seemingly poorer health of the earlier population may be due to the inferred position of the village as a tributary community of the Beaverdam Creek center, which may have requisitioned food resources (see paleosubsistence discussion below). If the Rembert phase villagers were indeed in better health than those in the Beaverdam phase community at Rucker's Bottom, this suggests that the abandonment of the Beaverdam center, and the emergence of a complex chiefdom centered at Rembert, considerably farther away, resulted in a better diet for the inhabitants of Rucker's Bottom. This may have been brought about by the greater ability of the complex chiefdom to buffer periods of uncertainty (*sensu* Hatch 1987; Powell 1988), or it may be simply because Rembert was much farther away, and hence the village enjoyed greater autonomy. Finally, the climatic data indicate that much of the

Rembert phase was a period of unusually favorable conditions, at least until near the end of this interval (Chapter VI), which would have meant favorable harvests and probably some reduction in dietary stress.

Trace element analyses, employing atomic absorption spectrometry, were conducted on samples of bone from the Rucker's Bottom individuals (Butler 1986:103-118; Weaver et al. 1985:602-603). Levels of calcium, magnesium, zinc, and strontium were determined and compared over the individuals dating to the two phases (Table 20). No statistically significant differences were noted in the levels of calcium, magnesium, and strontium, although the Rembert phase burials were found to have lower zinc levels, suggesting decreased meat consumption or possibly a more diverse diet (Butler 1986:180-181; Underwood 1977). The Rembert sample also exhibited much greater variability in the incidence of zinc, magnesium, and in the ratio of strontium to calcium than the Beaverdam phase sample, something also suggesting greater variability in dietary patterns. The trace element data may reflect the conditions that are assumed to have existed toward the end of the phase when, if climatic conditions resulted in repeated harvest shortfalls, maize consumption was reduced or varied, and other food sources were exploited. It must be emphasized, however, that the samples on which these inferences are based are quite few in number, and that affects of diagenesis were not controlled.

Comparison of the Beaverdam phase populations at Beaverdam Creek and Rucker's Bottom, representing elite and commoner segments of the population, revealed patterns similar to those documented by Hatch (1974, 1976, 1987) in the Dallas chiefdoms of northwest Georgia and eastern Tennessee, relatively simple chiefdoms similar in scale to the Savannah River polities of the 12th and 13th centuries. Skeletal pathologies in the Beaverdam Creek Mound sample were rare, and most of the population was in good health. This situation contrasted markedly with that observed in the

Table 20. Trace Element Data from the Human Skeletal Sample at the Rucker's Bottom Site (9Eb91).

Burial	Phase	Zn	Trace Element Levels (ppm) Mg	Ca	Sr	Sr/Ca
1	Beaverdam	325	1511	344000	1082	3.14
2	Beaverdam	250	1204	365000	1716	4.7
3	Beaverdam	436	1025	371000	1259	3.39
4	Beaverdam	321	836	370000	611	1.65
5	Beaverdam	452	1488	353000	950	2.69
6	Beaverdam	341	964	360000	685	1.9
7	Beaverdam	374	910	367000	536	1.46
8	Rembert	409	887	374000	957	2.56
9	Rembert	178	901	372000	326	0.88
10	Rembert	235	1967	345000	641	1.86
11	Beaverdam	424	1055	361000	782	2.17
12	Rembert	283	1187	371000	687	1.85
13	Beaverdam	233	1073	381000	639	1.68
14	Rembert	145	1038	373000	749	2.01
15	Beaverdam	283	991	374000	657	1.76
16	Beaverdam	308	1181	365000	1156	3.17
17	Beaverdam	366	769	378000	577	1.53
18	Beaverdam	147	947	362000	495	1.37
19	Rembert	177	1078	368000	1180	3.21
20	Rembert	253	1075	369000	1144	3.1
21	Rembert	155	1368	356000	752	2.11
22	Beaverdam	416	822	366000	451	1.23
23	Rembert	448	958	395000	456	1.15
24	Unknown	228	911	372000	528	1.42

Sources: Burials 1 and 2: Weaver et al. 1985:602.
Burials 3 to 24: Roetzel-Butler 1986:120-166.

Beaverdam phase population at Rucker's Bottom, where most of the individuals exhibited some form of disease or pathology, something attributed to a poorer diet and a harder life than that enjoyed by the elites at the center. Evidence for a fairly stressful existence was also noted on the presumed commoner burials found at the Simpson's Field and Big Generostee Creek sites (Tyzzer 1985; see Chapter V). The physical anthropological analyses conducted to date with materials from the Savannah basin, although sometimes yielding ambiguous results, indicate that political conditions and status relations can be explored and documented using human skeletal remains.

Paleosubsistence Evidence for Political Change

Detailed analyses of paleosubsistence remains have been conducted at four Mississippian sites in the Savannah River Valley, at Beaverdam Creek (Fish 1985; Gardner 1985; Reitz 1985), Clyde Gulley (Aulbach-Smith 1984; Ruff 1984), Rucker's Bottom (Moore 1985; Scott 1985), and Simpson's Field (Gardner 1985a, 1985b; Wood 1986), all in the central Piedmont. These are the only assemblages for which published and quantifiable information is available, although floral and faunal remains are sometimes mentioned in other reports (Caldwell and McCann 1941:78-79; see also Campbell and Weed 1984: 134; Grange 1972:205-209). At two of the four Piedmont sites, Clyde Gulley and Simpson's Field, which dated to the Early Mississippian Jarrett phase and the later Middle Mississippian Rembert phase, respectively, comparatively few remains were found. At Beaverdam Creek and Rucker's Bottom, in contrast, much larger sets of paleosubsistence data were collected and analyzed. Comparison of the Beaverdam phase assemblages at these sites, a small mound center and a nearby village, indicate political relationships can be inferred from paleosubsistence data, specifically tributary demands and their effects on subsistence. At Rucker's Bottom, furthermore, comparison of subsistence data from the earlier and later communities indicate that the emergence of a complex chiefdom in this part of the drainage, coupled with a presumed pattern of greater subsistence autonomy, may have led to more focused hunting strategies, and apparently an increase in the use of wild plant foods, specifically acorns, as a source of carbohydrates beyond what was provided by maize.

Dependence upon intensive agriculture has been defined as a hallmark of Mississippian culture (Griffin 1967:189), and given the frequency with which domesticated plant remains, most typically corn, have been found on late prehistoric sites in the Georgia-South Carolina area, there is little doubt that intensive, agriculturally based food production characterized the local Mississippian adaptation, particularly after the Early Mississippian period (Anderson 1989; Hally and Rudolph 1986:46, 69). The dates of the initial appearance and subsequent large-scale adoption of agriculture in the area, however, remain unknown. Evidence for maize agriculture on Woodstock components in northwest Georgia is equivocal, and Macon Plateau, itself poorly dated, is perhaps the earliest site in the state where appreciable evidence for maize cultivation has been found (Hally and Rudolph 1986:32-33).

Evidence for the use of cultigens prior to the Mississippian period in the Savannah drainage is minimal, and later Woodland period subsistence locally appears to have been directed primarily to wild plant and animal resources. At Simpson's Field and Rucker's Bottom, and at G.S. Lewis in the Coastal Plain (Reitz et al. 1987), the only sites in the drainage with major Late Woodland components where detailed paleosubsistence analyses have been conducted, only limited evidence for the cultivation of domesticates has been found. This consisted of a squash rind fragment found in a late Swift Creek context at Simpson's Field (Gardner 1986a:390-391). No reliable evidence for the cultivation of corn has been found in Late Woodland features from anywhere in the drainage to date. As flotation processing comes to be increasingly utilized, and as carbon isotope analyses come to be conducted on human skeletal series, our knowledge of later prehistoric subsistence will undoubtedly improve.

By A.D. 1100 or shortly thereafter Mississippian settlement in the upper Savannah River area was characterized by a range of site types, including ceremonial centers, smaller villages, and isolated farmsteads. Maize agriculture was presumably established by this time, although the only evidence for this is a single fragment from the Jarrett phase structure at Clyde Gulley (Tippitt and Marquardt 1984:8-37). It is not until the subsequent Beaverdam phase, in fact, that corn remains are found in any quantity, at Beaverdam Creek and Rucker's Bottom (Gardner 1985; Moore 1985), and in lesser incidence at 9Eb92 (Campbell and Weed 1984:134). While agriculture may have only become important to subsistence after ca. A.D. 1200 locally, the samples upon which this inference is based are extremely limited. The actual contribution of maize to subsistence at various periods in the valley's prehistory will remain unknown until carbon isotope (C3/C4) and related analyses can be conducted on securely dated local Late Woodland and Mississippian skeletal series.

Indirect evidence for agricultural intensification has been found in the Savannah River Valley. A shift from mature to immature successional communities was indicated in the floral remains found at both the Rucker's Bottom and Beaverdam Creek, something probably the result of increased land clearance associated with agricultural food production. At Rucker's Bottom a marked increase in the number of floodplain tree species that were exploited (i.e., found carbonized in site features) occurred between the Beaverdam and Rembert components (Table 21), suggesting the vegetation around the site was becoming increasing disturbed due to clearance (Moore 1985:690-692). The increase in species diversity, the high incidence of pine, a pioneer species, and the decline in oak and hickory suggest an increasingly immature floodplain forest community. Palynological investigations conducted at the Beaverdam Creek site (Fish 1985) indicated a mixed pine and oak community had been present during the premound era. Both pine

Table 21. Species Ubiquity for Wood Charcoals, by Major Occupational Period, at the Rucker's Bottom Site (9Eb91).

Species	Pre-Mississippian (Archaic/Woodland)	Early Mississippian (Beaverdam)	Later Mississippian* (Rembert)	Structure 2 (Rembert)
Southern Pine	70.86	82.96	78.57	98.00
Quercus	26.00	60.83	49.07	73.00
Carya	44.95	47.21	11.93	44.00
Salix/Populus	4.76	5.33	7.29	6.00
Fraxinus	4.76	1.47	2.43	13.00
Diospyros	-	18.34	2.43	23.00
Fagus	-	1.47	4.86	-
Acer	-	2.57	4.74	8.00
Liriodendron	-	-	2.43	-
Juglans	-	-	7.24	6.00
Cornus	-	-	2.45	2.00
Ulmus	-	-	2.38	4.00
Aesculus	-	-	2.36	2.00
Gleditsia	-	-	-	4.00
Cane	4.76	15.59	18.88	31.00
Total Number of Identifiable Species	6	9	14	13

Source: Moore 1985:682.

* = excluding Structure 2.

and non-arboreal pollen were heavily represented, indicating that the area around the site was in an early stage of succession, something possibly related to field clearing. When the platform mound stages were under construction the incidence of pine was even higher, and traces of maize pollen were found, suggesting increased field clearing associated with intensive agriculture (Fish 1985:411-416; Rudolph and Hally 1985:27-28).

The Beaverdam phase village at Rucker's Bottom was characterized by a highly diversified subsistence economy, making use of a wide range of plant and animal resources in addition to agricultural domesticates (Chapter V). The diversified subsistence economy might be a reaction to tribute demands, since at this time the village was apparently subservient to the center at Beaverdam Creek. The use of a wide range of species might result from a need to replace the kinds of foodstuffs presumably leaving the site, such as corn and deer or other large mammal meat, with wild plant foods and meat from a range of smaller animals. The skeletal analyses described previously indicated the Beaverdam phase inhabitants of Rucker's Bottom were in rather poor health, supporting such an inference.

The early Beaverdam phase population at Rucker's Bottom and at Beaverdam Creek apparently made greater use of corn than nuts, and hickory nuts than acorns. In the later Rembert phase village at Rucker's Bottom, in contrast, a relative decline in the use of corn and an increase in the use of nuts occurred, with a particular emphasis on acorns (Moore 1985:686-692). This pattern may be seen in Figure 114, illustrating the proportional occurrence of corn, acorns, and hickory nuts at the Beaverdam Creek Mound site and in the Beaverdam and Rembert phase components at Rucker's Bottom (see also Figure 69). A high incidence of nut remains, particularly acorns, was also observed in the Rembert phase component at Simpson's Field (Gardner 1986b:377-386). The increased use of wild plant resources in the later Mississippian occupation at

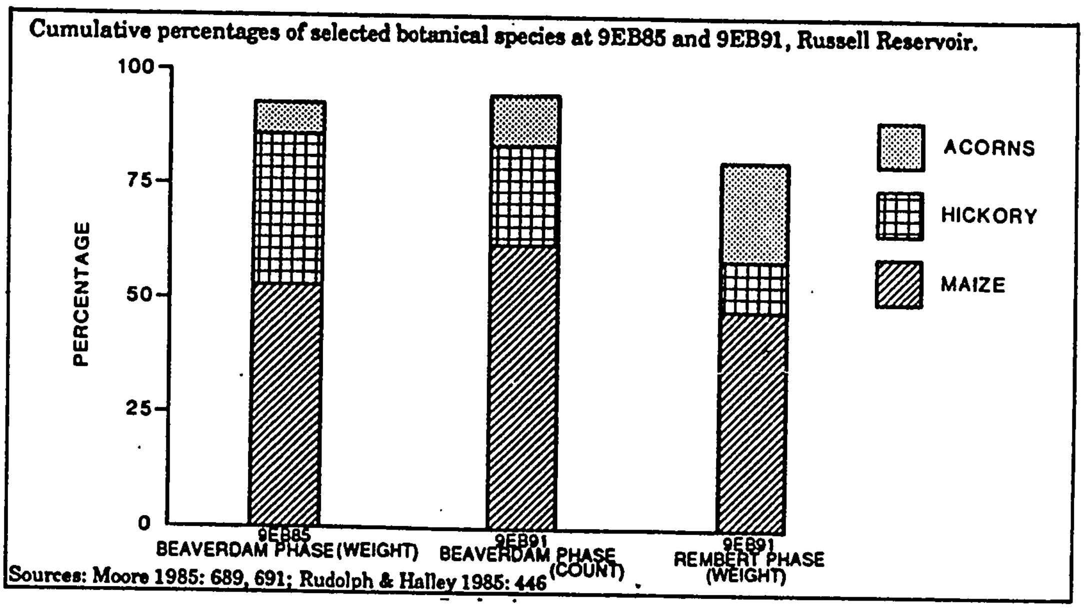


Figure 114. Cumulative Percentages of Acorn, Hickory, and Maize at the Rucker's Bottom and Beaverdam Creek Sites.

Rucker's Bottom and Simpson's Field, notably the increased use of acorns, may reflect an attempt to augment carbohydrate yields, which may indicate the population was under some stress. Alternatively, if local Rembert phase populations had become relatively free of tributary obligations, given the abandonment of the Beaverdam Creek mound center, less emphasis may have been placed on corn production. Subsistence stress may be a more plausible alternative, given the fact that the entire central and lower Savannah drainage was apparently abandoned at the end of the Rembert phase, and that climatic conditions deteriorated in the period just prior to this abandonment. During the probable period of repeated harvest shortfalls that ensued, use of acorns may have been necessary to overcome the loss of agriculturally produced carbohydrates.

The Beaverdam phase faunal assemblage from Rucker's Bottom was very similar to that recovered from the Beaverdam Creek Mound (Reitz et al 1987:217; Scott 1985:661) (Table 22). A greater abundance of fish at the Beaverdam Creek Mound and of small mammals at Rucker's Bottom were the principal differences between these assemblages. The difference in fish remains may reflect proximity to suitable fishing grounds. Major shoals occur both to the north and south of the Beaverdam Creek site on the Savannah, but were not present for several kilometers above or below Rucker's Bottom (Rudolph and Hally 1985:444). The greater use of small mammals at Rucker's Bottom may, as noted above, reflect a higher level of dietary stress among village or commoner populations than among the elites at the center. Beaverdam phase occupations at both Rucker's Bottom and Beaverdam Creek were characterized by fairly high species diversity, something that was interpreted as reflecting either procurement during warm weather, or a diversified subsistence strategy (Scott 1985:663; Reitz et al. 1987:217).

The Rembert phase faunal assemblage at Rucker's Bottom, in contrast, had a much lower species diversity and consisted almost entirely of large mammal remains (Table 22), suggesting either fall/winter procurement, or a shift toward an increasingly

Table 22. Relative Contribution of Broad Taxonomic Groupings By Weight, in the Faunal Assemblages from the Beaverdam Creek and Rucker's Bottom Sites.

Taxonomic Category	Beaverdam Creek	Rucker's Bottom Beaverdam Phase	Rucker's Bottom Rembert Phase	Rucker's Bottom Unidentified Mississippian
Large mammal	5110.3 (80.3%)	2012.1 (79.6%)	5362 (92.4%)	1036.9 (83.5%)
Small mammal	33.83 (0.5%)	71.5 (2.8%)	29.8 (0.5%)	24.4 (2.0%)
Bird	369.4 (5.8%)	173.1 (6.8%)	185.2 (3.2%)	57.5 (4.6%)
Turtle	720.23 (11.3%)	241.1 (9.5%)	215.6 (3.7%)	108.6 (8.7%)
Snake	5.17 (0.1%)	9.3 (0.4%)	1.6 -	1.2 (0.1%)
Amphibian	0.5 -	3.9 (0.2%)	0.4 -	1.2 (0.1%)
Fish	127.56 (2.0%)	18 (0.7%)	9.4 (0.2%)	12.6 (1.0%)

Source: Scott 1985:656, 662

focused subsistence economy. Fall/winter hunting is not implausible, since this is the period when deer were presumably in the best condition, with the greatest amounts of protein and fat (Smith 1975:33). There is considerable evidence to indicate that human hunting strategies are linked to fat quantity in the target prey population (Jochim 1976, 1981:82-90; Binford 1978:157-163, 465-466; Speth and Spielmann 1983:18-21). Since both villages at Rucker's Bottom and the center at Beaverdam Creek are assumed to have been occupied year-round, a change from a diversified to a more focused hunting strategy, with perhaps more fall/winter hunting, is considered the more plausible explanation for the observed patterning at the two sites (Rudolph and Hally 1985:444). The faunal assemblage from Rembert phase component at Simpson's Field, assumed to be a hamlet, also indicates focused game procurement, with white-tailed deer (*Odocoileus virginianus*) accounting for much of the assemblage (Wood 1986:372).

The apparent intensification in large mammal procurement between the Beaverdam and Rembert phase may have been brought about by a need to maximize hunting return and reduce the amount of labor such procurement entailed, labor that might have been needed elsewhere, possibly for farming or defense. Given the evidence that Rucker's Bottom was occupied for an extended period, it might also reflect the depletion of game in the locality. Speth and Scott (1985) have documented reasons why increasingly focused game procurement can occur in agricultural populations:

> Greater horticultural commitment increases the need for efficient sources of high-quality protein, at least seasonally. It also introduces time and labor constraints that necessitate the rescheduling of hunting activities to more restricted periods of the year. Larger and more stable communities also degrade their immediate environs and deplete locally available game, forcing hunters to travel greater distances to productive hunting areas. Together, these factors favor the taking of selectively greater proportions of larger, higher-yield prey... (Speth and Scott 1985:257).

Hunting directed to a few large species is clearly indicated during the Rembert phase at Rucker's Bottom and (although the sample is small) at Simpson's Field. Early in the

Rembert phase, when favorable climatic conditions apparently occurred over an extended period (Chapter VI), agricultural intensification may have taken place, since harvest returns would have been consistently favorable. An increasingly focused hunting strategy may have been one consequence of this. Given the decline in agricultural food production later in the Rembert phase, moreover, wild food resources would have become even more important, as local populations attempted to find alternative food resources. Hunters may have had to go even farther to find game. Given the evidence for increased conflict, specifically the appearance of fortifications at Rucker's Bottom, Mississippian populations from the upper Savannah may have been forced to spend increasing amounts of time in the interriverine buffer zones precisely when it was increasingly precarious to do so. This may have in turn led to increased casualties and hastened the organizational collapse that ensued.

The faunal remains from Rucker's Bottom also indicate the apparent position of the community in the local political hierarchy. Scott (1981, 1982), in a faunal analysis employing materials from a small hamlet (Yarborough) and a ceremonial center (Lubbub Creek) located along the Tombigbee River, has shown that the occurrence of skeletal elements may indicate whether and in what direction subsistence resources were being transferred between communities. Some evidence was found to suggest that the Beaverdam phase village at Rucker's Bottom was submitting tribute elsewhere, probably to the Beaverdam Creek center, and that this pattern ceased in the Rembert occupation (Scott 1985:662-664). Deer/large mammal skeletal element distributions differed between the earlier and later occupations at Rucker's Bottom (Table 23). During the Beaverdam phase component the reduced incidence of limb bones indicated these meaty elements (i.e., hind or forequarters) may have been leaving the site, possibly as tribute. An analysis of deer element incidence at Beaverdam Creek, interestingly, found almost twice as many hindquarter elements, probably the most preferred meaty cut on the

Table 23. Percentage by Weight of Deer and Large Mammal Anatomical Parts from the Rucker's Bottom, Beaverdam Creek, Yarborough, and Lubbub Creek Sites.

Element	Expected	Rucker's Bottom Beaverdam Phase	Rucker's Bottom Rembert Phase	Lubbub Creek (center)	Yarborough (farmstead)
Skull	11.9	9	13.9	10.1	12.3
Axial	25.5	6.3	4.8	9.2	3.7
Long Bone	44	56.4	61.7	64	54.8
Feet	18.9	19.3	9	9.2	19.6
Indeterminate	0	9	10.7	7.6	9.7

Source: Scott 1985:662

Beaverdam Creek Mound

Count of Deer Anatomical Parts	
Skull	271
Vertebra	18
Forelimbs	63
Forefeet	12
Hindlimbs	63
Hindfeet	69
Feet	101
Other	56
Total	653

Source: Reitz 1985:424

animal, than forequarters (N=75 forequarter and 132 hindquarter elements; Reitz 1985:424), supporting the inference that the occupants at this site were the recipients. In the later Mississippian Rembert phase community at Rucker's Bottom, in contrast, this pattern was not evident and the sample was more similar to that expected at a ceremonial center. Scott has noted:

> The differences between the early and later Mississippian components at Rucker's Bottom suggest a change in settlement function through time, from a more subservient role during the earlier period (with greater quantities of meat being transported from the village) to a higher position in the socio-political hierarchy in the later period (perhaps with meat coming in, but certainly with less meat going out) []Scott 1985:664]

This patterning is consistent with changing political relationships along the Savannah, notably the decline of the Beaverdam Creek site and an apparent relocation of power to Rembert after the Beaverdam phase. These changing political fortunes may have resulted in increased autonomy for the Rucker's Bottom community, and reduced tribute demands on the local population.

CHAPTER VIII.

CONCLUSIONS: ANALYZING CYCLING BEHAVIOR IN CHIEFDOM SOCIETIES

Introduction

This study has attempted to explore reasons why political change occurs in chiefdoms, and how this subject may be examined using archaeological data. Its central purpose has been the examination of cycling behavior, which was formally defined as the transformations that occur when administrative or decision-making levels within the chiefdoms occupying a given region fluctuate between one and two levels above the local community. Cycling is thus the recurrent process of the emergence, expansion, and fragmentation of complex chiefdoms amid a regional backdrop of simple chiefdoms. To explore this topic from a regional perspective, the Mississippian chiefdoms of the Southeastern United States, and specifically within the Savannah River basin, were examined at length.

Evidence for political change is common in the archaeological record of the Southeast, as has been documented in the regional overview in Chapter IV and in the intensive examination of the Savannah River locality in Chapters V through VII. Mississippian chiefdoms varied appreciably in size and organizational complexity, and hundreds if not thousands of these societies emerged, expanded, and then fragmented across the regional landscape during the period from ca. A.D. 800 to 1600. In the absence of any kind of historical data for most of these societies, archaeological analyses are critical to understanding their history, including patterns and causes of political and organizational change within them. The Mississippian archeological record, this study has attempted to demonstrate, has a great deal to contribute to the study of chiefdom political development and to cultural evolution in general. The chiefdoms of the Southeast existed just a moment ago in time when compared to most other parts of the world. Given the extensive field research that has occurred within the region over the past century, the archaeological record of these chiefdoms is extensive and well suited to the analysis of political change.

For the most recent chiefdoms, furthermore, the ethnohistoric record from the Southeast complements the archaeological record and offers guidance in its interpretation. Accounts from the early contact era include descriptions of the nature of chiefly succession, mechanisms by which chiefly authority was maintained, chiefly warfare and tribute flow, ideological and organizational structures, the existence and operation of buffer zones, the abandonment of towns and centers, and the effects of defeat in warfare or other disasters on settlement and political structures. Much of this study has been directed to showing how these kinds of phenomena can be investigated using the Mississippian archaeological record.

Political Change in Chiefdoms: Lessons from the Savannah River Valley

Political change in chiefdoms is related to a wide range of factors, including topics as diverse as the characteristics of primary and secondary chiefdoms; the strength and importance attached to legitimizing ideological structures, such as ties with ancestral elites, the occupation of centers of power, and the role of chiefly iconography; scale/time-depth dependent relationships between sacred and secular mechanisms for maintaining authority structures; rules of succession, inheritance, marriage formation, and post-marital residence; and ecological parameters, including both coarse-grained and fine-grained environmental structure, climatic perturbations, and the structure and stability of resource procurement/buffer zones. The investigation of all of these these factors, I have argued and I hope to some extent demonstrated, is necessary to understand organizational change in chiefly polities, and specifically in the Mississippian chiefdoms of the Southeastern United States.

Studying political change in prehistoric chiefly societies thus requires the intensive, thoughtful examination of a wide range of evidence including archaeological, paleoecological, paleosubsistence, paleoanthropological and, where available, historic and ethnohistoric data. The interdependence and interrelatedness of these kinds of phenomena and data must be acknowledged if topics of the complexity of searching for the causes of political change are to be successfully examined by archaeologists. In the Savannah River basin we have seen how change in climate, and within the regional political landscape, resulted in identifiable and in some cases quite localized changes in health, subsistence, demography, mortuary behavior, and architecture. Recognition of these patterns required the examination and linkage of paleoclimatic, ethnobotanical, zooarchaeological, and human skeletal data, over and above perhaps more traditional kinds of archaeological evidence.

In the Savannah River basin, the emergence of major multi-mound centers, and presumably complex chiefdoms, was coupled with the abandonment of smaller centers. This suggests that with the emergence of complex chiefdoms, at least locally, the elites at lesser centers were relocated or suppressed, presumably to minimize their chances of mounting or legitimizing a successful challenge to chiefly leadership. At the same time, however, there is some evidence to suggest that commoner populations in outlying villages may have exercised somewhat greater autonomy than previously, perhaps to fill the localized leadership vacuum. Why some centers in the valley were abandoned remains unknown, although in some cases it appears this process was part of the formation of complex chiefdoms. For example, the activities undertaken at several centers abandoned between ca. A.D. 1300 and 1400, including possibly Irene, Lawton, Hollywood, Beaverdam Creek, Tate, and Fortson, were apparently subsumed by the much larger centers that emerged at this time, at Mason's Plantation and Rembert. This suggests that, locally, the development of increasing social complexity was coupled with increasing centralization of authority at the expense of smaller centers. Once the two large centers, Rembert and Mason's Plantation, were abandoned, smaller centers reappeared in the upper and extreme lower parts of the basin.

While much of the basin was abandoned after ca. A.D. 1400, the pattern of abandonment, with the lower portions seemingly abandoned earlier than those areas upriver, appeared to be to tied in some way to regional physiographic and biotic conditions, notably the narrow width of the lower basin, the scarcity of larger tributaries, and the low biomass potential of the interriverine zone. This suggested that chiefdoms that were perhaps most vulnerable to subsistence stress succumbed more easily to destabilizing processes. The distribution of Mississippian assemblages over the landscape, and specifically projectile points, appears to provide clues about how regional resource structure influenced patterns of land use, and how buffer zones between polities formed and operated.

While Mississippian settlements in the Savannah River basin were apparently restricted to fairly small areas, hunting activity occurred over a much larger region. Differential use of the interriverine Coastal Plain and Piedmont was observed, something that appears related to the different biotic structure of the two areas. In the Piedmont, where hardwoods and wild game resources were widely distributed, hunting in the interriverine zone was inferred from an increased incidence of projectile points, and particularly projectile points made of extralocal raw materials. In the Coastal Plain, in contrast, where game tended to be more concentrated along drainages, projectile points coverage improves, it may be possible to examine artifact distributions at progressively finer intervals, and by so doing resolve new information about land use, hunting territories, and buffer zones.

An examination of localized paleoclimatic data for the period of later Mississippian settlement, from A.D. 1300 to 1600, coupled with analyses of the effects of differing storage strategies, suggests a direct relationship between climate and political conditions in the valley. Dramatic social and political changes were observed in the valley's chiefdoms about the same time that extended periods of decreased rainfall are inferred, conditions that probably would have stressed local agricultural systems. Four major periods of postulated decreased rainfall were found that corresponded to times, first, when several simple chiefdoms collapsed and complex chiefdoms formed (ca. A.D. 1300 to 1340); secondly, when fortifications appeared at one and possibly two sites and one of the valley's two complex chiefdoms appears to have collapsed (ca. A.D. 1370 to 1400); thirdly, when the central and lower part of the valley were abandoned (ca. A.D. 1440 to 1485); and, in the final case, when the Spanish colony at Santa Elena was undergoing severe drought-induced food stress (ca. A.D. 1565 to 1575). The relationship between climate and political change, while profound, was not found to be invariably direct, however. The Savannah River Valley remained unoccupied throughout the 16th century, even though climatic conditions rebounded at the end of the 15th century, and were unusually favorable for the first half of the next century.

The analysis of storage strategy found that maintaining a single year's food reserves enabled local populations to buffer most year-to-year shortfalls in production. From the ethnohistoric record, this appears to have been the storage strategy that was in fact used by the region's complex chiefdoms. Coupled with modeled crop production data derived from the paleoclimatic record, the analysis of storage strategies permitted an examination of how the valley's chiefdoms might have been affected by and reacted to the climatic changes postulated for the later Mississippian period. When climatic conditions were close to normal for extended periods, as they were about two-thirds of the time from A.D. 1300 to 1600, this inferred typical Mississippian storage strategy would have ensured there would be few if any years of great privation.

Maintaining one additional year's food reserves did not, however, enable local populations to escape the effects of extended periods of climatic deterioration, which occurred on four occasions. No reasonable storage strategy, in fact, would have enabled local Mississippian populations to avoid stress during three of the four extended periods of decreased moisture, although maintaining two years of reserves would have enabled them to make it through the period from ca. A.D. 1370 to 1400 with few ill effects. What the probable Mississippian storage strategy of maintaining one year's reserves did ensure, however, was that the effects of declining harvest yields were spread out over time, giving local populations more time to switch to other resources. While the effects of an extended period of drought would have undoubtedly been quite severe, in most circumstances populations would not be immediately thrust into a crisis situation. Since long-term changes in climatic locally, at least from A.D. 1300 to 1600, occurred fairly gradually, this storage strategy would have been quite viable.

A wealth of archaeological evidence for political change was found on Mississippian sites in the Savannah River basin. The emergence of stratified chiefdoms was characterized by a replacement of earth-embanked structures or council houses by structures atop platform mounds at Irene, Beaverdam Creek, and possibly at Tugalo. A council house reappeared on at least one site, Irene, following the abandonment of the platform mound. These architectural changes are linked to changes in organizational structure, from decision-making by consensus to decision-making in the hands of an elite. The presence of council houses on a site does not, however, indicate an egalitarian social system was present. Council houses were observed in the Rucker's Bottom villages, both when the nearby Beaverdam Creek site was the center of a presumed simple chiefdom and later when Rembert was apparently the center of a complex chiefdom. This suggests that outlying communities had at least some autonomy or control over local affairs in even the most complex chiefdoms. It further suggests that council houses or public decision-making forums were probably in use throughout the Mississippian period locally, although their role was probably diminished at chiefly centers.

The Savannah River data also indicate that the appearance of fortifications in many cases signals either the emergence or collapse of chiefly organizational structure. For example, fortifications appeared both around entire communities (i.e., at Irene, Lawton, Rucker's Bottom, and possibly Tugalo) and around or atop platform mounds (i.e., at Irene, Chauga, and Tugalo) prior to their abandonment, and at Chauga when the center was first founded. Collapse does not appear to follow inevitably or at least immediately when fortifications appeared, however. The center at Irene continued to be occupied for some time following the appearance of fortifications around Stage 3, with platform mound construction ceasing only following Stage 7, presumably several generations later. The presence of fortifications does not appear to signal the occurrence of intensive warfare, since there is little evidence for conflict in the archaeological record of the Savannah River chiefdoms, even in the period leading up to the abandonment of the central and lower basin. What the appearance of fortifications may signal is that the position of the elite, and the socio-political environment, was becoming less secure.

Evidence for an impoverishment of chiefly centers prior to their abandonment was documented through mortuary analyses at several centers in the basin, including at Irene, Hollywood, Beaverdam Creek, and Chauga. At all of these sites a decline in the proportional occurrence of burials with grave goods, and particularly with elaborate grave goods of shell or copper, occurred in the later periods of occupation. A similar decline in the occurrence of grave goods was observed in the commoner burials at Rucker's Bottom prior to the abandonment of that site, suggesting (if not a change in mortuary practices) that these trends may have reached all levels of society.

Most significantly, the mortuary evidence from the Savannah River basin indicates elite impoverishment did not lead immediately to organizational collapse, a finding somewhat different than predicted from earlier arguments (Peebles and Kus 1977:425,430). Instead, at several centers, including Hollywood, Beaverdam Creek, and Chauga, one or more later stages of mound construction occurred during periods characterized by a significant decline in the occurrence of prestige goods in burials. Elite control did not, therefore, appear to depend upon these symbols, at least over the short run. At Irene, furthermore, the decline in the incidence of grave goods in burials in the mortuary, from the period following chiefdom collapse yet prior to site abandonment, indicates this kind of impoverishment may also signal trouble in more egalitarian societies. All of this suggests that great care must be taken when inferring chiefdom organizational collapse to a decline in the availability of prestige goods.

Paleobiological evidence for political change was hinted at in the Rucker's Bottom skeletal sample, where the site's later inhabitants appeared to be in somewhat better health during the period when the Rembert chiefdom was in place than previously, when the site was under the control of the Beaverdam Creek center. Zooarchaeological analyses, specifically of deer element occurrence, indicated the earlier Beaverdam phase village at Rucker's Bottom was relinquishing food, presumably to the Beaverdam center, in the form of tribute. The position of the two sites in this tributary economy appears to have possibly affected the health of their inhabitants, since the occupants of the Beaverdam Creek site were in much better relative skeletal health than those at Rucker's Bottom. Once the Beaverdam Creek center was abandoned the relative skeletal health of the Rucker's Bottom villagers appears to have improved considerably (although the sample sizes are small), and the faunal analyses indicate meat was no longer leaving the site. If the change in skeletal health observed at Rucker's Bottom was related to the collapse of the Beaverdam Creek center and the emergence of Rembert, it suggests that either the presence of complex as opposed to simple chiefdoms, or increasing village autonomy, or both, translated into better health for local Mississippian commoner populations.

Finally, the emergence of intensive agriculture in the Savannah River basin was recognizable not only from the presence of corn and other domesticates in the archaeological record, but also from evidence for land clearing and successional change in forest composition. A highly diversified subsistence economy characterized the early Mississippian occupations at both Beaverdam Creek and Rucker's Bottom, suggesting the early Mississippian economy was less focused than that observed in later periods. At Rucker's Bottom, at least, the adoption of a diversified diet may have been prompted by subsistence stress, notably the imposition of tributary demands. Increasingly focused subsistence, with greater use of deer and acorns, was observed in the later village occupation at Rucker's Bottom, suggesting a concern with maximizing hunting return and carbohydrate production. This may have been a combined response to population increase, and increasingly intensive agricultural food production, requiring the adoption of more efficient hunting strategies, and alternative or additional carbohydrate sources, following arguments developed by Speth and Scott (1985). It may have also been necessitated by the extended occupation of the village, which may have depressed local game resources, requiring more extended and efficient hunting efforts. The Savannah River data thus indicate that diet, as reflected in paleosubsistence and paleobiological evidence, may provide clues about political relationships, settlement longevity, and hunting patterns.

Why Was the Savannah River Abandoned?

This study was initiated in part to examine the question of whether and why much of the Savannah River basin was abandoned late in the prehistoric era. As we have seen, the archaeological record from the basin indicates that something dramatic did happen in the 15th century. That a large-scale abandonment took place can no longer be seriously challenged. After ca. A.D. 1450, there is no evidence to indicate any mound centers were occupied below the headwaters of the river. Only a few Late Mississippian components, most of them near the Oconee River, in fact, have been found among the thousands of prehistoric sites that exist from the central and lower valley. Artifacts dating from the interval ca. A.D. 1450 to 1600 are virtually nonexistent in this part of the valley, even though several thousand collections were examined in conjunction with the present project. Mississippian components, which showed a pattern of increase over the centuries from ca. A.D. 900 to 1450, exhibited a pronounced drop after this time.

Most of the post-A.D. 1450 occupation of the central and lower valley, at least until the late 17th century when evidence for native occupation reappears, is minimal and probably derives from ephemeral occupations, possibly representing little more than hunting camps or temporary settlements by groups based elsewhere. The only area where later sites occur with fairly extensive assemblages, indicative of more permanent hamlet or village occupations, is in the extreme western part of the basin along the upper Little and Broad rivers near the Oconee River. These occupations have been interpreted as representing a western boundary of the dense 16th-century Oconee province, and possibly indicative of populations moving into the political and settlement vacuum left by the abandonment of the Savannah River (Kowalewski and Hatch 1988). No evidence for extensive assemblages indicative of multiple hamlet or village occupations have been found to date elsewhere in the central and lower basin.

The analyses presented in Chapters VI and VII indicate the abandonment of the central and lower Savannah was caused by combination of several factors, of which changes in environmental conditions and in the regional political landscape were perhaps the most important. The rise of the rival provinces of Ocute and Cofitachequi, which were separated by an extensive buffer zone at the time of the De Soto entrada in 1540, appears to be an important part of this story. The populations of Cofitachequi and Ocute observed in the early contact era were extensive and, at least in the case of Ocute, were apparently also increasing dramatically (Rudolph and Blanton 1981; Ranjel in Bourne 1904:89-102, 140; Elvas in Bourne 1904:55-69). It is suggested that the successful growth of these chiefdoms was, at least in part, at the expense of the polities along the Savannah River. Fortifications appeared at several sites along the Savannah in the last century prior to the abandonment, including at Irene and Rucker's Bottom, possible evidence for political circumscription and increasing tension and, perhaps, overt hostilities between the chiefly polities along the Savannah, the Oconee, and the Santee/Wateree rivers. The populations of Cofitachequi and possibly Ocute as well may have encroached on the Savannah River polities traditional hunting preserves, or even been actively raiding settlements.

Coupled with this, the late 15th century was, at least locally, a period of environmental deterioration, specifically decreased rainfall, that would have put additional stress on Mississippian political systems throughout the immediate region. Increased raiding has been documented during periods of drought in the Southwest, as groups attempted to overcome food shortages by obtaining the stored resources of their neighbors (Burns 1983:136ff). The abandonment of a series of villages that, weakened by drought and famine conditions, were increasingly subject to raiding, is specifically mentioned in these records. Faced with repeated harvest shortfalls, the inhabitants of the Savannah River would have been forced to make increasing use of alternative resources, including game from the interriverine buffer zones. Given a moderate level of storage, food shortages resulting from deceased rainfall would have been deferred long enough for local populations to switch over to other food resources. Unfortunately, the populations of the Savannah River would be seeking alternative resources at precisely the period when the expansion of their neighbors would have made the use of such resources, at least game and other foodstuffs from the buffer zones, increasingly precarious.

Repeated years of poor harvests would have put a great deal of strain on the agriculturally based political structures, particularly the ability of the elites to mobilize tribute. It is unlikely that climatic deterioration by itself could have brought about the collapse of chiefly authority observed in the Savannah basin after ca. A.D. 1450, since the valley's chiefdoms survived two earlier periods of prolonged drought, in the early and again in the late 14th century. The Savannah River chiefdoms do not appear to have been threatened by rivals in the regional political landscape during these earlier periods, however. A continued pattern of crop failure or harvest shortfall, coupled with small but steady (if not increasing) losses in warfare or hunting activity, would pose increasingly insurmountable challenges to the authority of the Savannah River elite, by deflating their aura of sanctity, ability, and invincibility. It would also affect their ability to mobilize tribute, and hence maintain their position and that of their followers. Thus, the elites in the Savannah River chiefdoms of the mid-15th century were facing difficulties both locally, in the form of crop failures, and in the external political arena, where their neighbors were gaining the upper hand, both in power and prestige.

While the circumscription of the Savannah River chiefdoms may have developed gradually, over the course of several generations the effects were quite severe. That circumscription could operate over great distances is indicated a century later, when one of the leaders of Ocute told De Soto that, due to the power of Cofitachequi, the local population had "not dared expand or go beyond their own boundaries" (Vega in Varner and Varner 1951:284). Given this testimony of the effect Cofitachequi had on its neighbors in central Georgia in 1540, it is possible they may have had an equally or more marked impact on the Savannah River chiefdoms of a century earlier.

The relocation of much of the valley's population to other areas, and specifically to more successful leaders, is interpreted as the ultimate result of the gradual circumscription and demoralization of the Savannah River chiefdoms. Since little clear evidence for intensive warfare has been found anywhere along the middle and lower Savannah (although only a few sites have been extensively examined), an immediate question that arises is what happened to the people when these centers collapsed and, ultimately, the whole lower portion of the drainage was apparently abandoned? It has been suggested that only the organizational structures collapsed, with local populations remaining, but reverting to a more typically "Woodland" settlement patterns and social organization, including ceramic finishes popular during that period, such as cord marking (Mark J. Brooks: personal communication 1989). This appears unlikely, however, given that no direct evidence for these kind of occupations have been found in the central and lower drainage.

At least some of the people appear to have retreated to the north, into the headwaters area. Late Mississippian sites are common in this area, much more so than earlier Mississippian sites, suggesting considerable localized population increase occurred. The Estatoe center appears, Chauga was re-occupied after lying deserted for two centuries, and occupations continued at Tugalo, which had itself been re-occupied only about a century earlier. At Estatoe the replacement of earthlodge-like structures by a true platform mound after Stage 5 suggests this center acquired greater prominence within a few generations of its founding. Although mound construction ceased in the headwaters by or shortly after ca. A.D. 1600, as it did throughout most of the region, the upper part of the valley continued to be occupied until well into the colonial period, when it was the location of many of the Lower Cherokee Towns. The formation of these towns, and thus of the historic Lower Cherokee, may thus be partially a response to political developments between the 15th-century Mississippian chiefdoms of central

Georgia and South Carolina.

A major increase in population has also been documented in the central Oconee drainage during later Mississippian times, after ca. A.D. 1500 (Kowalewski and Hatch 1988; Rudolph and Blanton 1980). Some of this increase, it is argued here, is the result of a direct relocation of people from the Savannah River Valley. Tenuous evidence for this relocation has been suggested by the appearance of ceramic assemblages resembling Rembert phase materials at one site along the upper Oconee (Ledbetter and Wynn 1988), although a massive influx of such materials, on a range of sites, would be much more convincing. A relocation of Savannah River Valley populations into the Oconee basin and the province of Ocute, rather than eastward into the Santee/Wateree basin, which was controlled by Cofitachequi, seems more probable for a number of reasons. First, in the central Piedmont the Oconee and Savannah basins lie adjacent to one another, making travel and communication between these two areas straightforward. The Little and Broad rivers, major tributaries of the Savannah, in fact, extend almost to the main channel of the Oconee (Figure 95). At least one Mississippian mound center, Fortson, which was occupied during the Beaverdam phase, was located roughly midway between the two rivers, along the Little River. Its placement may have been to facilitate trade and other interaction between the populations along the two main channels. The Shoulderbone site in the western Oconee basin may have served a similar function (Williams and Shapiro 1986b).

Additional reasons for a relocation of Savannah River populations westward rather than eastward is relative distance between the chiefdoms occupying the two areas, and the absence of much evidence for interaction between the populations of the Oconee and Savannah rivers with those of the Santee-Wateree. The center of the province of Ocute lay 75 km southwest of the central Savannah River, and its margins were accessible by major waterways. The center of Cofitachequi, in contrast, along the

Wateree, lay 150 km to the east, across the Saluda and Broad rivers, a much longer journey either on foot or by water. The 16th-century Spanish accounts indicate little travel occurred along this route. The major pathway De Soto followed for seven days after leaving Ocute apparently ran eastward from the Oconee River to the general vicinity of the Savannah River, after which the trail deteriorated and disappeared (Hudson et al. 1984:72). The fact that this pathway was present in 1540 suggests the inhabitants of east-central Georgia regularly visited areas to the east as far as the Savannah. That they went little farther was dramatically illustrated by the fact that De Soto's party, accompanied by hundreds of natives from Ocute, got thoroughly lost trying to find Cofitachequi, with near-disastrous results for the expedition (Chapter III). That the trails ran from west to east, from Ocute into western South Carolina, and not from Cofitachequi west to this same area, further indicates that the late prehistoric populations living along the Savannah had closer ties with their neighbors to the west in Ocute than those to the east in Cofitachequi.

If the chiefdoms in the Savannah and Oconee drainages had a long history of contact and interaction, it would have facilitated the westward relocation of population out of the Savannah River Valley, assuming the events of the latter half of the 15th century made relocation their most attractive option. There is ample ethnographic precedent for this. Patterns of expansion tend to be toward those individuals, groups, or polities that are genealogically the most remote, and hence the least likely to draw in on their side any neighboring or related kin into any struggles that may ensue (Bohannon and Bohannon 1954:5; Vayda 1961). Patterns of population relocation or retreat, in contrast, tend to be toward groups that are closest genealogically.

One thing is clear: the patterns of chiefly competition that apparently led to the abandonment of the Savannah River Valley do not appear to have been over prime agricultural land, or to have been brought about solely by climatic deterioration. The entire central and lower Savannah River Valley contains extensive rich farmland, yet remained abandoned for almost two centuries after A.D. 1450. It was not reoccupied, in fact, in spite of the marked improvement in climatic conditions that occurred after ca. A.D. 1500. For this reason resorting to environmental determinism to explain the events observed in the archaeological record of the Savannah River basin is untenable. Environment had its role, but so too did politics.

Cycling and the Evolution of Organizational Complexity in the Eastern Woodlands of North America

The emergence and collapse of complex chiefdoms, or cycling, typifies the later prehistoric archaeological record of the Eastern Woodlands, rather than the emergence of primary states. We have seen that there is an internal contradiction in the kin-based structure of chiefdom societies that sows the seeds of repeated organizational collapse. In these societies the chief's assistants are his closest relatives, who are also his potential rivals and successors. While it is in a chief's best interest to suppress potential rivals, he is forced to place them in positions of power if he is to maintain himself. These positions of power, however, are often used to mount challenges to chiefly authority and succession. Only when this cycle is broken, perhaps, can more complex organizational forms arise.

Why one or more Mississippian societies in the Eastern Woodlands never developed into state-level polities is a question of some interest, since chiefdoms elsewhere in the New World made this transition. In some areas of the Eastern Woodlands, notably in the American Bottom, societies approaching primary states in size (if not in information processing capability) were unquestionably present. The extent of the monumental construction at the Cahokia site during the period from ca. A.D. 1000 to 1250, and the level of mortuary ritual accompanying some of its leaders, where retainer sacrifice reminiscent of Ur's royal tombs occurred, suggests something quite close to a state was present. Environmental deterioration coupled with administrative failures apparently led to the decline of Cahokia after ca. A.D. 1200, however, and the region had not rebounded by the time European contact truncated the native developmental sequence.

There appear to be a number of reasons why cycling, and not step-like evolution to ever greater social complexity, if indeed this is even the route to state formation, characterizes the Mississippian archaeological record. First, the existence of chiefdoms was actually comparatively brief in the region. European contact destroyed the region's agricultural chiefdoms within a millennium after their initial emergence, and in many areas no more than a few hundred years after their first appearance. Research in four areas where primary states did emerge indicates that a minimum of ca. 1000 years (Oaxaca) and in some cases almost 2000 years (Peru, Mesopotamia, India) elapsed between the emergence of chiefdoms and states (Wright 1986). The process of primary state formation, it is suggested, may require evolutionary changes at the chiefdom level that typically take a considerable amount of time to work through, time the Mississippian societies of the Eastern Woodlands did not have.

This process appears to involve changes in authority structures. Earlier in this study (Chapter II) it was shown that chiefly cycling tends to select for increasingly secular or power-based authority structures and, to some extent, for the emergence of increasingly complex chiefdoms. This selection process requires many generations and, given the presence of cycling, is not unilineal, but is instead punctuated by periods where societies of greater or lesser complexity dominated portions of the landscape. The cumulative effect of repeated successional events within individual complex chiefdoms, and competition between these chiefdoms, however, can be viewed as a process of selection for secular-based power structures that could ultimately lead to state formation. The selection events necessary for this development, such as the development of a writing system, or the emergence of non-kin-based administrative structures (i.e., bureaucratic apparatus), however, apparently never happened.

The societies of the Eastern Woodlands also apparently developed in isolation, with little or no direct contact with other New World states, precluding the likelihood of secondary state formation. The nearest state-level societies were located in central Mexico, at a considerable distance and separated by major geographic barriers. Currently no conclusive evidence of any kind has been found for direct or regular contact between the Middle American states and the Mississippian or pre-Mississippian societies of the Eastern Woodlands. The only Latin American artifacts reaching the Eastern Woodlands were domesticates such as corn and beans, and they apparently spread fairly gradually from group to group.

The physiographic and biotic resource structure of the Eastern Woodlands also appears to have hindered the easy development of complex societies in many areas. Carneiro (1981:67) has suggested that "the smaller an area in which [chiefdoms arise], the easier it will be to unify." The area occupied by Mississippian chiefdoms in the Eastern Woodlands was appreciably larger than nuclear Mesoamerica, but areas of densely packed chiefdoms favorable for state formation were patchily distributed. Given the area involved, and the comparatively limited area suitable for the emergence and development of agricultural/game-based chiefdoms, for the most part along narrow, widely spaced riverine floodplains, the distances between individual chiefly societies appears to have hindered the formation of stable multi-polity aggregates. While chiefdom level societies in the region appear to have exerted influence over considerable areas, as the Coosa case illustrates, direct administrative control appears to have been within fairly small areas. If primary states had developed in the Eastern Woodlands, it is unlikely that they would have first appeared in the narrow, widely spaced river valleys characteristic of much of the region. Instead, it is likely such societies would have emerged first, if anywhere, in the ecologically rich Central and Lower Mississippi Valley, where large numbers of chiefdoms occurred in comparatively small areas.

Given the prevalence of warfare at the time of early state formation, and the apparent association of early state formation with the unification of a number of chiefdom-level societies, predominantly through conquest and subsequent administrative reorganization, it is probable that state-level societies would have eventually emerged in the Eastern Woodlands. Low intensity warfare was a way of life among the Mississippian chiefdoms of the region, occasionally giving way to major episodes of apparent conquest or extermination. The unification of widely spaced chiefdoms would have been difficult in most areas, however, so conquest-based states would probably have emerged in areas like the central and lower Mississippi Valley where complex chiefdoms were closely packed together in the landscape. Whether and when this outcome would have occurred, however, will remain forever unknown.

Final Remarks

The Savannah River case indicates the importance of a regional perspective in the investigation of cycling. The changes that were observed in the individual centers and societies in the valley could only be understood when the larger picture of change throughout the basin, in adjoining basins and, indeed, throughout the region was examined. Within the Savannah River Valley chiefdoms rose and fell and centers of power rotated over the landscape. These changes occurred for a variety of reasons, indicating the futility of searching for single causes. Much remains to be done in the study of the Mississippian chiefdoms of the Savannah River Valley. In particular, the Fortson, Lawton, Mason's Plantation, and Tate mound centers, which are largely unknown, need to be mapped and tested. This is particularly critical in the case of Mason's Plantation, which was one of the largest centers in the basin. Village, hamlet, and special activity site types, about which we know less than our knowledge of the centers, also need to be recognized and examined. Survey data need to continue to be collected from across the region, so that our understanding of settlement patterns and land use strategies can continue to advance. Finally, we need to continually strive to bring new ways of thinking to old data.

APPENDICES

APPENDIX A

EARLY HISTORIC DESCRIPTIONS OF MISSISSIPPIAN CENTERS IN THE SAVANNAH RIVER BASIN
[Annotated by David G. Anderson]

Mounds Near Pipemaker's Creek, Chatham County, Georgia (2) (1898) (The Irene Site, 9Ch1).

Mounds Near Hudson's Ferry, Screven County, Georgia (2) (1898).

Description of "Mounds Near Brooks Landing, Barnwell County, S.C. (2)" (The Lawton Mound Group) (1898).

Description of the Silver Bluff Area (1776).

Tumuli on Mason's Plantation (1873).

Description of Silver Bluff and Mason's Plantation (1898).

The Hollywood Mounds (1894).

Description of the Rembert Mound Group (1776).

Ancient Tumuli on the Savannah River, Visited by William Bartram, in 1776 [The Rembert Mounds] (1877).

The Rembert Mounds (1894).

Description of Keowee (1776).

Description of Tugalo (1894).

The Lawton Mound Group (38Al11) Allendale County, South Carolina: Statement of Significance (1989).

Mounds Near Pipemaker's Creek, Chatham County, Georgia (2) (1898) (The Irene Site, 9Ch1)

[Taken from *Certain Aboriginal Mounds of the Savannah River*, by Clarence B. Moore, p. 168, first published in 1898. Annotations included in brackets]

At the union of Pipemaker's creek and the Savannah river, about four miles [*6.4 km*] above Savannah, in view from the river, on property belonging to Henry Taylor, Esq., of Savannah, who kindly gave us permission to investigate, are two aboriginal mounds.

The larger, a truncated cone in shape, has a base irregularly circular in outline with a diameter of about 130 feet [*39.6 m*]. [*Note that the diameter was 160 feet or 48.8 m in 1937, when the WPA excavations began, suggesting considerable plow reduction had occurred in the intervening years*]. The diameter of the summit plateau, which is also circular, is about 60 feet [*18.3 m*]. The mound, which has a height of 19 feet [*5.8 m*], presents a picturesque appearance. [*In 1937 the top was described as rounded, and 15.5 feet or 4.7 m high, suggesting an upper, Irene stage may have been present and subsequently lost*]. The sides are steep and on them grow cedars and liveoaks, the oaks covered with trailing moss. A large excavation had been made previous to our visit, by treasure seekers, we were told. The exposed portions were carefully examined by use and a certain amount of digging done without showing traces of burials. [*Use of the large mound for burial purposes does not appear evident, a finding reinforced by the WPA work*]. The mound seemed to be composed of clayey sand with oyster shells in places.

Contiguous to the southwest margin of the large mound was a rise in the ground, circular in a general way, with a diameter of about 60 feet [*18.3 m*] and a height of 3 feet [*91 cm*] at the center. The mound, which was more than half dug through by us, seemed to have been a refuse heap formed by long-continued occupation. It had also been used as a place of burial. Human remains were met with at eighteen places — the usual flexed burials, the head as a rule, though not always, pointing to the east. [*In the fill of Moore's excavation ten disturbed burials were found during the WPA excavations, one, partially undisturbed, with several hundred disk-shaped shell beads (Caldwell and McCann 1941:24)*] With the burials were small shell beads on two occasions and with one was a pebble-hammer roughly pecked to leave a central encircling ridge. In the midden debris were: many pebbles, some broken; bits of chert; two earthenware discs; one-half of a discoidal stone; numerous sherds bearing the check, the diamond-shaped, and the complicated, stamp.

Mounds Near Hudson's Ferry, Screven County, Georgia (2) (1898)

[Taken from *Certain Aboriginal Mounds of the Savannah River*, by Clarence B. Moore, pp. 169-171, first published in 1898. Annotations included in brackets]

Hudson's Ferry, about 68 miles [*109 km*] by water above Savannah, is the steamboat landing for Enecks, a settlement and post-office about two miles [*3.2 km*] inland. A man named Golden stated he had found two vessels of earthenware, one above the other, by the roadside at the landing, which contained cremated human bones [*probably a Savannah or Irene urn burial*]. We visited Mr. T. J. Enecks, of Enecks, who showed us the vessels, which are of a type [*unfortunately not described here*] found on the Georgia coast.

In a field about 1 mile [*1.6 km*] west of Hudson's ferry, on the property of Mr. William Prior, of Enecks, to whom we are indebted for permission to investigate, was a mound, much spread out by plowing, in a cultivated field [*now recorded as 9Sn4 in the Georgia archaeological site files*]. Its diameter was 74 feet [*22.5 m*]; its height, 2 feet 5 inches [*76 cm, almost identical in size to the burial mound at Irene*]. The mound had been dug into previously to a certain extent. The holes remained unfilled. We were informed by the son of Mr. Prior that the digging was done by him and that he had found nothing except two skeletons. The mound was thoroughly investigated by us. It was of dark yellow sand without stratification or pits. A dark band ran through it at the level of the surrounding field [*an old A-horizon or midden?*].

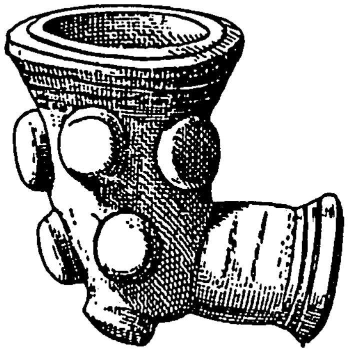
Burial No. 1 was 4 feet [*1.2 m*] S.E. by E. from the point taken by us as the center of the mound. The skeleton, of a male, heading S., was partly flexed, with trunk and face to the right. The legs were drawn up, the knees turned to the right, the upper arms lay along the body with the forearms bent across it. Near the skull was a chip of chert and a quantity of charcoal, though neither skull nor sand showed trace of fire. On either side of the right arm were two handsome discoidal stones each flat on one side and convex on the other, 2.3 inches [*5.8 cm*] and 2.7 inches [*6.9 cm*] in diameter, respectively. This skeleton had doubtless been buried, after exposure, with most of the parts held in place by the ligaments [*a probable secondary burial*]. The right foot, however, except the astragalus, was missing. The heel bone lay by the skull. The skeleton, which was 3 feet [*91 cm*] from the surface, had been let into the dark band at the base of the mound.

Burial No. 2 was 8 feet [*2.4 m*] S. of the center and 2 feet 9 inches [*84 cm*] down, just through the black basal band. It was of a male, was flexed on the right and headed S.S.W. Back of the skull was a broken mussel shell and a tobacco pipe of earthenware covered as to the bowl with projecting knobs (Figure 115). [*The pipe is a common Mississippian form observed at other sites in the Savannah basin, as noted in Chapter V*].

Burial No. 3, 6 feet [*1.8 m*] W.N.W., 2.5 feet [*76 cm*] down, head S., included the upper portion of a skeleton, the rest having been dug away during one of the excavations to which we have referred. In the sand, which had been thrown back and left, was an interesting tobacco pipe of light-colored clay consisting of an effigy of a bird, probably an owl. The wings, tail, and "horns" are distinctly shown, as are the legs and eyes. Part of the bill is missing (Figure 115). An interesting feature of this pipe is that the bird faces the smoker, the pipe evidently having been made more for the satisfaction of the owner than to attract the attention of others[*this seems unlikely, given the dramatic profile the pipe would have presented*]. We have before noticed this tendency in aboriginal pipes, notably in one found by us in the great Grant mound, Florida, where a small piece of copper had been fastened to the near side of the bowl.

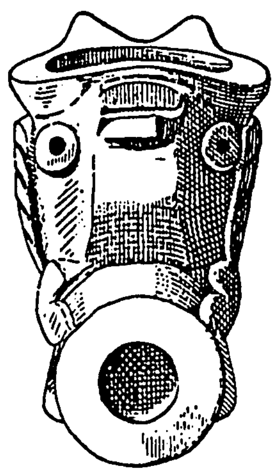
Mr. J. D. McGuire, who has made an especial study of aboriginal tobacco pipes and whose memoir on the subject will shortly be brought out by the National Museum, says of this pipe that the specimen is the most interesting one of the pipes of this type, which belongs to Georgia and South Carolina, that has come under his observation and by far the most elaborate one he knows of, though the pipe is related to other interesting pipes from the same locality [*i.e., Hollywood, as noted in Chapter V, see below*] and also from North Carolina and possibly from Tennessee.

Mr. Andrew E. Douglass, whose superb collection of pipes may be seen at the Museum of Natural History, New York, writes of the bird-pipe as follows: "The pipe

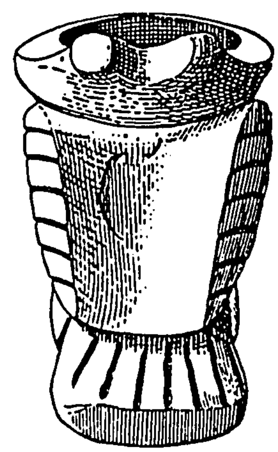


Tobacco-pipe of earthenware.
Mound near Hudson's ferry.
(Full size.)

Tobacco-pipe of clay.
Mound near Hudson's ferry. Side view.
(Full size.)



Tobacco-pipe of clay.
Mound near Hudson's ferry.
Showing front view. (Full size.)



Tobacco-pipe of clay.
Mound near Hudson's ferry.
Showing rear view. (Full size.)

(Source: Moore 1898a)

Figure 115. Pipes from Hudson's Ferry Mound (From Moore 1898a:Figures 9-12).

represented in the cuts is, so far as I know, entirely unique. It represents what I take to be a conventional owl, and, as you observe, the face is turned to the smoker, which would be considered a legitimate Indian conception. It is not likely to have any duplicate, as it is hand-work and the artist is not likely to have adhered to the same design in modeling another. I regard it as a fine specimen of original Cherokee work." [*The Cherokee identification is, of course, incorrect, and must be viewed in the context of the time when this work was undertaken*].

Burial No. 4, 8 feet [*2.4 m*] W.S.W., 10 inches [*25 cm*] from the surface had been disturbed in part by the second pit of the previous digging. Charcoal lay near the skull.

Together, and unassociated with human remains, were three fossil shark's teeth, each somewhat over one inch in length, with bases and points considerably worn, showing use in handles as pointed tools. With them was a mussel-shell containing two bones with cores of spurs, doubtless belonging to a wild turkey. A pitted smoothing stone lay loose in the sand, as did two arrow-points of chert.

In a field formerly under cultivation, about half a mile [*0.8 km*] southeast from the mound just described, was a mound of sand 4 feet 5 inches [*1.4 m*] high and 61 feet [*18.6 m*] across the base. It had been somewhat spread out by cultivation. Previous to our visit a small hole had been dug into the top. A trench 30 feet [*9.1 m*] wide was dug, in from the margin through the center. About the middle of the mound were calcined fragments of bones probably belonging to one individual. Similar fragments were seen in the sand thrown out by the former digger.

Description of "Mounds Near Brooks Landing, Barnwell County, S.C. (2)" (The Lawton Mound Group, Allendale County, S.C.)

[Taken from *Certain Aboriginal Mounds of the Savannah River*, by Clarence B. Moore, pp. 171-172, first published in 1898. Annotations included in brackets]

Brooks' Landing [*Lawton Mounds, 38Al11*], not given on the government chart, is about 121 miles [*195 km*] from Savannah by the river. About half a mile [*0.8 km*] in an easterly direction from the landing, in the cypress swamp, are two mounds on the property of Mr. S. G. Lawton, of Allendale, S. C., who courteously placed them at our disposition. The mounds, about the same size and almost contiguous, stand close to the edge of the terrace, which borders the river in high water and is itself submerged in times of freshet. The northernmost mound was chosen for investigation. It was the usual shape, a greatly truncated cone with markedly level summit plateau. The diameter of base was 68 feet [*20.7 m*]; of the summit plateau 36 feet [*11 m*]. Measured from the terrace on which it stands, its average height is 5 feet 4 inches [*1.62 m*], though, to an observer looking from the north and including the height of the terrace, its altitude would seem much greater [*These measurements are slightly larger, than those recorded in 1970, when the site was revisited*]. Trenches, aggregating 45 feet [*13.7 m*] in length from 3 to 4 feet [*0.91 to 1.22 m*] wide and from 5 to 6 feet [*1.52 to 1.83 m*] deep, were dug into the summit plateau. About five feet down there seemed to be a black basal line indicating the original surface [*premound midden?*]. The mound was of unstratified clay with occasional fire-places, perhaps in use during its construction. Three or four sherds were met with, and 5 feet [*1.52 m*] from the surface was a deposit of small fragments of calcined bones, some of which were undoubtedly human. Probably this mound was domiciliary and the burial incidental. [*The absence of burials or much debris suggests few stages were present. Each stage would have probably been characterized by an occupation surface, and possibly associated burials*].

Description of the Silver Bluff Area (1776)

[Taken from *Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee County*, by William Bartram, pp. 313-315, first published in 1791. Annotations included in brackets]

Next morning [*late April, 1776*] I set forward prosecuting my tour. I pursued the high road leading from Savanna to Augusta for the distance of one hundred miles [*160 km*] or more, and then recrossed the river at Silver Bluff, a pleasant villa, the property and seat of G. Golphin, Esquire, a gentleman of very distinguished talents and great liberality, who possessed the most extensive trade, connections, and influence, amongst the South and South-West Indian tribes, particularly with the Creeks and Chactaws, of whom I fortunately obtained letters of recommendation and credit to the principal traders residing in the Indian towns.

Silver-Bluff is a very celebrated place; it is a considerable height upon the Carolina shore of the Savanna River, perhaps thirty feet [*9.1 m*] higher than the low lands on the opposite shore, which are subject to be overflowed in the spring and fall; this steep bank rises perpendicular out of the river, discovering various strata of earth... [*a lengthy discussion of local geology and fossils follows*] ...The surface of the ground upon this bluff, which extends a mile and a half or two miles [*2.4 or 3.2 km*] on the river, and is from an half mile [*0.8 km*] in breadth, nearly level, and a good fertile soil, as is evident from the vast Oaks, Hickory, Mulberry, Black walnut and other trees and shrubs, which are left standing in the old fields which are spread abroad to a great distance, and discover various monuments and vestiges of the residence of the ancients, as Indian conical mounts, terraces, areas &c. as well as remains or traces of fortresses of regular formation, as if constructed after the modes of European military architects, and are supposed to be ancient camps of the Spaniards who formerly fixed themselves at this place in hopes of finding silver. [*This statement provides virtually the sole documentary evidence for major Indian and Spanish earthen constructions in the vicinity of Silver Bluff. In a very real sense, the later nineteenth century and early twentieth century equation of the town of Cofitachequi with Silver Bluff originates with this description. Bartram's statement is particularly puzzling from a late twentieth century perspective, since no archaeological evidence has been found from the Silver Bluff area to support the presence of either Spanish or late prehistoric, Mississippian period Indian earthworks, or even extensive occupation.*]

Tumuli on Mason's Plantation (1873)

[Taken from *Antiquities of the Southern Indians, Particularly of the Georgia Tribes*, by Charles Colcock Jones, pp. 148-157, first published in 1873. Annotations included in brackets]

Tradition designates "Silver Bluff," or its vicinity, as the site of the ancient village of Cutifachiqui. There, if we rightly interpret the geography of the Fidalgo of Elvas, dwelt an Indian queen, young and attractive, who with royal hospitality welcomed to her capital and the freedom of her nation the adventurous De Soto and his daring companions, lone wandering and not yet lost amid the unbroken forests and howling wildernesses of a vast region hitherto untrodden by the white man.

No storied urn or monumental bust, no epitaph deeply graven on enduring marble, no sepulchral column, perpetrates her memory or her greatness; and yet certain tumuli, sternly wrestling with all-subduing time, lonely and voiceless in this generation, even now repeat the story of the Indian queen, whose cordial welcome of and generous hospitality to the adventurous, travel worn stranger, were requited by unkindness, ingratitude, and dishonor.

In 1776, Mr. Bartram [*excerpt presented previously*] states that there were in this vicinity what he is pleased to denominate Indian conical mounts, terraces, and areas, and also the remains or traces of fortresses which were supposed to be ancient camps of the Spaniards, who formerly fixed themselves at this place in the hope of finding silver.[1].

It is not our purpose to pursue the track of the Spanish expedition, or to recount the traditions of the locality. Our object is simply to chronicle the existence and perpetuate the recollection of the prominent physical peculiarities of a marked group of ancient tumuli resting upon the left bank of the Savannah River, some twelve or fifteen miles [*19.3 or 24.1 km*] by water below the city of Augusta. Thirty-five years ago [*ca. 1835*] this group numbered six mounds, but the restless river, with recurring freshets, encroaching steadily upon the Carolina shore, has already rolled its turbid waters over two of them, while [an]other two have so far yielded to the leveling influenced of the plowshare as to be almost entirely obliterated [*The 1853 Gilmer map of the Savannah River channel shows three mounds in this area, suggesting two had been plowed down in the 15 to 20 years from ca, 1835 to the early 1850s*]. Consequently but two remain, and they only in major part, one-third of each having been washed away by the current; and the day is probably not far distant when tradition only will designate the spot once memorable in the annals of a former race as the site of monuments of unusual size and interest. [*Six mounds is the most recorded at any site along the Savannah, the next largest being Rembert with five. The reference to two mounds plowed flat suggests they were to the south of the two surviving mounds fronting on the river, between the mounds and the ox-bow lake. The bases of these mounds may still be present under the alluvial deposits now blanketing this field. Likewise, traces of the apparent moat or ditch may also be present.*]

These tumuli are located on Mason's Plantation, upon the very edge of the Savannah River, and in the midst of the wide, deep swamp, which here on either bank stretches away for miles, exhibiting one uniform, level, alluvial surface. What was once a mighty forest, grand and impenetrable in its majestic trees and tangled brakes, is now a rich cornfield whose harvests have for many years with a yield of a hundred-fold rewarded the toil of the intelligent husbandman. The surrounding space being thus denuded of its original growth, the tumuli loom up in uninterrupted proportions, while from the river, which has wellnigh cut them in twain, the observer enjoys a most favorable opportunity, as presented by their perpendicular fronts, for closely examining their physical composition. Freshets have performed what it would have required long days of toil to have accomplished, and even then the work would not have been done half so well. It is sad to realize, however, that these encroachments which at present bring hidden things to view, and enable the examiner to pursue his investigations with facility, are dooming the objects themselves to early and absolute annihilation. Some forest-trees, chiefly beech and locust, still crown the summits and flanks of these fragmentary mounds trembling upon the brink of the remorseless river.

The largest tumulus, designated in the accompanying sketch by the letter A (Plate III) [*Figure 40 in text*], rises thirty-seven feet [*11.3 m*] above the plain, and forty-seven

[1] "Travels" etc., p. 313. London 1792

[*14.3 m*] above the water-line as it existed at the date of this visit. Measured east and west, its summit diameter was fifty-eight feet [*17.7 m*], while, in consequence of the encroachment of the river, when measured in a northerly and southerly direction, it fell a little short of thirty-eight feet [*11.6 m*]. Its base diameter, ascertained in an easterly and westwardly direction, was one hundred and eighty-five feet [*56.4 m*]. Although its outlines have been somewhat marred by the whirling eddies of the river, as its swelling waters, in the spring of the year gathering marvellous volume and impetus, have again and again swept by, inundating the entire swamp-region, this tumulus may be truthfully described as a truncated cone — its sides sloping gently and evenly, and its apex surface level. [*i.e., a flat topped pyramidal temple mound*] If terraces ever existed, they are no longer apparent. The western flank of this mound was extended for a distance of some twenty yards [*18.3 m*] or more beyond the point where it would otherwise have terminated, respect being had to the configuration of the eastern and southern slopes. About two feet [*61 cm*] below the present surface of this extension is a continuous layer of charcoal, baked earth, ashes, broken pottery, shells, and bones. This layer is about twelve inches [*30 cm*] thick. So far as our examination extended — and it was but partial — the admixture of human bones was very slight — the bones, of which there were vast numbers, consisting of those of animals and birds native to this region. One is at a loss to explain the existence of this stratum of charcoal, ashes, shells, fragmentary pottery and bones, unless upon the hypothesis that it comprises the *debris* of a long-seated encampment or permanent abode of the aborigines upon this little bluff. This stratum can be traced along the water-front of the mound, as though it existed prior to its construction. The superincumbent mass of earth seems to have been heaped above it. Where it penetrates the tumulus, it is wellnigh coincident with a prolongation of what was at the time the surface of the surrounding swamp. [*This is an excellent early case of stratigraphic recordation, including as it does the clear recognition of a pre-mound midden layer extending under the main mound. Traces of this village midden may well remain in the surviving field.*]

The mound itself is composed of the alluvium of the adjacent field, which is a micaceous clay, richly impregnated with vegetable mould. No traces of inhumation could be perceived, and the composition of the tumulus was homogeneous as far as ascertained. [*No obvious evidence for stages or use as a burial mound, suggesting fairly rapid construction and use as a temple substructure mound*].

It is earnestly hoped that some one will carefully note from time to time the encroachments of the river, as in all likelihood the central portions of this mound will soon be laid bare, and then, its contents, if any, will be fully disclosed. Thus will an opportunity be afforded for a most satisfactory examination.

One hundred and twenty-five feet [*38.1 m*] due east of this large tumulus, is the smaller mound designated by the letter B. [*Figure 40 in text*] Its appearance, general outline, and composition, are so nearly analogous to those of the larger mound, that a specific description is scarcely necessary. It may be remarked, however, that, possessing a base-diameter of one hundred and fourteen feet [*34.7 m*], it rises fifteen feet [*4.6 m*] above the surface of the ground and twenty-five feet [*7.6 m*] above the level of the river.[2]

It will be perceived by a reference to the accompanying sketch (Plate III), [*Figure 40, in text*] that these tumuli were, in days long since numbered with an unrecorded past, isolated by a moat (C C), whose traces are still quite observable. The enclosed space —

2 For profiles of these tumuli, see letters F and G, Plate III [Figure 40, in text]. The water-line is represented by H.

the river forming the northern boundary — contains a conjectured area of about eight acres. [*3.2 ha. This is much smaller than the area between the oxbow and the river at present, with has been calculated by dot-grid as encompassing approximately 50 acres*]. Commencing at the river, eastwardly of the smaller mound and distant from its flank some thirty yards[*27.4 m*], this ditch extends in a southerly direction until it merges into what now seems to be a natural lagoon (D). Following this in a westwardly course, it finally leaves it, and thence runs almost due north to the river into which it empties at a remove of about eighty yards [*24.4 m*] from the western flank of the larger tumulus. Here the communication with the river is still perfect, but the upper mouth of this moat is now dry. It varies in width from twenty to forty feet [*6.1 to 12.2 m*], and is in some parts wider still.[3]

In all probability the earth removed in the construction of this canal was devoted to the erection of these tumuli; and there are here and there in their vicinity physical evidences of the fact that the surrounding soil contributed to their further elevation. Terra-cotta vases, pots and pans, arrow and spear heads, stone articles of use and ornament, mortars, pipes, and bone and shell beads, are found in the adjacent fields, but there lives not a tradition of the time when, and of the tribes by whom, these tumuli were built. [*The absence of a folk-tradition of native habitation at the Mason Plantation mound group indicates it was abandoned prior to extensive European contact and exploration along the Savannah. Such extended contact postdates the 1670 English settlement of Charles Towne, and suggests the site was abandoned prior to this time. No Savannah polity other than the intrusive Westo, visited by Woodward in 1673, is noted in the Charles Towne colonial records. Parenthetically, Cofitachequi, a comparable center located near Camden, South Carolina, was occupied in the 1670s, and is repeatedly mentioned in the Charles Towne colony records. No such center is noted along the Savannah.*]. Lonely, storm-beaten, freshet-torn, they stand nameless and without a history in this generation — silent, yet convincing illustrations of the ephemeral character of the nomadic races which for centuries peopled this entire region, and, departing, left behind them neither rude letters nor monuments of art — nothing save these rude earth-mounds and occasional relics to give assurance of their former existence.

In the twilight of what by-gone and unrecorded century were these tumuli built? Whence came, and who the peoples that lifted them from out the bosom of our common mother? Served they as friendly refuge in seasons of freshet and of storm? [*Probably, particularlyfor the elite.*] Were sacred fires ever kindled upon your summits and within this consecrated area? [*Almost certainly.*] Within your hidden depths do the brave and honored of your generation sleep that sleep which knows no waking until the final trump shall summon alike the civilized and the savage to the last award? [*Again, almost certainly so.*] Or are ye simple watch-towers, deserted of your sentinels — forts, abandoned of your defenders? We question, but there are no voices of the past in the ambient air. We search among these tombs, but they bear no epitaphs. The sacred fires, if ever kindled, were turned into ashes long ago, and naught but darkness is here. [*A perspective from which to compare the accomplishments of modern archaeology in understanding the Mississippian inhabitants of the Savannah River Valley.*] We gaze upon these monuments, but they are inscriptionless, and the Savannah rolling its swollen waters about them will soon sweep even these mute earth-mounds out of existence. For a few short moments this tawny-hued river will grow more turbid with the dissolving mass of native clay, and then, borne away upon its bosom, and settling darkly in the depths of this swiftly moving stream, nothing will evermore be seen of these august witnesses of the memorable meeting between the Spanish Adventurer and the Cacica of the Savannah. [*One can see from this passage how the episode of De Soto at Cofitachequi was romanticized in the 19th century by writers such as C. C. Jones, and how the equation of the Silver Bluff area with the location of Cofitachequi*

3 This may have also been a fish preserve.

became entrenched in local folklore and ultimately scholarship.]

Description of Silver Bluff and Mason's Plantation, 1898

[Taken from *Certain Aboriginal Mounds of the Savannah River*, by Clarence B. Moore, pp. 167-168, first published in 1898. Annotations included in brackets]

In 1776, William Bartram saw a number of mounds at Silver bluff,[4] about 27 miles by water below Augusta, of which no trace is now apparent. Colonel Jones[5] describes large mounds on Mason's Plantation, below Augusta on the Carolina side, and examined a section of one which had been exposed by the river, finding no burials [*Jones 1873:155*]. He earnestly hopes that the mounds may be carefuilly watched during the process of destruction. All have totally disappeared. The archaeological examination of the Savannah river has been too long deferred.

The Hollywood Mounds (1894)

[Taken from Henry L. Reynold's description of the fieldwork, summarized in *Report of the Mound Explorations of the Bureau of Ethnology*, by Cyrus Thomas, pp. 317-326, first published in 1894. Annotations included in brackets]

While this report was being prepared Mr. Henry L. Reynolds, one of my assistants, was sent to certain points in Georgia and South Carolina to make examination of some works to which my attention had been called. The result of this examination is given in the following report, made by him. This includes the Hollywood mound of Richmond County, Georgia, which proved to be of unusual interest, and the McDowell [*Mulberry, 38Ke1*] mound, Kershaw County, South Carolina.

The Hollywood Mound

There are two mounds situated in a bend of the Savannah river, in Richmond County, Georgia, 3 miles [*4.8 km*] east from Hollywood, a small flag station on the Georgia Central railroad about 10 miles [*16 km*] below Augusta and 5 miles [*8 km*] above Silver bluff. This latter, which is on the South Carolina side, seems to me, after a special investigation of this question [*No evidence for which now exists.*], to be the most probable site of the ancient town of Cutifachiqui, where De Soto and his army were so generously entertained. [*From this expressive wording, Reynold's may be relying on C. C. Jone's 1873 account for this conclusion.*]

The mounds are situated on the lowest river land, which is annually subject to inundation. The overflows of the Savannah are very destructive, particularly at this point. Cattle are drowned, the rich riparian crops are destroyed, and the farmers impoverished. At such times these mounds are the only land visible above a broad expanse of water, and it is this fact which has given rise to the tradition among people of vicinity that they were thrown up by some former owner of the property to serve as places of refuge for his cattle during their inundations. [*Extensive historic flooding and deposition in this area is indicated by the ca. four to five feet of sediments found by De Baillou's excavations at Hollywood in the 1960s.*]. A quarter of a mile [*0.4 km*] to the north of the

[4] C. C. Jones, *Antiquities of the Southern Indians*, page 150

[5] Ibid. page 153, *et seq.*

mounds near the river bank is an extensive shell heap, composed chiefly of the shells of *Unio*. Upon the larger of the two mounds [*Mound A, which De Baillou examined in the 1960s*] a simple barn has been erected. This mound appears to have been originally of the pyramidal type, but since its surface has suffered so greatly from the cattle that have been penned in upon it and the washing occasioned by floods, its original character, as well as whatever smaller physical features it may have presented, is now almost entirely lost. [*From this description it appears that the upper portion of the mound has seen considerable damage, possibly removing most of the evidence for one or more of the final stages.*]

Mound No. 2, the one excavated [*Mound B*], is in an adjoining field, the property of a gentleman of Augusta, Georgia. It is 280 feet [*85.3 m*] due north of No. 1, is conical in form, 10 feet high [*3 m*], and 70 feet [*21.3 m*] in diameter. Though originally surmounted by a small log barn, which a former flood removed to a point at its base, the mound has evidently remained unmolested since that time, for several small cottonwood trees, as well as considerable underbrush, were growing upon it. [*From this description, it is evident that both mounds had historic structures on them at one time. Mound A appears to have been a pyramidal platform mound, possibly a substructure mound, while Mound B, from conical its shape, may have been a burial mound. Given the conversion of the platform mound at Irene to a conical burial mound during the Irene I occupation, the same thing may have happened to Mound B, since the upper surface was intruded by a number of Irene burials.*]

The excavation was conducted as follows: First two trenches, each 10 feet [*3 m*] wide, were cut crosswise through the center, one north and south, the other east and west. these were carried down to the bottom, and in some places to the original pure micaceous soil that underlies the mixed loam of the surrounding field. The segments that remained were then cut down several feet beyond the radius that covered the interments found in the trenches. In this manner the mound was thoroughly excavated and all its buried contents exposed. [*From this description, it is probable, as De Baillou noted in his 1965 report, that portions of the mound margin were left intact, and any burials placed around the margin would have been missed.*]

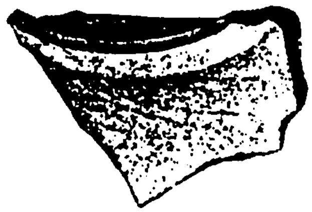
The mound is stratified, or, in other words, constituted of two different kinds of soil, the upper being strictly sandy micaceous loam, 3 feet [*91 cm*] thick; the lower a hard, compact vegetable earth, taken from what is commonly called in the south "crawfish land." This rested at the bottom upon 9 inches [*23 cm*] of a very black and rich vegetable mould, permeated throughout with innumerable small pieces of burnt pottery, charcoal, shell, mica, chipped flint, and charred and decayed bones too small for identification. The surface of this black mold appeared to be the original surface upon which the mound was built. [*A rich premound midden, apparently with well-preserved paleosubsistence remains, underlay Mound B.*]

All the interments lay within the lower division of the mound [*initial stage or stages built during the Savannah occupation*]. The absence of burial in the upper division, the different character of the earth, and the presence of fragmentary pottery (N.M 135278-84) unlike that found in the subsoil, seems to indicate a subsequent addition. It also seems to indicate that the original builders or others who succeeded them were disposed to utilize these their old tombs for some purpose in connection with floods, for this additional earth seems to have been cast upon the mound to increase its elevation. [*Given the different character of the soil in the upper mound division, and the presence of historic artifacts in its fill, as described below, it appears that the upper part of the mound dates to the post-contact period, and probably after ca. A.D. 1750, when the area was settled.*]

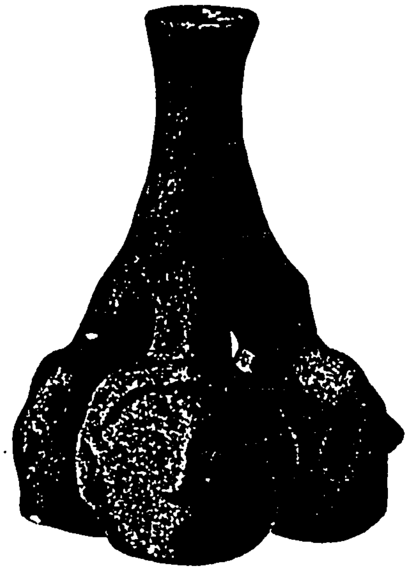
It will also be seen from the sectional diagram that there were two general series of interments which comprise the find, or rather the important contents of the mound. The lowermost of these contained specimens either resting on the black mold at the bottom or within a foot and a half [*46 cm*] above it, and the upper from a foot to 2 feet [*30 to 61 cm*] below the line separating the two strata, or from 4 to 5 feet [*1.22 to 1.52 m*] below the surface of the mound. [*Given that the mound was ca. 10 feet or 3 m high, the two burial episodes in the lower division were thus separated by ca. 2 to 3 feet, or 61 to 91 cm, and probably come from a stage missed in the fieldwork.*] Fire played some part in the ceremony of burial, for hearth remains of burnt earth and ashes were seen with each series of burials. [*This suggests that the two groups of burials may have been placed inside structures that was covered over, with only the central(?) hearth and a few posts detected in the fieldwork.*] These burials were made before the subdivision was finally completed; in other words, they were not intrusive, for there was no disturbance of the soil above them. [*This statement, if correct, may indicate that the Irene I peoples using the site, who placed the series of urn and other burials that comprise the interments in the upper part of the lower division, built this part of the mound. An alternative interpretation would be that some or all of these burials were intrusive.*]

Scattered indiscriminately throughout the soil composing the upper division of the mound were the following articles: One stone chisel (N.M. 135271), one stone celt, eight small pieces of white and blue glazed European crockery (N.M. 135279), many small fragments of Indian ware, and five pieces of old-fashioned rudely wrought iron nails much oxidized (N.M. 135280). These appeared to have been thrown up with the earth in the construction of this part of the mound. [*From this statement the upper division of the mound would appear to have been built during the historic period, and made use of soil containing both European and Indian midden debris. The European artifacts, particularly the crockery, which may be delft or pearlware, will need to be examined to determine its precise age. This evidence, and the absence of native American burials in the upper division, reinforces the interpretation that it is of historic age.*]

In the subsoil the hearth A (Figure 196)[*Figure 39, top in text*] was first discovered almost touching the line of division [*i.e., it was found just below the surface in the upper part of the lower construction division*]. It was of reddish burnt earth, covered with pure wood ashes and a small quantity of charcoal. It was 5 feet [*1.52 m*] in diameter, 2 feet [*61 cm*] thick, and rested at the bottom on fine sand. [*The size and thickness suggest it saw extensive use; comparably sized hearths were found on the summits of several of the Irene mound stages.*] Adjoining it on the southeast lay a large culinary pot (N.M. 135205), indicated on the diagram (Fig. 196)[*Figure 39 in text*] as No. 1, the rim being 10 inches [*25 cm*] below the line dividing the lower from the upper strata and 3 feet 10 inches [*1.17 m*] below the surface of the mound. Decomposed animal matter was found in the bottom mingled with scattered particles of black and white ashes [*the presence of bone suggests the vessel was interred with food inside, or may have been a human burial*]. One foot and a half [*46 cm*] east from pot No. 1, on the same level, lay another pot, 2 (N.M. 135209), having inside of it another pot (N.M. 135208). In consequence of their inferior composition, badly decayed condition, and the pressure of the hard superincumbent earth, these vessels were so badly injured that they fell apart when taken out. Almost alongside of the last, on the same level, lay another, 3 (N.M. 135211), inside of which was an inverted pot (N.M. 135210). Decayed animal matter, a few bone beads, a fragment of the tooth of some animal, and some scattered charcoal cinders were found in the bottom [*This suggests that the vessel contained a food offering or, given the beads, a human burial, possibly that of a child, given the poor condition of the bone*]. In the earth alongside of these pots was found a piece of iron (N.M. 135275). Directly south of pot No. 1, on the same level, 6 feet [*1.8 m*] distant, lay another pot (N.M. 135212). In the earth surrounding it were found pieces of white European porcelain (N.M. 135279, Fig. 197). [*Figure 116, upper left. The presence of European artifacts with the burials and vessels in the upper pat of the lower construction division*



Fragment of European pottery, Hollywood mound, Georgia.



Pot from Hollywood Mound, Georgia (135197).

A painted vessel from Hollywood mound, Georgia.

Pot from Hollywood mound, Georgia.

(Source: Thomas 1894: 321- 324)

Figure 116. Artifacts from the Hollywood Mound. (From Thomas 1984: Figures 197, 199, 200, 201)

suggests either intrusion and disturbance from the historic construction division immediately above this level, or that the native burials and associated artifacts date to the historic period. Given the fact that the associated vessels apparently date to the early Irene period, this latter explanation is considered implausible. The fact that more historic artifacts, described below, were found at and just below the boundary between the upper and lower construction divisions further supports the dating of the upper stage to the historic period, and the probability that the highest deposits in the lower stage were disturbed somewhat during the historic period.] East of this last, 6 feet [*1.8 m*] distant, lay a small pot, 5 (N.M. 135198). The rims of these two pots appeared to be about on the same level. Not far from pot No. 5 were the decayed remains of a repoussé figured copper plate (N.M. 135226) so thin and brittle that it was with difficulty that it could be handled without breaking. Alongside were the faint indications of human burial, as seen in small pieces of decayed bone and human teeth. Between these last and those indicated by the figures 1, 2, 3 was a scant line of decayed bone, so scant and decayed that it was impossible to tell whether or not it was human. Traces of fire were seen about these bones. North of these traces of bone, and immediately under the line of pots Nos. 1, 2, 3, were three small upright timber molds, varying from 1 to 11/2 feet long [*30 to 46 cm; these posts are presumably from a structure atop this mound stage*]. No traces of the timbers remained. Apparently lying on the dividing line between the two strata, 14 feet [*4.3 m*] northwest of the center, was the fragment of an old drawing knife (N.M 135261). A rude old iron nail, very much oxidized, was found on the surface of the subsoil, 3 feet [*91 cm*] deep and 12 feet [*3.7 m*] southwest of the center. Another rude though sharp-pointed ancient iron nail was found not far from the last, but eight inches [*20 cm*] below the surface of the subsoil. A small piece of green glass was found three inches [*7.6 cm*] below the surface of the subsoil, in the southwest segment and east of the hearth. [*The presence of these historic artifacts, clearly located at the base of the upper construction division, and up to several inches below the surface of the lower division, permits the dating of the upper deposit to the historic period, and indicates that the materials in the lower deposit were disturbed somewhat, as noted previously.*] Resting on the sand hat seemed to stretch over the entire area beneath these pots and the fire bed between them were the pots indicated by Nos. 6 (Pl. XIX [*Figure 117*], N.M. 135192) [*This vessel is an Irene filfot stamped jar with reed punctated nodes, dates to the Irene I/Hollywood phase from ca. A.D. 1300 to 1400*] and 7 (N.M. 135200). A large bowl (N.M. 135199) was found inside of pot No. 6, and by the side of the two vessels, at the bottom, were the scanty remains of some fabric [*this descriptions suggests a covered urn*]. Two feet 8 inches [*81 cm*] from the surface of the mound were the remains of decayed timber, which ran down about 1 1/2 feet [*46 cm*] to the east of the pot at 6, almost touching its eastern rim. It is not unlikely that this was the remnant of some post planted on the surface of the mound by some of its white owners [*more evidence for historic period intrusion into the upper part of the lower construction division, and for historic construction atop the final mound*].

Alongside of the northwestern edge of the hearth A was a line of decayed bones, which, from the small pieces of skull and two or three teeth that remained, were found to be human. Though in the very last stages of decay, the remains were so remarkably meager as to give the impression that all the bones of the body could not have been buried. The soil about all of the bones found in this upper layer was absolutely free from any trace of animal or vegetable matter, which leads to the opinion that the bones were buried after having been denuded of flesh [*This level of detail indicates the care with which Reynold's conducted his excavation. Whether his interpretation is correct or not remains unknown, but the example is a testimony to his powers of observation and reasoning*]. A pot, No. 8 (N.M. 135193), lay close to the skull remains thus found. Like pots 1, 6, and 8, it had a small hole in the bottom, but had another sturdier pot (N.M. 135200) placed within it [*this indicates the occupants of the site occasionally "killed" their pots, a trait noted also noted in PeeDee* *vessels fro the Town Creek site,a s documented by Reid (1965, 1967)*]. Seven and a half feet [*2.3 m*] to the northeast of the fire bed, on a level apparently 5 inches [*12.7 cm*] lower than that of the pots heretofore described, lay pot No. 15 (N.M. 135213). Near it to the northeast were the remains of human bones (No. 10).

In the lower division, as in that last described, all the articles seemed to be clustered about a hearth B[*Figure 39, bottom in text*] and on the same general level [*i.e., suggesting most of the burials were all placed about the same time*]. here most of the human remains were found, but, like those in the upper burial, only the merest traces were observed. The conditions of this locality are very conducive to decay. Decayed and meager as they were, sufficient evidence was had in the case of each skeleton to show that it was human, such as the presence of teeth and certain identifiable bones.

The hearth B, which in some places was 10 feet [*3 m*] in diameter, was situated wholly southwest of the center [*The large size of the hearth and the layering within it (see below) again suggests intensive use, possibly within a structure missed in the fieldwork. Its location off center suggests the size and orientation of the mound shifted somewhat during later construction, most probably during the historic addition that gave he mound its final shape*]. Its composition was peculiar. It consisted of four layers of pure white ashes each one-half inch [*1.27 cm*] thick, separated by red burnt earth averaging an inch [*2.54 cm*] in thickness. Ashes formed the bottom as well as the topmost layer. The hearth rested on the curious black mold at the bottom [*i.e., the premound midden*]. This black mold did not penetrate to the north and east border of the mound, but lay only over an areas of which this hearth was the center. [*This suggests the black staining may have been associated with a structure of some kind, possibly a public building later covered over by mound fill.*]

Southwest of the hearth B and in connection with the remains of skeleton No. 2 was pot 9 (N.M. 135197), a bottle standing on a tripod of human heads, shown in Fig. 199 [*Figure 116, upper right. This vessel resembles forms from the central Mississippi Valley, and may come from there.*]. As traces of fire were noticed above this pot and skeleton, there seems to have been more than one ceremony attendant upon the burial of these articles. The pot 10 (N.M. 135194), which was found at the foot of this skeleton, seemed to have had originally a wooden cover, for in the earth taken from the top some small traces of decayed wood were noticed, and in the earth about it lay a clay pipe (N.M. 135223). Northeast of pot No. 9, and also near the fire bed, was a long-neck jar, 11 (N.M. 135295). (See Fig. 200.) [*Figure 116, lower left. This vessel also resembles forms from the Central Mississippi Valley, specifically Sikeston Negative Engraved from southeastern Missouri*] At its western base lay the pipes (N.M. 135216, 135218, 135219, 135220, 135222), five typical forms of which are shown in Pl. XXIV [*Figure 118*]. Pipe 3a and 3b (135216) was carved from soapstone; the remainder are of clay. Adjoining these articles on the northeast and on the same level were pots 12, 13, and 14 (N.M. 135196, 135204, 137215), and 6 inches [*15 cm*] below the former lay a copper ax head (N.M. 135228) wrapped in cloth and incased in bark.

Three or 4 feet [*0.91 or 1.22 m*] west of these, lying against each other, were two other pots, 16 and 17 (N.M. 135202, 135203). No. 16 (Fig. 201)[*Figure 116 lower right This vessel is engraved with a plumed serpent motif, whose design and execution has affinities with Moundville vessels as well as vessels found at Spiro, with some specific design motifs exactly duplicated on artifacts found at the latter site (Phillips and Brown 1978:194-195)*] was found lying on its side upon the black mold at the bottom, and beneath it, as if the pot were placed on top of them, were the fragments of thin and very brittle plates of copper (N.M. 135227), bearing Mexican figures in relief [*i.e., falcon warrior images, and possibly a cat-mask*], some

Pot from Hollywood mound, Georgia.

(Source: Thomas 1894)

Figure 117. PeeDee/Irene filfot stamped vessel from the Hollywood Mound.
(From Thomas 1894:Plate XIX)

BUREAU OF ETHNOLOGY TWELFTH ANNUAL REPORT PL. XXIV

Figure 118. Pipes from the Hollywood Mound. (From Thomas 1894: Plate XXIV)

flakes of mica, and decayed pieces of unidentified shells. The copper had been originally first wrapped in some kind of leather, then in fine, rush matting, and whole incased in bark.Beneath No. 17, which was also lying on its side, was a beautiful biconcave disk of quartz (N.M. 135260). Beneath this last, 3 or 4 inches [*7.6 or 10 cm*] deeper, and lying on the black mold at the bottom, were two copper celts (N.M. 135229) wrapped in cloth together and incased on both sides in bark. Accompanying this were several large pieces of mica. There were scarcely more than a handful of decayed bones in connection with these objects, identifiable only by the help of a few human teeth.

About the neck bones of skeleton 3, which lay 13 feet [*4 m*] northwest of the center, were found a lot of shell beads (N.M. 135247, Fig. 202) [*Figure 119*], and below these, a foot [*30 cm*] to the south, another lot of shell beads (N.M. 135242), a lot of perforated shell disks (N.M. 135248), the copper-sheathed ornament of wood (N.M. 135256) shown in Fig. 203 [*Figure 199; this appears to be an ear ornament*], and a lump of galenite.

Immediately north of the remains last described, on the same level and about 15 feet [*4.6 m*] northwest of center, lay the bones and teeth of what seemed to be another skeleton (No. 8). With it were found the lot of shell beads (N.M. 135233) shown in Fig. 204 [*Figure 119*], a copper ax or celt incased in wood (N.M. 135232), the decayed remains of the columella of the *Busycon perversum*, and a lump of soggy glauconite.

Nothing was found with skeleton No. 9, which lay southwest of the fire bed and near to skeleton 2 on the south, except a pipe (N.M. 135224). [*This suggests the individual was of lower status than the four previous interments.*]

Skeleton No. 5 lay about 23 feet [*7 m*] west of the center, almost on the lack mold at the bottom, and near its head were found a pipe (N.M. 135217), representing the head of an owl (Fig. 205) [*Figure 119, lower left*]; one decayed shell ornament, three stone celts, five discoidal stones, an anomalous stone implement, and a lump of glauconite. The apparent remains of another human burial were seen to the east of the hearth (skeleton No. 6), and near the teeth was discovered a well-shaped stone celt.

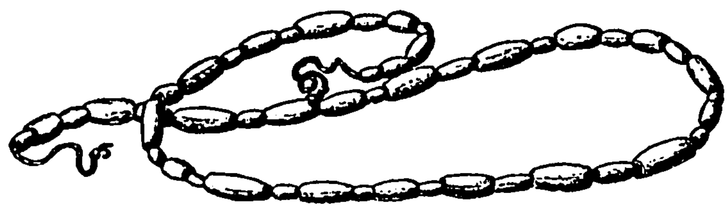
A pipe (N.M. 135225) was found in the earth two feet [*61 cm*] to the south of hearth B.

The piece of blue porcelain (N.M. 135279) shown in Fig. 206 [*Figure 119, lower right*] was found 4 feet [*1.22 m*] southwest of the center and six feet [*1.8 m*] beneath the surface of the mound. [*This would suggest the blue porcelain sherd came from about a foot or 30 cm below the boundary between the upper and lower divisions of the mound. This would still be within the zone of historic disturbance. All of the artifacts from the excavation, both historic and prehistoric, will need to be re-examined, taking advantage of gains in artifact typology and chronology, to more precisely date the age of the activities documented archaeologically, and the nature of these activities themselves.*]

Description of the Rembert Mound Group (1776)

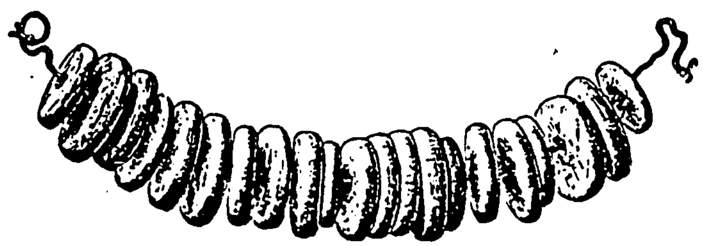
[Taken from *Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee County*, by William Bartram, pp. 324-326, first published in 1791. Annotations included in brackets]

I made a little excursion up the Savanna river [*spring 1776*], four or five miles



Shell beads from Hollywood mound, Georgia.

Copper article from Hollywood mound, Georgia.



Shell beads from Hollywood mound, Georgia.

Pipe from Hollywood mound, Georgia

Fragment of porcelain from
Hollywood mound, Georgia.

(Source: Thomas 1894: 324- 326)

Figure 119. Artifacts from the Hollywood Mound. (From Thomas 1894: Figures 202-206)

[*6.4 or 8 km*] above the fort, [*Fort James Dartmouth, at the confluence of the Broad and Savannah Rivers*] with the surgeon of the garrison, who was so polite as to attend me to shew me some remarkable Indian monuments, which are worthy of every travellers notice. These wonderful labors of the ancients stand in a level plain, very near the bank of the river, now twenty or thirty yards [*18.3 or 27.4 m*] from it; they consist of conical mounts of earth and four square terraces, &c. [*What is meant by this reference to "four square terraces"is unclear, unless the presumed plaza area in front of the mound was bounded or elevated in some way.*] The great mount is in the form of a cone, about forty or fifty feet [*12.2 or 15.2 m*] high, and the circumference of its base two or three hundred yards [*183 or 274 m; it is obvious from these statements that no effort was made to obtain precise measurements, or even close approximations using pacing or similar procedures*], entirely composed of the loamy rich earth of the low grounds; the top or apex is flat; a spiral path or track leading from the ground up to the top is still visible, where now grows a large, beautiful spreading Red Cedar (Juniperus Americana) there appear four niches, excavated out of the sides of this hill, at different heights from the base, fronting the four cardinal points; these niches or sentry boxes are entered into from the winding path, and seem to have been meant for resting places or lookouts. [*The mound appears to by a pyramidal substructure mound. The spiral path leading to the summit is a feature also seen on the primary mound at the Lamar site near Macon. The niches are a curious feature seemingly without parallel; if not historic pot holes they may have indeed served as sentry posts. The idea that they served as resting places seems improbable.*] The circumjacent level grounds are cleared and planted with Indian Corn at the present, and I think the proprietor of these lands, who accompanied us to this place, said that the mount itself yielded above one hundred bushels [*3523.8 liters*] in one season: [*this seems improbable, or indicates the entire summit and slopes were in cultivation*] the land hereabouts is indeed exceeding fertile and productive.

It is altogether unknown to us, what could have induced the Indians to raise such a heap of earth in this place, the ground for a great space around being subject to inundations, at least once a year, from which circumstance we may conclude they had no town or settled habitations here [*probably wrong*]: some imagine these tumuli were constructed for lookout towers. It is reasonable to suppose, however, that they were to serve some important purpose in those days, as they were public works, and would have required the united labor and attention of a whole nation, circumstanced as they were, to have constructed one of them almost in an age. There are several less ones round about the great one, with some very large tetragon terraces on each side, near one hundred yards [*91 m*] in length, and their surface four, six, eight, and ten feet [*1.22, 1.8, 2.4, and 3.0 m*] above the ground on which they stand.

We may however hazard a conjecture, that as there is generally a narrow space or ride in these low lands, immediately bordering on the rivers bank, which is eight or ten feet [*2.4 or 3.0 m*] higher than the adjoining low grounds, that lie betwixt the stream and the heights of the adjacent main land, which, when the river overflows its banks, are many feet under water, when, at the same time, this ridge on the river bank is above water and dry, and at such inundations appears as an island in the river. Now these people might have had a town on this ridge, and this mount raised for a retreat and refuge in case of inundations, which are unforeseen and surprise them very suddenly, spring and autumn. [*Bartram appears to be suggesting native settlement may have focused on the levee crest, to avoid flooding. The levee would have been the driest area within the floodplain. Bartram's explanation, however, does not help us understand why people lived here at all. since it would have been easier to live in the adjoining uplands than build elaborate refugia in the floodplain.*]

Ancient Tumuli on the Savannah River, Visited by William Bartram, in 1776 [The Rembert Mounds] (1877)

[Taken from *Annual; Report of the Board of Regents of the Smithsonian Institution Showing the Operations, Expenditures, and Condition of the Institution for the Year 1877*, by C. C. Jones, pp. 283-286, first published in 1878. Annotations included in brackets]

Near the close of a spring day in 1776, Mr. William Bartram, who, at the request of Dr. Fothergill, of London, had been for some time studying the flora of Carolina, Georgia, and Florida, forded Broad River just above its confluence with the Savannah, and became the guest of the commanding officer at Fort James. This fort was situated on an eminence in the forks of the Savannah and Broad, equidistant from those rivers, and from the extreme point of land formed by their union. Fort Charlotta [*later excavated by Caldwell (1974)*] was located about a mile [*1.6 km*] below, on the left bank of the Savannah. The stockade of Fort James was an acre [*0.40 ha*] in extent. [*Figure 120, the site is shown in relation to 1870s settlements*]

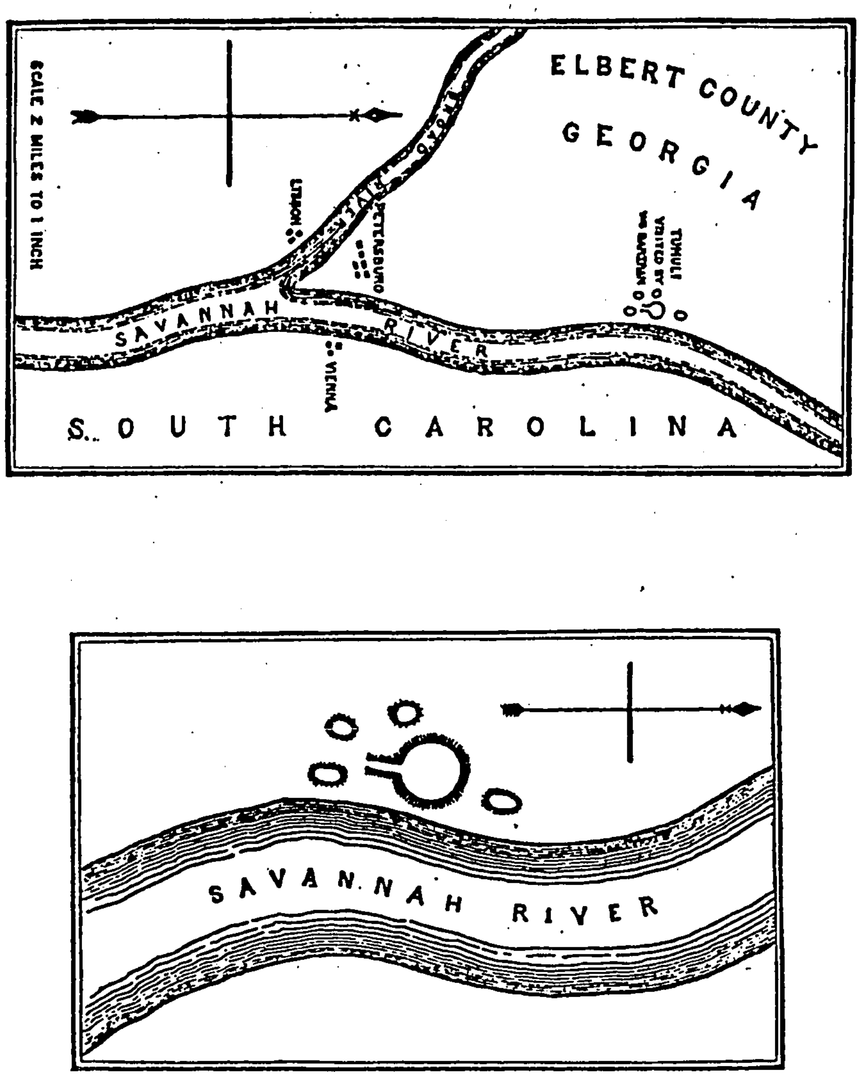
Attended by the polite surgeon of the garrison, Bartram made an excursion up the Savannah River, "to inspect some remarkable Indian monuments" [sic] four or five miles [*6.4 or 8 km*] above the fort. Of them he writes as follows: [*See the first paragraph from Bartram, above, which is reprinted above*]

Unable satisfactorily to determine the precise object the aborigines had in contemplation in the erection of this striking monument, he hazards the conjecture that the Indians formerly possessed a town on the river bank, and raised this mound "as a retreat and refuge in case of inundations, which are unforeseen, and surprise them very suddenly, spring and autumn."

What were the uses of the smaller elevations he does not suggest.

Wishing to note the changes which might have occurred during the past hundred years, we visited these tumuli a few weeks since [*ca. 1876*]. The attendant mounds, which are mainly grave-mounds, had been materially wasted by the plowshare and the influences of the varying seasons. The tetragon terraces had lost their distinctive outlines, and were little more than gentle elevations; their surfaces littered with sherds of pottery and flint chips, and occasionally with fragments of human bones. Freshets had sadly marred the level of the adjacent space. Overleaping the river bank, the turbid waters had carved deep pathways in the surface of the valley on both sides of the "great mount." There it remained, however, wholly unaffected by these unusual currents. It had evidently suffered no perceptible dimunition in its recorded dimensions. The Savannah River still pursued its long-established channel, but "the four niches or sentry-boxes," if they formerly existed, were entirely gone, and of "the spiral path or track leading from the ground up to the top" we could discover no trace. [*Given the reference to cultivation of the mound below, this is not a surprising observation if plowing had occurred*]. On the south a roadway, about 15 feet [*4.6 m*] wide and commencing at a point some distance from the base of the mound, leads with a regular grade to the top. This manifestly furnished the customary means of ascent, as the sides are too precipitous for convenient climbing. This feature seems to have escaped Mr. Bartram's observation. [*This may refer to a ramp, something indicated in Figure 120, or it may be a recent construction.*]

Not having been cultivated for many years, the apex and sides of this truncated cone are now clothed in a luxuriant growth of trees and swamp cane. Attired in such



Ancient tumuli on the Savannah River.

(Source: Jones 1877: 283-284)

Figure 120. The Rembert Mound Group (from Jones 1878, Figures 1 and 2).

attractive garb, this tumulus forms a marked object in the profile of the valley from which it springs. Proofs of long-continued occupancy, by the aborigines, of the adjacent territory are abundant. Ancient burial-places, the sites of old villages, traces of open-air workshops for the manufacture of implements of jasper, quartz, chert, greenstone, and soapstone, refuse piles, and abandoned fishing resorts [*presumably this refers to weirs in the river*], are by no means infrequent along both banks of the Savannah River. Upon the advent of the European the circumjacent valley was found cleared and in cultivation by the red men, who here had fixed abodes and were associated in considerable numbers. [*Here Jones seems, given the references to the sixteenth century and De Soto that follows, to be referring to the De Soto expedition, and his erroneous belief that the well-populated province of Cofitachequi was along the Savannah. There is no evidence for appreciable sixteenth century native occupation of this portion of the Savannah River Valley.*] The Southern tribes, in the sixteenth century, subsisted largely upon maize, beans, pumpkins, and melons. These they planted, tended, and harvested regularly. Of their agricultural labors at the dawn of the historic period we have full accounts.

So vast are the proportions of this largest mound that we are persuaded it rises beyond the dignity of an artificial place of retreat, elevation for chieftain-lodge, or mound of observation.

It appears entirely probable that it was a temple-mound, built for sun-worship, and that it forms one of a well-ascertained series of similar structures still extant within the limits of the Southern States. These Florida tribes, as they were called in the days of De Soto, worshipped sun and were frequently engaged in the labor of mound-building [*a fact not widely acknowledged in the 19th century*]. Over them ruled kings who exercised powers well-nigh despotic. Often were the concentrated labors of the nation directed to the accomplishment of allotted tasks. Hence, within the territory occupied by these people, we find many traces of early constructive skill of unusual magnitude.

The material employed in erecting this large tumulus differs from the soil of the surrounding bottom. It is a dark-colored, tenacious clay, while the surface of the valley is covered with a micaceous loam readily dissolving into an almost impalpable powder. Near by are no traces of pits or excavations [*but see Thomas's 1894 comment below*]. Nor are there indications that any earth was scraped up around the base. These facts afforded confirmation of the statement made by the present owner of the plantation upon which these tumuli are located, that the big mound had been built with clay brought from the Carolina side of the Savannah River. There clay abounds; and we were informed that in the side of the hill immediately opposite, the excavations may still be seen whence the tough material was obtained for heaping up this mound. This tumulus is one of the finest within the limits of Georgia, and should be classed with the truncated pyramids on Tumlin's plantation in the Etowah Valley, with the largest of the East Macon mounds, and with that frustrum of a four-sided pyramid on Messier's place, in Early County.

The Rembert Mounds (1894)

[Taken from John P. Rogan's description of the fieldwork, summarized in *Report of the Mound Explorations of the Bureau of Ethnology*, by Cyrus Thomas, pp. 315-317, first published in 1894. Annotations included in brackets]

These mounds were visited by Bartram in 1773 [*sic, the correct date is 1776*], who describes them: [*See the first paragraph from Bartram, above, which is reprinted here*].

In 1848 George White (author of White's Statistics of Georgia) visited this group, in regards to which he remarks as follows:

> The large mound corresponds exactly with Bartram's description of it, with this exception, that the sides and summit are covered with a growth of cane and several large trees. The smaller mounds have been almost destroyed. Capt. Rembert has excavated the smaller mounds and found human skeletons, jars, pipes, beads, breastplates [*of copper??*], stone hammers, hatchets, arrowheads, etc. Some of these are now in our possession and are really objects of curiosity.[6]

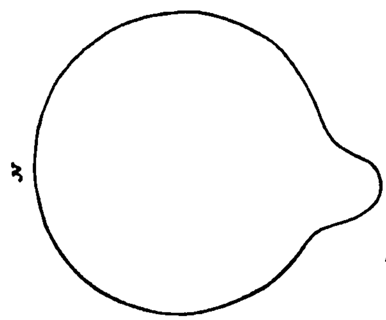
If these descriptions were correct at the time they were made, very decided changes have taken place in the appearance of the works since then. The group, consisting of 2 mounds, is situated on the farm of Mr. Z. A. Tate, near the bank of the Savannah river, 4 miles [*6.4 km*] above the mouth of Broad river. They stand on the level bottom, one 130 [*39.6 m*] and the other 390 feet [*118.9 m*] from the bank of the river. This bottom extends several miles north and south, and three-fourths of a mile [*1.2 km*] back from the river to the hills. As will be seen by reference to Fig. 193 [*Figure 121, top*], which shows a section, north and south, of the area, there are 2 "washouts" flanking these mounds. The one on the north (a), commencing at the river, extends a fourth of a mile [*0.4 km*] back in a southwest direction, covering an area of 7 or 8 acres [*2.8 or 3.2 ha*]. This approaches within about 200 feet [*61 m*] of the large mound (b). The one on the south (c) also commences at the river and extends back southeastward only a few hundred feet beyond the mounds and runs within a few feet of them. These excavations are denominated "washouts" because the present owner of the land, Mr. Tate, remembers when they were made by high water. Nevertheless, judging from present appearances, there are reasons for believing that at least a portion of the earth used in the construction of the mounds was obtained here, leaving depressions, and that, during high water, when the land was overflowed, as is frequently the case, channels were washed out from them to the river. The south margin of the southern "washout" is fully 4 feet [*1.22 m*] higher than the land on which the mounds stand.

Mound No. 1.—This, which is much the larger of the two, stands 130 feet [*39.6 m*] from the river bank, and is, exclusive of the ramp or projection, an exact circle 151 feet [*46 m*] in diameter, nearly flat on top, and 30 feet [*9.1 m*] high at the highest point (north side), but only 27 feet [*8.2 m*] near the south side. The diameter of the top is about 70 feet [*21.3 m*]. The plan of the ramp or rather extension, as it seems to be, is shown in Figure 194 [*Figure 121, middle*]. The vertical outline of the mound, with a section of the shaft, is presented in Fig. 195 [*Figure 121, bottom*]. The right or southern end of this shows the slope of the extension. This has an average width on top of 20 feet [*6.1 m*].

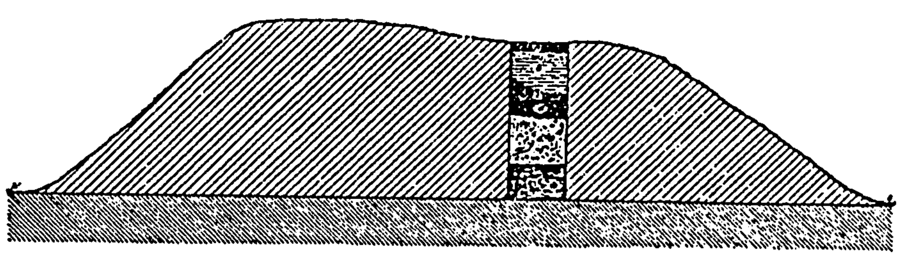
The mound is covered with trees such as sugarberry, walnut, hickory, and oak. One sugarberry is 6 feet [*1.8 m*] in circumference (at stump height); a walnut, 5 feet [*1.5 m*] ; a hickory, 3 1/2 feet [*1.06 m*] ; and an oak, 10 feet [*3 m*]. [*This strongly suggests the mound summit was not cultivated, contrary to the implication in Jones 1978 account.*] The shaft was carried down to the bottom. The first foot [*30 cm*] was of soil (a), then 7 feet [*2.1 m*] of dark sandy loam (b), next 1 1/2 feet [*15 cm*] of thoroughly burned yellowish clay and sand (c), with a large percentage of ashes. This layer had the appearance of having been put down and packed while wet and then burned; it was so hard that it was difficult to break it. Next 3 feet [*91 cm*] of black earth also packed (d); then 8 1/2 feet [*2.6 m*] of

6 Statistics of Georgia, p. 230.

Section of the Rembert group, Elbert county, Georgia.



Plan of mound No. 1, Rembert group.



Vertical section, mound No. 1, Rembert group.

(Source: Thomas 1894: 316-318)

Figure 121. The Rembert Mound Group (from Thomas 1894: Figures 193-195)

pure sand (e); and last, resting on the original surface, 6 feet [*1.8 m*] of hard bluish muck (f). All of these layers, except the bottom one, had charcoal, mica, fragments of pottery, and animal bones scattered through them, but the last were so far decomposed that none of them could be saved.

As fragments of pottery and animal bones were found in spots, together with ashes and other indications of fire, it is probable these were fire beds where cooking had been done. All that portion of the shaft below the layer of burned clay was so very dry that when turned up it would crumble to dust. It is possible that the bottom layer of blue "muck" is partly the original soil, as it is much like the surrounding soil, and that a part of the surrounding surface has been washed away since the mound was built.

Mound No. 2 (not shown in the figure) stands about 40 feet [*12.1 m*] west of the base of No. 1. It is oblong in form, 58 feet [*17.7 m*] long north and south, 41 feet [*12.5 m*] wide, and 6 feet [*1.8 m*] high. A large shaft had been sunk in the middle by some previous explorer, hence investigations were confined to the eastern and western sides, which presented one or two peculiarities. With the exception of the top layer of soil, 1 foot [*30 cm*] thick, the remainder on the east side consisted of river sand, with particles of charcoal and vegetable matter mixed through it, while on the west it was composed of small masses of red clay and dark earth. In this, at a depth of 2 1/2 feet [*76 cm*], were the bones of a single adult skeleton. These were packed together in a space 2 feet [*61 cm*] square and 18 inches [*46 cm*] deep; the skull was placed face down and all the other bones piled about it. Immediately over the bones was a layer of red 2 inches [*5.1 cm*] thick, burned hard. Resting on this layer were remains of a pretty thoroughly burned fire. A few fragments of pottery and a small clay pipe were found.

Description of Tugalo (1894)

[Taken from John P. Rogan's description of the fieldwork, summarized in *Report of the Mound Explorations of the Bureau of Ethnology*, by Cyrus Thomas, pp. 314-315, first published in 1894. Annotations included in brackets]

But one mound in this county was examined. This is situated on the farm of Mr. Patton Jarrett, in the western part of the county, on the south bank of Tugalo River, one-fourth of a mile [*0.4 km*] above the mouth of Toccoa Creek. It is conical in form, the base almost exactly circular, precisely 100 feet [*30.5 m*] in diameter, and a little over 14 feet [*4.3 m*] high. The owner would permit no further examination than could be made by sinking one shaft. [*This shaft may be one of the units marked "Treasure hunter # 1" and "Treasure hunter # 2" on Caldwell's 1956 plan of Mound Stage 1, illustrated in Figure 50 in the text*]. Nothing further than the stratification was ascertained, which is as follows: (1) top layer, 2 1/2 feet [*76 cm*] of soil similar to that of the surrounding surface, but with a quantity of charcoal scattered through it; (2) a layer 1 inch [*2.54 cm*] thick of charcoal; (3) 6 inches [*15 cm*] of dark red clay or muck; (4) 2 feet [*61 cm*] of sandy loam; (5) 6 inches [*15 cm*] of bright red, very hard, clay, apparently sun-dried; (6) 4 feet [*1.22 m*] of dark, rich loam, with a little charcoal scattered through it; (7) 6 inches [*15 cm*] of dark clay or muck; (8) 6 inches [*15 cm*] of sandy loam; (9) 2 feet [*61 cm*] of dark, rich loam; and, lastly, resting on the original surface, 2 feet [*61 cm*] of river sand. In the sixth and ninth layers were a few fragments of pottery.

Description of Keowee (1776)

[Taken from *Travels through North and South Carolina, Georgia, East and West Florida, the Cherokee County*, by William Bartram, p. 332, first published in 1791. Annotations included in brackets]

There are several Indian mounts or tumuli, and terraces, monuments of the ancients, at the old site of Keowe, near the Fort Prince George, but no Indian habitations at the present... (Bartram 1791:332) [*Bartram appears to be referring to the low circular burial mounds at the I.C. Few site, one of which was examined by Grange (1972) in 1967, during investigations in the Keowee Reservoir. If other earthworks or mound were present they appear to have been reduced in the intervening years.*]

I observed in the environs of Keowe, on the bases of the rocky hills, immediately ascending from the low grounds near the river bank, a great number of very singular antiquities, the work of the ancients; they seem to me to have been altars for sacrifice or sepulchres; they were constructed of four flat stones, two set on an edge for the sides, one closed one end, a very large flat one lay horizontally at top, so that the other end was open; this fabric was four or five feet [*1.22 or 1.52 m*] in length, two feet [*61 cm*] high, and three [*91 cm*] in width. I enquired of the trader what they were, who could not tell me certainly, but supposed then to be ancient Indian ovens; the Indians can give no account of them; they are on the surface of the ground and are of different dimensions (Bartram 1791:372). [*Features possibly related to stone mound burials along the upper Oconee in Georgia, or stone box graves in Tennessee?*]

The Lawton Mound Group (38AL11)
Allendale County, South Carolina: Statement of Significance

[Manuscript prepared June 21, 1989 by David G. Anderson and placed on file at the South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, South Carolina.]

INTRODUCTION

The Lawton Mound Group (38AL11), located in western Allendale County, South Carolina, is currently one of the best preserved prehistoric mound groups in the southeastern United States, and unquestionably the best preserved site of its kind in South Carolina. The site, located on a terrace in a dense hardwoods swamp forest overlooking the Savannah River, includes two flat topped platform mounds and an associated village area surrounded by a fortification ditch and embankment [*Figure 38 in text*]. Limited archaeological research, undertaken in 1898, 1970, and 1989 indicates the site was occupied for about one to two centuries, from ca. A.D. 1100 to 1300, during the initial spread of agriculturally-based Mississippian populations into the South Carolina area. The site covers approximately three and a half acres [*1.4 ha*] and is in excellent condition, having escaped both intensive logging and agricultural clearing and plowing though the enlightened attitude of its owners, the Lawton family, who have maintained it for over a century. The architectural features of the site are, in fact, in a remarkable state of preservation, in part because the largely undisturbed swamp forest setting has masked their presence. The mounds are distinct in outline, as are the ditch and associated outer parapets, and well-preserved midden deposits have been found in the village area around the mounds. The importance of the site is such that it was one of the first archaeological properties in the state nominated to the National Register of Historic Places, where it has been listed since 1971.

SITE LOCATION

The Lawton Mound group is located west of Allendale, South Carolina [*precise site location deleted to help prevent looting*]. The land is currently owned by Mrs. Harriett (Lawton) Watson of Ridge Springs, South Carolina, and has been in the hands of the Lawton family throughout the 20th century. No improved roads lead to the site, which is in dense forest. The main river channel is ca. 200 m to the west, through the swamp forest. An old oxbow, [deleted], is located to the north of the site area. The lack of direct public access by both land and water, and the vigilance of the landowners, is the primary reason the mounds have previously escaped destruction.

HISTORY OF ARCHAEOLOGICAL INVESTIGATIONS :

The Lawton Mound Group has seen comparatively little scientific investigation, having been examined by professional archaeologists on only three occasions. The site was visited by C. B. Moore in 1897/1898, who dug several trenches into the southern mound. It was revisited in 1970 by archaeologists from the South Carolina Institute of Archaeology and Anthropology (SCIAA), who mapped the site and made a small artifact collection. The site was briefly revisited by SCIAA archaeologists in June 1989, who briefly assessed its condition.

The 1897/1898 Testing

The Lawton Mound Group was first visited during the winter of 1897/1898 by Clarence B. Moore, a wealthy industrialist and scholar who examined mounds along the river systems of the southeast over an almost twenty year period, from the late 1890's well into the second decade of the twentieth century. Moore examined 13 mounds at six separate locations along the Savannah, in explorations that extended from the coast to the fall line. At the Lawton Mound Group Moore opened a series of trenches 3 to 4 feet [*0.91 to 1.22 m*] wide and 5 to 6 feet [*1.52 to 1.83 m*] deep, and totalling 45 feet [*13.7 m*] in length, in the northernmost of the two platform mounds at the site. His description of "Mounds Near Brooks Landing, S. C.," which remains the only published account on the site [*was presented previously*].

Moore's efforts were directed to the northern mound. It is apparent he ceased work at the site because no unusual artifacts rewarded his efforts. As he himself put it, describing his work along the Savannah in general:

> It soon became apparent to us that the Savannah River, though no digging into the mounds had been attempted for scientific purposes, did not offer a promising field... Therefore we did not pursue our usual custom, totally to demolish each mound discovered, as we had done, as a rule, in Florida and on the Georgia coast (Moore 1898:167)

No work was done on the southern mound, and no mention was made of the ditch and embankment line surrounding the site. Moore's lack of success, and the fact that this has been the only published description of the site, has helped to preserve it to this day, since few modern looters are aware of this early report.

Moore's meager description does offer important information about the site. The presence of a premound midden, probably from the community that existed at the time the mounds were erected, is present below the northern mound, and probably offers clues about how mound ceremonialism came to adopted locally. The absence of evidence for pronounced layering in the fill, or much associated artifactual debris, suggests that the northern mound was erected in one or a few building episodes, and probably served as a temple platform rather than for burials. That is, the mound probably served to elevate (physically and symbolically) a temple structure, where only the local elite would be expected to live or worship. The absence of distinct layering in the mound suggests fairly rapid construction, in one or a few stages. Each successive construction stage would have probably been characterized by an artifact rich, stratigraphically distinct occupation surface, possibly with associated burials. It must be cautioned, however, that Moore's interest lay more in acquiring artifacts than interpreting stratigraphy, and hence he may not have recognized construction stages had they been present.

The 1970 Testing

The Lawton Mound Group was brought to the attention of the newly formed South Carolina Institute of Archaeology and Anthropology (which was created in 1967) by local citizens, who were digging at the site. An initial reconnaissance visit was made in February 1970 by E. Thomas Hemmings, then a staff archaeologists with the SCIAA. In December 1970 Hemmings and Richard Polhemus, another SCIAA staff archaeologist returned to the site for several days and conducted a more detailed investigation. An map of the site area was drawn using a plane table and alidade [*Figure 38, in text*], and several recent potholes were cleaned up and profiled. A small collection of artifacts was made, consisting of materials found in the pothunter spoil piles and in the profile cleaning operations. Until the 1989 revisit, these data provided the only modern information about the site stratigraphy and content.

Three days were spent in mapping, much of it in clearing lines of sight through the underbrush, which was high even given the winter conditions. Four transit stations were required, and 121 reference points were shot. All measurements were taped. The area within the enclosure was found to average approximately 440 feet (N/S) by 300 feet (E/W) [*134.1 by 91.4 m*]. The two mounds were found to lie approximately 100 feet [*30.5 m*] apart on the west side of the enclosure, near the terrace edge overlooking the swamp. The terrace margin is bisected just to the north of the southern mound by a sloping depression that may be the remains of an entrance leading to the river. Both mounds were largely intact, although each had a number of recent potholes in their upper levels. The northern mound, which had been tested by Moore, was ca. 5 feet [*1.52 m*] high and measured 40 feet (N/S) by 55 feet (E/W) [*12.2 by 16.8 m*] at the base. The summit was uniformly flat across its extent. The southern mound was somewhat larger than the northern mound, ca. 7.5 feet [*2.3 m*] in height, and 40 feet (N/S) by 60 feet (E/W) [*12.2 by 18.3 m*] in extent. A squared area in the southern half of the summit was elevated ca. one foot [*30 cm*] above the northern end, suggesting the presence of a structure foundation, or at least some formal partitioning of the space atop the mound, during its last period of use.

The ditch surrounding the village area was between ca. 15 to 18 feet [*4.6 to 5.5 m*] wide, and approximately three feet [*91 cm*] deep. The walls of the ditch were fairly sharp and squared, indicating that only comparatively minimal slumping had occurred. The fill was placed immediately outside of the ditch, forming a low embankment or parapet approximately 3 feet [*91 cm*] high and ca. 12 feet [*3.7 m*] wide. Several gaps were present in the embankment line that may represent village entranceways. The embankment was distinct along much of its course, indicating that erosion or reduction processes have not had a great deal of effect on its overall shape. Comparable ditch and embankment features have been documented at a number of southeastern Mississippian sites, although in most cases they have been partially or completely destroyed by plowing.

Stratigraphic profiles were recorded from several locations on the site, providing some data on the nature and history of the occupation. A 7.4 foot [*2.3 m*] deep pothole near the summit of the south mound produced evidence for two mound stages. An extensive layer of charcoal and burned daub was found immediately below the surface, and probably represented the burned remains of structures atop the final stage of the mound. A second burned layer was found at a depth of ca. two feet [*61 cm*] below the surface, probably representing burned temple/structural remains atop an earlier construction stage. Below this was four feet [*1.22 m*] of uninterrupted sandy yellow clay. At a depth of six feet [*1.82 m*] a darker layer was found that may represent an initial mound stage, or a premound occupation surface. A second profile, obtained from a cut in the west side of the mound, revealed six distinct strata, suggesting that the mound may have been built in several construction stages.

A two foot [*61 cm*] deep profile was obtained from a pothole in the summit of the northern mound. No clear evidence for separate stages was identified, although a postmold was found at a depth of ca. 12 inches [*30 cm*] that may be from a structure associated with one of the final periods of use of the mound. A profile taken from a pothole opened in the "village" area ca. 100 feet [*30.5 m*] east of the southern mound found the apparent remains of a house floor with an associated pit or post feature approximately 12 inches [*30 cm*] below the surface.

A small collection of artifacts was made from three areas within the site. These were initially cataloged by Hemmings, and were reexamined by David G. Anderson in 1975 and again briefly in 1985. Most of the material came from a large pothole into a possible house floor in the village area, and included a ground and polished celt fragment, 8 chert flakes, and 78 potsherds. The ceramics from this area were dominated by plain and check stamped finishes (Savannah Check Stamped, Savannah Plain and Burnished Plain), with minor quantities of fine cord marked (Savannah Fine Cord Marked), corncob impressed, and curvilinear and rectilinear (Etowah/Savannah) complicated stamped finishes also noted. One of the check stamped sherds had a single row of circular cane punctations impressed parallel to and just below the rim, a Pee Dee-like attribute usually restricted to complicated stamped vessels (Reid 1967). The "village" assemblage is currently thought to date from the Savannah II/III periods, from ca. A.D. 1100 to 1300.

Two Savannah Check Stamped and three plain (one faintly stamped) sherds were found while cleaning up a pothole in the top of the north mound. One of these sherds was a pottery discoidal with faint parallel simple or complicated stamping, found at a depth of 1.5 feet [*46 cm*] in the post stain. A Savannah II/III age for the final period of use of the northern mound summit is indicated. A number of fired daub lumps as well as one plain sherd were collected from the top of the south mound. These materials do not permit the accurate dating of the south mound, although contemporaneity with the northern mound and village occupations may be inferred.

The 1989 Visit

On Thursday afternoon, June 15, 1989 a party of archaeologists from the SCIAA revisited the Lawton Mounds to briefly assess the condition of the site. The group was led by George and Robert Webb of Salley, S.C., Mrs. Watson's caretakers. Visitors included SCIAA archaeologists Mark J. Brooks, Albert C. Goodyear, Bruce Rippeteau

(South Carolina State Archaeologist), and Kenneth Sassaman; Stewart Greeter of the South Carolina Heritage Trust; David G. Anderson (SCIAA Research Associate and National Park Service Archaeologist); and Jennifer Jewell (SCIAA Business Manager). Approximately one and a half hours were spent at the site, which was in fairly dense underbrush. During the visit the tops and perimeter of the two mounds were examined, and the fortification ditch surrounding the site was walked. The presumed village area to the east of the mounds was briefly inspected.

The site remains in a remarkable state of preservation, although there has been a moderate amount of recent looting. The ditch was well defined around much of its course. Only the southeast corner was somewhat indistinct. Half a dozen recent potholes ca. 2 m long by 1 m wide by 1 m deep were present on the summit of the north mound, with probable human bone fragments observed in the backdirt of one pothole on the south side of the summit. A considerable quantity of mussel shell debris, probable food refuse, was found in a pothole just off the summit on the northwest slope of the mound. The south mound was similarly disturbed, with a number of small potholes evident (ca. 1 m by 1 m by 0.5 m). One major pothole ca. 2 m long by 1.5 m wide by 1.2 m deep was present on the highest part of the summit that appears to have intersected structural debris. Several large fragments of daub up to a half kilogram in size were found in the pothole spoil dirt. All of the potholes were fresh and appeared to have been worked this year, although some are clearly earlier potholes that the looters reexamined. Several small (ca. 1 m by 1 m by 0.5 m) potholes were observed in the village area, one with appreciable quantity of mussel shell debris in the backdirt. A looter's screen was found between the two mounds and was destroyed.

With the Webb's permission a small collection of pottery and four pieces of daub were collected from the pothole spoil dirt. Only a small number of sherds were observed on the site surface, and most of these were small plain fragments. Only large or decorated sherds were retained. This material, which has been entered into the SCIAA collections, included the following: 5 fine Savannah Check Stamped, 4 plain, 3 burnished plain, 2 unidentifiable, 1 fine parallel cord marked sherd with abrader facets, 1 possible rectilinear complicated stamped sherd with abrader facets, 1 Savannah Complicated Stamped (bullseye motif/concentric circles), and 1 rectilinear complicated stamped (possible line block motif). With the exception of the line block, all the artifacts are classic Savannah II/III materials, dating from ca. A.D. 1100 to 1300. The line block motif, if correctly identified, is an Irene decoration (ca. A.D. 1300 to 1450), and may indicate later Mississippian site use. The daub fragments from the south mound appear to come from an appreciable structure. Stick impressions up to 3 cm wide were observed, and one large piece that was saved is flattened on one side, suggesting smoothing of the wall upon daubing/plastering.

STATEMENT OF SIGNIFICANCE

The Lawton Mound Group is an small Mississippian ceremonial center and village dating to approximately A.D. 1100 to 1300. The degree of preservation documented within the archaeological deposits at the site is truly remarkable for the southeastern United States, and is unique within South Carolina. The site contains distinct exterior fortifications (a ditch and outer embankment, with entrance gaps), platform mounds with evidence for burned structures in their fill, and an extensive associated village area with well preserved features, including probable house floors, immediately below the surface. Disturbance by vandals, while present, is minor. Preservation such as this is rarely encountered in the Southeast, where most such sites have either been plowed or intentionally leveled by farming practices, or dug away by either earlier generations of archaeologists or looters.

In the state of South Carolina the Lawton Mound group is unique. Late in the last century some 35 probable Mississippian period mounds or mound groups were recorded from South Carolina by the Bureau of American Ethnology (Thomas 1891; Holmes 1903). Almost all of these have since been destroyed or extensively damaged. Only the Fort Watson mound, which is in a state park on the shores of Lake Marion, and a few damaged mounds or mound remnants in private ownership near Camden remain at the present, and all of these sites had been farmed or otherwise heavily disturbed at some point in their history. Lawton is thus the only largely undisturbed Mississippian mound complex in the state, and one of only a very few left in the southeastern United States.

The Lawton Mound Group is currently the only surviving mound complex within the Savannah River valley (Anderson et al. 1986). In brief, all of the major sites except Lawton have been lost. The Irene mound group near Savannah was destroyed by development in the 1940s; the Silver Bluff/Mason Plantation mounds below Augusta in South Carolina washed into the Savannah River late in the last century; the Hollywood mounds below Augusta in Georgia was almost completely excavated by professional archaeologists late in the last century and again in the 1960s; and all but one of the mounds in the Piedmont (Rembert, Beaverdam Creek, Estatoe, Chauga, and Tugalo) were lost to reservoir construction from the 1950s to 1980s. The only exception, the Tate Mound in Elbert County, Georgia, is a small single mound that has suffered considerable plow-damage. While several isolated, plow-reduced mounds have been reported in the Coastal Plain portion of the drainage, these have seen little formal examination.

The Lawton Mound Group thus offers considerable potential for scientific research. At the time the site was occupied it was probably the primary ceremonial focus for native populations in the central Coastal Plain along the Savannah. It also apparently represents an initial or founding settlement by Mississippian agriculturalists in this part of the region. As such, Lawton offers the potential to explore questions about the spread of agriculture in the eastern Woodlands, the emergence and spread of complex, chiefdom-level societies, and their interaction with local groups.

CONCLUSIONS

Every effort should be made to see to it that the Lawton Mound Group is preserved in undisturbed condition for future generations of South Carolinians. The site, as of June 1989, remains in a remarkable degree of preservation. While looting is ongoing, damage to date appears restricted to the upper mound stages. While appreciable damage has been done to structures and burials in the upper 2 to 3 feet [*61 to 91 cm*] of the mounds, a great deal of significant information remains. The landowner maintains a strong interest in the site, and this fact, and the vigilance of the caretakers, should help deter most vandalism. Looters caught in the act of desecrating the site should be prosecuted to the fullest extent of the law, with archaeologists from the SCIAA called upon, if necessary, to provide expert witness testimony in court.

The exact condition of the archaeological and natural features of the site should be determined through a program of limited test excavation at some time in the next few years. This must be done with great care, and only by competent professional archaeologists having the written approval of the South Carolina State Archaeologist.

Archaeological investigations at the Lawton Mound Group for the present should focus on more precisely determining the age, extent, and present condition of the site's archaeological deposits. This can be accomplished through a fairly limited program of fieldwork directed to cleaning up and profiling existing potholes (and then filling them), limited testing in several site areas (i.e., near the mounds, in the village area, and in the vicinity of the ditch and parapet. Potholes should be filled in with clean dirt, preferably sand or some other identifiable matrix, brought in from off the site area (to avoid further damage). Under no conditions should further work proceed on the mounds themselves (beyond cleaning up, profiling, and then refilling existing potholes) unless they are threatened with destruction. Given the architectural information apparently present within the mounds (i.e, burned temple structures), large scale excavations should be deferred until sufficient resources are available to ensure a state of the art field and analysis effort.

APPENDIX B

PALMER DROUGHT SEVERITY DENDROCHRONOLOGICAL DATA, A.D. 1300-1980.

Courtesy Drs. Malcolm R. Cleaveland and David W. Stahle
Tree Ring Laboratory, Department of Geography, University of Arkansas

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1300	1.062	0.531	1.531	0	1.531	0
1301	0.832	0.416	1.947	0	1.947	0
1302	0.806	0.403	2	0.35	2.35	0
1303	-0.608	-0.304	1.696	0	2.046	0
1304	-0.52	-0.26	1.436	0	1.786	0
1305	-0.718	-0.359	1.077	0	1.427	0
1306	0.305	0.1525	1.2295	0	1.5795	0
1307	-1.274	-0.637	0.5925	0	0.9425	0
1308	0.279	0.1395	0.732	0	1.082	0
1309	0.949	0.4745	1.2065	0	1.5565	0
1310	-1.105	-0.5525	0.654	0	1.004	0
1311	-2.648	-1	-0.346	0	0.004	0
1312	-1.689	-0.8445	-1	0	-0.8405	0
1313	1.462	0.731	-0.269	0	-0.1095	0
1314	1.218	0.609	0.34	0	0.4995	0
1315	-1.16	-0.58	-0.24	0	-0.0805	0
1316	-0.598	-0.299	-0.539	0	-0.3795	0
1317	0.013	0.0065	-0.5325	0	-0.373	0
1318	0.582	0.291	-0.2415	0	-0.082	0
1319	-0.331	-0.1655	-0.407	0	-0.2475	0
1320	0.764	0.382	-0.025	0	0.1345	0
1321	-0.188	-0.094	-0.119	0	0.0405	0
1322	-0.289	-0.1445	-0.2635	0	-0.104	0
1323	0.63	0.315	0.0515	0	0.211	0
1324	-1.699	-0.8495	-0.798	0	-0.6385	0
1325	-0.887	-0.4435	-1	0	-1	0
1326	-0.328	-0.164	-1	0	-1	0
1327	0.897	0.4485	-0.5515	0	-0.5515	0
1328	0.484	0.242	-0.3095	0	-0.3095	0
1329	0	0	-0.3095	0	-0.3095	0
1330	1.449	0.7245	0.415	0	0.415	0
1331	-0.851	-0.4255	-0.0105	0	-0.0105	0
1332	0.624	0.312	0.3015	0	0.3015	0
1333	-1.248	-0.624	-0.3225	0	-0.3225	0
1334	-1.134	-0.567	-0.8895	0	-0.8895	0
1335	-0.705	-0.3525	-1	0	-1	0
1336	-0.117	-0.0585	-1	0	-1	0
1337	0.611	0.3055	-0.6945	0	-0.6945	0
1338	-0.903	-0.4515	-1	0	-1	0
1339	-1.127	-0.5635	-1	0	-1	0
1340	0.799	0.3995	-0.6005	0	-0.6005	0
1341	0.738	0.369	-0.2315	0	-0.2315	0
1342	-1.381	-0.6905	-0.922	0	-0.922	0
1343	1.14	0.57	-0.352	0	-0.352	0
1344	0.754	0.377	0.025	0	0.025	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1345	0.058	0.029	0.054	0	0.054	0
1346	-0.175	-0.0875	-0.0335	0	-0.0335	0
1347	-0.214	-0.107	-0.1405	0	-0.1405	0
1348	0.89	0.445	0.3045	0	0.3045	0
1349	1.699	0.8495	1.154	0	1.154	0
1350	0.188	0.094	1.248	0	1.248	0
1351	0.127	0.0635	1.3115	0	1.3115	0
1352	-0.569	-0.2845	1.027	0	1.027	0
1353	0.88	0.44	1.467	0	1.467	0
1354	-0.738	-0.369	1.098	0	1.098	0
1355	2.648	1.324	2	0.422	2.422	0
1356	-1.335	-0.6675	1.3325	0	1.7545	0
1357	1.179	0.5895	1.922	0	2.344	0
1358	0.208	0.104	2	0.026	2.448	0
1359	-2.498	-1	1	0	1.448	0
1360	-0.591	-0.2955	0.7045	0	1.1525	0
1361	-0.699	-0.3495	0.355	0	0.803	0
1362	0.172	0.086	0.441	0	0.889	0
1363	0.971	0.4855	0.9265	0	1.3745	0
1364	0.302	0.151	1.0775	0	1.5255	0
1365	0.192	0.096	1.1735	0	1.6215	0
1366	1.508	0.754	1.9275	0	2.3755	0
1367	-0.939	-0.4695	1.458	0	1.906	0
1368	2.797	1.3985	2	0.8565	3	0.3045
1369	-1.689	-0.8445	1.1555	0	2.1555	0
1370	0.494	0.247	1.4025	0	2.4025	0
1371	1.092	0.546	1.9485	0	2.9485	0
1372	-1.215	-0.6075	1.341	0	2.341	0
1373	-0.078	-0.039	1.302	0	2.302	0
1374	-1.251	-0.6255	0.6765	0	1.6765	0
1375	-1.306	-0.653	0.0235	0	1.0235	0
1376	-0.442	-0.221	-0.1975	0	0.8025	0
1377	-0.559	-0.2795	-0.477	0	0.523	0
1378	0.559	0.2795	-0.1975	0	0.8025	0
1379	-1.007	-0.5035	-0.701	0	0.299	0
1380	-0.276	-0.138	-0.839	0	0.161	0
1381	-0.175	-0.0875	-0.9265	0	0.0735	0
1382	0.033	0.0165	-0.91	0	0.09	0
1383	2.265	1.1325	0.2225	0	1.2225	0
1384	1.121	0.5605	0.783	0	1.783	0
1385	-0.565	-0.2825	0.5005	0	1.5005	0
1386	1.829	0.9145	1.415	0	2.415	0
1387	0.517	0.2585	1.6735	0	2.6735	0
1388	2.768	1.384	2	1.0575	3	1.0575
1389	-0.919	-0.4595	1.5405	0	2.5405	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1390	-1.088	-0.544	0.9965	0	1.9965	0
1391	-0.348	-0.174	0.8225	0	1.8225	0
1392	-1.66	-0.83	-0.0075	0	0.9925	0
1393	0.611	0.3055	0.298	0	1.298	0
1394	0.984	0.492	0.79	0	1.79	0
1395	0.471	0.2355	1.0255	0	2.0255	0
1396	1.787	0.8935	1.919	0	2.919	0
1397	-0.783	-0.3915	1.5275	0	2.5275	0
1398	-0.474	-0.237	1.2905	0	2.2905	0
1399	-0.036	-0.018	1.2725	0	2.2725	0
1400	2.206	1.103	2	0.3755	3	0.3755
1401	-0.361	-0.1805	1.8195	0	2.8195	0
1402	0.832	0.416	2	0.2355	3	0.2355
1403	-0.536	-0.268	1.732	0	2.732	0
1404	0.565	0.2825	2	0.0145	3	0.0145
1405	0.036	0.018	2	0.018	3	0.018
1406	0.666	0.333	2	0.333	3	0.333
1407	-1.43	-0.715	1.285	0	2.285	0
1408	0.793	0.3965	1.6815	0	2.6815	0
1409	-0.708	-0.354	1.3275	0	2.3275	0
1410	-0.981	-0.4905	0.837	0	1.837	0
1411	-1.036	-0.518	0.319	0	1.319	0
1412	0.007	0.0035	0.3225	0	1.3225	0
1413	1.326	0.663	0.9855	0	1.9855	0
1414	0.653	0.3265	1.312	0	2.312	0
1415	0.487	0.2435	1.5555	0	2.5555	0
1416	0.66	0.33	1.8855	0	2.8855	0
1417	0.471	0.2355	2	0.121	3	0.121
1418	1.634	0.817	2	0.817	3	0.817
1419	-0.227	-0.1135	1.8865	0	2.8865	0
1420	1.007	0.5035	2	0.39	3	0.39
1421	-0.841	-0.4205	1.5795	0	2.5795	0
1422	0.439	0.2195	1.799	0	2.799	0
1423	0.088	0.044	1.843	0	2.843	0
1424	0.24	0.12	1.963	0	2.963	0
1425	0.673	0.3365	2	0.2995	3	0.2995
1426	0.218	0.109	2	0.109	3	0.109
1427	-1.764	-0.882	1.118	0	2.118	0
1428	-0.315	-0.1575	0.9605	0	1.9605	0
1429	1.452	0.726	1.6865	0	2.6865	0
1430	0.029	0.0145	1.701	0	2.701	0
1431	-2.326	-1	0.701	0	1.701	0
1432	0.075	0.0375	0.7385	0	1.7385	0
1433	-0.565	-0.2825	0.456	0	1.456	0
1434	0.913	0.4565	0.9125	0	1.9125	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1435	-0.149	-0.0745	0.838	0	1.838	0
1436	-0.055	-0.0275	0.8105	0	1.8105	0
1437	0.348	0.174	0.9845	0	1.9845	0
1438	-0.364	-0.182	0.8025	0	1.8025	0
1439	0.513	0.2565	1.059	0	2.059	0
1440	-0.686	-0.343	0.716	0	1.716	0
1441	0.364	0.182	0.898	0	1.898	0
1442	-0.439	-0.2195	0.6785	0	1.6785	0
1443	1.586	0.793	1.4715	0	2.4715	0
1444	0.114	0.057	1.5285	0	2.5285	0
1445	0.318	0.159	1.6875	0	2.6875	0
1446	-0.049	-0.0245	1.663	0	2.663	0
1447	-0.078	-0.039	1.624	0	2.624	0
1448	-0.198	-0.099	1.525	0	2.525	0
1449	-0.344	-0.172	1.353	0	2.353	0
1450	-0.76	-0.38	0.973	0	1.973	0
1451	-0.032	-0.016	0.957	0	1.957	0
1452	0.055	0.0275	0.9845	0	1.9845	0
1453	-0.526	-0.263	0.7215	0	1.7215	0
1454	-0.016	-0.008	0.7135	0	1.7135	0
1455	-1.404	-0.702	0.0115	0	1.0115	0
1456	0.348	0.174	0.1855	0	1.1855	0
1457	1.264	0.632	0.8175	0	1.8175	0
1458	-1.02	-0.51	0.3075	0	1.3075	0
1459	-1.176	-0.588	-0.2805	0	0.7195	0
1460	0.731	0.3655	0.085	0	1.085	0
1461	-0.279	-0.1395	-0.0545	0	0.9455	0
1462	0.88	0.44	0.3855	0	1.3855	0
1463	-0.789	-0.3945	-0.009	0	0.991	0
1464	0.812	0.406	0.397	0	1.397	0
1465	0.172	0.086	0.483	0	1.483	0
1466	-0.692	-0.346	0.137	0	1.137	0
1467	0.913	0.4565	0.5935	0	1.5935	0
1468	-0.406	-0.203	0.3905	0	1.3905	0
1469	-0.582	-0.291	0.0995	0	1.0995	0
1470	-0.5	-0.25	-0.1505	0	0.8495	0
1471	-1.105	-0.5525	-0.703	0	0.297	0
1472	-0.182	-0.091	-0.794	0	0.206	0
1473	-0.344	-0.172	-0.966	0	0.034	0
1474	0.286	0.143	-0.823	0	0.177	0
1475	0.65	0.325	-0.498	0	0.502	0
1476	-0.705	-0.3525	-0.8505	0	0.1495	0
1477	-0.39	-0.195	-1	0	-0.0455	0
1478	-0.984	-0.492	-1	0	-0.5375	0
1479	0.289	0.1445	-0.8555	0	-0.393	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1480	0.172	0.086	-0.7695	0	-0.307	0
1481	1.303	0.6515	-0.118	0	0.3445	0
1482	-0.572	-0.286	-0.404	0	0.0585	0
1483	-1.868	-0.934	-1	0	-0.8755	0
1484	-1.878	-0.939	-1	0	-1	0
1485	0.4	0.2	-0.8	0	-0.8	0
1486	-0.89	-0.445	-1	0	-1	0
1487	0.936	0.468	-0.532	0	-0.532	0
1488	-0.309	-0.1545	-0.6865	0	-0.6865	0
1489	-1.134	-0.567	-1	0	-1	0
1490	0.452	0.226	-0.774	0	-0.774	0
1491	0.039	0.0195	-0.7545	0	-0.7545	0
1492	0.682	0.341	-0.4135	0	-0.4135	0
1493	1.488	0.744	0.3305	0	0.3305	0
1494	0.159	0.0795	0.41	0	0.41	0
1495	-0.11	-0.055	0.355	0	0.355	0
1496	-0.854	-0.427	-0.072	0	-0.072	0
1497	1.378	0.689	0.617	0	0.617	0
1498	0.211	0.1055	0.7225	0	0.7225	0
1499	-0.825	-0.4125	0.31	0	0.31	0
1500	-0.023	-0.0115	0.2985	0	0.2985	0
1501	-1.797	-0.8985	-0.6	0	-0.6	0
1502	-0.309	-0.1545	-0.7545	0	-0.7545	0
1503	1.274	0.637	-0.1175	0	-0.1175	0
1504	-0.032	-0.016	-0.1335	0	-0.1335	0
1505	0.211	0.1055	-0.028	0	-0.028	0
1506	-0.289	-0.1445	-0.1725	0	-0.1725	0
1507	-0.263	-0.1315	-0.304	0	-0.304	0
1508	1.521	0.7605	0.4565	0	0.4565	0
1509	-2.693	-1	-0.5435	0	-0.5435	0
1510	0.075	0.0375	-0.506	0	-0.506	0
1511	1.348	0.674	0.168	0	0.168	0
1512	1.157	0.5785	0.7465	0	0.7465	0
1513	1.03	0.515	1.2615	0	1.2615	0
1514	0.179	0.0895	1.351	0	1.351	0
1515	0.484	0.242	1.593	0	1.593	0
1516	1.43	0.715	2	0.308	2.308	0
1517	0.445	0.2225	2	0.2225	2.5305	0
1518	-1.01	-0.505	1.495	0	2.0255	0
1519	-0.608	-0.304	1.191	0	1.7215	0
1520	-1.433	-0.7165	0.4745	0	1.005	0
1521	0.175	0.0875	0.562	0	1.0925	0
1522	1.686	0.843	1.405	0	1.9355	0
1523	-0.491	-0.2455	1.1595	0	1.69	0
1524	0.812	0.406	1.5655	0	2.096	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1525	1.901	0.9505	2	0.516	3	0.0465
1526	1.563	0.7815	2	0.7815	3	0.7815
1527	0.062	0.031	2	0.031	3	0.031
1528	1.631	0.8155	2	0.8155	3	0.8155
1529	2.492	1.246	2	1.246	3	1.246
1530	0.315	0.1575	2	0.1575	3	0.1575
1531	0.647	0.3235	2	0.3235	3	0.3235
1532	1.67	0.835	2	0.835	3	0.835
1533	-0.361	-0.1805	1.8195	0	2.8195	0
1534	-0.994	-0.497	1.3225	0	2.3225	0
1535	-0.003	-0.0015	1.321	0	2.321	0
1536	-1.992	-0.996	0.325	0	1.325	0
1537	2.84	1.42	1.745	0	2.745	0
1538	-1.537	-0.7685	0.9765	0	1.9765	0
1539	1.712	0.856	1.8325	0	2.8325	0
1540	0.062	0.031	1.8635	0	2.8635	0
1541	0.578	0.289	2	0.1525	3	0.1525
1542	-1.186	-0.593	1.407	0	2.407	0
1543	-0.039	-0.0195	1.3875	0	2.3875	0
1544	1.092	0.546	1.9335	0	2.9335	0
1545	-0.539	-0.2695	1.664	0	2.664	
1546	0.893	0.4465	2	0.1105	3	0
1547	1.443	0.7215	2	0.7215	3	0.7215
1548	-0.517	-0.2585	1.7415	0	2.7415	0
1549	-0.91	-0.455	1.2865	0	2.2865	0
1550	0.562	0.281	1.5675	0	2.5675	0
1551	-0.624	-0.312	1.2555	0	2.2555	0
1552	-1.608	-0.804	0.4515	0	1.4515	0
1553	1.488	0.744	1.1955	0	2.1955	0
1554	2.401	1.2005	2	0.396	3	0.396
1555	1.576	0.788	2	0.788	3	0.788
1556	-0.26	-0.13	1.87	0	2.87	0
1557	-1.712	-0.856	1.014	0	2.014	0
1558	0.344	0.172	1.186	0	2.186	0
1559	-0.614	-0.307	0.879	0	1.879	0
1560	-1.127	-0.5635	0.3155	0	1.3155	0
1561	0.123	0.0615	0.377	0	1.377	0
1562	-0.984	-0.492	-0.115	0	0.885	0
1563	0.065	0.0325	-0.0825	0	0.9175	0
1564	0.029	0.0145	-0.068	0	0.932	0
1565	-0.312	-0.156	-0.224	0	0.776	0
1566	-0.991	-0.4955	-0.7195	0	0.2805	0
1567	-1.127	-0.5635	-1	0	-0.283	0
1568	-1.124	-0.562	-1	0	-0.845	0
1569	-1.443	-0.7215	-1	0	-1	0

Year	PDSI (-4 to +4)	PSDI/2 (-1 to +2)	Storage=2x Surplus/ Shortfall	Storage=2x Excess Surplus	Storage=3x Surplus/ Shortfall	Storage=3x Excess Surplus
1570	0.224	0.112	-0.888	0	-0.888	0
1571	1.166	0.583	-0.305	0	-0.305	0
1572	1.313	0.6565	0.3515	0	0.3515	0
1573	-0.13	-0.065	0.2865	0	0.2865	0
1574	-0.712	-0.356	-0.0695	0	-0.0695	0
1575	-0.819	-0.4095	-0.479	0	-0.479	0
1576	2.024	1.012	0.533	0	0.533	0
1577	2.089	1.0445	1.5775	0	1.5775	0
1578	1.517	0.7585	2	0.336	2.336	0
1579	0.692	0.346	2	0.346	2.682	0
1580	-1.124	-0.562	1.438	0	2.12	0
1581	-0.845	-0.4225	1.0155	0	1.6975	0
1582	0.77	0.385	1.4005	0	2.0825	0
1583	-0.91	-0.455	0.9455	0	1.6275	0
1584	0.266	0.133	1.0785	0	1.7605	0
1585	0.777	0.3885	1.467	0	2.149	0
1586	-0.474	-0.237	1.23	0	1.912	0
1587	-2.252	-1	0.23	0	0.912	0
1588	0.617	0.3085	0.5385	0	1.2205	0
1589	1.033	0.5165	1.055	0	1.737	0
1590	3.376	1.688	2	0.743	3	0.425
1591	-0.452	-0.226	1.774	0	2.774	0
1592	-1.595	-0.7975	0.9765	0	1.9765	0
1593	0.5	0.25	1.2265	0	2.2265	0
1594	-0.718	-0.359	0.8675	0	1.8675	0
1595	-0.237	-0.1185	0.749	0	1.749	0
1596	2.931	1.4655	2	0.2145	3	0.2145
1597	1.212	0.606	2	0.606	3	0.606
1598	0.084	0.042	2	0.042	3	0.042
1599	-0.802	-0.401	1.599	0	2.599	0
1600	0.66	0.33	1.929	0	2.929	0

APPENDIX C

MISSISSIPPIAN TRIANGULAR PROJECTILE POINT DATA FROM SOUTH CAROLINA.

Courtesy Tommy Charles
South Carolina Institute of Archaeology and Anthropology
University of South Carolina

Site Number	Fos.	Mississippian Triangular Points CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
Abbeville, 38AB331*									0	104	(0.00%)	Max Hester collection
Abbeville, 38AB332*				6					6	202	(2.97%)	Wade H. Stoll collection
Aiken		106	8	180			34		328	1869	(17.55%)	Roy J. Lyons collection
Aiken, 38Ak44*		1		2					3	117	(2.56%)	D. H. Sullivan collection
Aiken, 38AK45				2					2	108	(1.85%)	Tommy Charles collection
Aiken, 38AK45*		6		1		1	1		9	252	(3.57%)	D. H. Sullivan collection
Aiken, 38Ak46*		1		3					4	220	(1.82%)	D. H. Sullivan collection
Aiken, 38AK366				2					2	92	(2.17%)	Tommy Charles collection
Allendale		168		2					170	715	(23.78%)	Eddie B. Browning collection
Allendale, 38Al7		34							34	920	(3.70%)	Tommy Charles collection
Allendale, 38Al9									0	86	(0.00%)	Tommy Charles collection
Allendale, 38Al25		43							43	318	(13.52%)	D. H. Sullivan collection
Allendale, 38Al26		1							1	17	(5.88%)	D. H. Sullivan collection
Allendale, 38Al70		5							5	102	(4.90%)	Tommy Charles collection
Allendale, 38Al81		15							15	85	(17.65%)	Tommy Charles collection
Allendale, 38Al84		10							10	168	(5.95%)	Tommy Charles collection
Allendale, 38Al86		1							1	63	(1.59%)	Tommy Charles collection
Allendale, 38Al89		2							2	38	(5.26%)	Tommy Charles collection
Allendale, 38Al116		6							6	51	(11.76%)	Tommy Charles collection
Allendale, 38Al117		53							53	416	(12.74%)	George W. Chavous collection
Allendale, eastern									0	7	(0.00%)	Tommy Charles collection
Anderson									0	18	(0.00%)	D. H. Sullivan collection
Anderson			1	4					5	339	(1.47%)	Larry Wilbanks collection
Anderson, 38An175				1					1	55	(1.82%)	Larry Wilbanks collection
Anderson, 38An176									0	19	(0.00%)	Larry Wilbanks collection
Anderson, Broadway Lake									0	11	(0.00%)	Tommy Charles collection
Anderson, Calhoun Falls				1					1	39	(2.56%)	Freddie Simmons collection
Bamberg									0	51	(0.00%)	Don & Gail Houck collection
Bamberg, 38BM31									0	12	(0.00%)	D. H. Sullivan collection
Barnwell		5							5	21	(23.81%)	Harold Keel collection
Barnwell, 38Br6									0	9	(0.00%)	Tommy Charles collection
Barnwell, 38Br28		1							1	14	(7.14%)	D. H. Sullivan collection
Barnwell, 38Br114		1							1	18	(5.56%)	Tommy Charles collection
Barnwell, 38Br115									0	5	(0.00%)	Tommy Charles collection
Barnwell, 38Br119									0	5	(0.00%)	Tommy Charles collection
Barnwell, 38Br512		5							5	73	(6.85%)	Harold Keel collection
Barnwell, 38Br514				1					1	57	(1.75%)	Harold Keel collection
Barnwell, Buck Creek		6							6	27	(22.22%)	Harold Keel collection
Barnwell, Kline area									0	218	(0.00%)	William Jenkins collection
Beaufort		10							10	89	(11.24%)	Steve Paterson collection
Beaufort, 38Bu9									0	34	(0.00%)	Richard Moody collection

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
		Mississippian Triangular Points										
Beaufort, 38Bu9		1							1	25	(4.00%)	Tommy Charles collection
Beaufort, 38Bu9									0	46	(0.00%)	Freddie Bazemore collection
Beaufort, 38Bu179		9		1					10	123	(8.13%)	Earl Gibson collection
Beaufort, 38Bu236		1							1	53	(1.89%)	Charles B. Haley collection
Beaufort, 38Bu237		3							3	93	(3.23%)	Colden Batty, Jr. collection
Beaufort, 38Bu237		6							6	35	(17.14%)	Richard Moody collection
Beaufort, 38Bu262		5							5	64	(7.81%)	Richard Moody collection
Beaufort, 38Bu264									0	19	(0.00%)	Richard Moody collection
Beaufort, 38Bu330		2							2	11	(18.18%)	Richard Moody collection
Beaufort, 38Bu331									0	10	(0.00%)	Richard Moody collection
Beaufort, 38Bu332		4							4	13	(30.77%)	Richard Moody collection
Beaufort, 38Bu333									0	30	(0.00%)	Richard Moody collection
Beaufort, 38Bu335									0	4	(0.00%)	Richard Moody collection
Beaufort, 38Bu336									0	5	(0.00%)	Mr. & Mrs. Marion D. Cooke collection
Beaufort, Dafuskie Island									0	3	(0.00%)	Mike Taylor collection
Beaufort, Lobeco area									0	42	(0.00%)	Earl Gibson collection
Berkeley	1				10				11	85	(12.94%)	Ruth Kinnally collection
Berkeley		1							1	43	(2.33%)	Harold Gunn collection
Berkeley									0	46	(0.00%)	J. E. Mitchum collection
Berkeley		1		1	6			1	9	65	(13.85%)	Robert E. Lewis, Jr. collection
Berkeley									0	4	(0.00%)	Earl Gibson collection
Berkeley, Lake Moultire				3	6		2		11	526	(2.09%)	Richerd Porcher collection
Berkeley, St. Stephens					1				1	12	(8.33%)	Tommy Charles collection
Berkeley-Orangeburg line			1	7					8	215	(3.72%)	Steve Singletary collection
Calhoun		2		5					7	64	(10.94%)	Francis Corbett collection
Calhoun, 38Cl17		4		10			1		15	123	(12.20%)	Tommy Charles collection
Calhoun, 38Cl30									0	62	(0.00%)	Tommy Charles collection
Calhoun, Beaver Creek		2							2	31	(6.45%)	Tommy Charles collection
Charleston		2	3		3		2		9	270	(3.33%)	Anne King-Gregorie collection
Charleston									0	78	(0.00%)	Sal and Cindy Buscemi collection
Cherokee				2			2		4	514	(0.78%)	Joseph H. Hall collection
Chester				12			15		27	763	(3.54%)	Robert Shannon collection
Chester				25			100		125	26962	(0.46%)	Chester County Historical Museum (figures estimates)
Chesterfield							3		3	490	(0.61%)	Johnny Hickey collection
Chesterfield			1	16		1	9		27	447	(6.04%)	Robert McLeod collection
Chesterfield				1			1		2	615	(0.33%)	Clyde S. watson, Sr. collection
Chesterfield, 38Ct122									0	9	(0.00%)	Tommy Charles collection
Chesterfield, 38CT167				1			1		2	97	(2.06%)	D. J. Baker collection
Chesterfield, SCMC # 54									0	63	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #1				2			15		17	157	(10.83%)	South Carolina Museum Commission collection
Chesterfield, SCMC #5				2			17		19	341	(5.57%)	South Carolina Museum Commission collection

Site Number	Fos.	Mississippian Triangular Points CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
Chesterfield, SCMC #5a									0	46	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #5b									0	87	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #9									0	5	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #26									0	9	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #28									0	21	(0.00%)	South Carolina Museum Commission collection
Chesterfield, SCMC #32			1				6		7	213	(3.29%)	South Carolina Museum Commission collection
Chesterfield, Thompsons Cr.									0	90	(0.00%)	Charles B. Haley collection
Clarendon	1	1		1			1		4	96	(4.17%)	Gene Wells collection
Clarendon, 38Cl54		1		10	1	1	4	2	19	323	(5.88%)	Lois Corbett collection, "other" are orthoquartzite/chert
Clarendon, 38Cl78					1				1	37	(2.70%)	Raymond F. Koestner collection
Clarendon, SCMC #10		1			1		1		3	4	(75.00%)	South Carolina Museum Commission collection
Clarendon, SCMC #11-11A							1		1	21	(4.76%)	South Carolina Museum Commission collection
Colleton		4						2	6	137	(4.38%)	Gary Koger collection
Colleton		24							24	166	(14.46%)	Bobby Wilkinson collection
Colleton		12		1					13	128	(10.16%)	A. A. Sonny Hiott collection
Colleton, 38Cn52		1							1	14	(7.14%)	A. A. Sonny Hiott collection
Colleton, 38Cn96									0	81	(0.00%)	A. A. Sonny Hiott collection
Colleton, 38Cn97		1							1	5	(20.00%)	A. A. Sonny Hiott collection
Colleton, 38Cn98									0	33	(0.00%)	A. A. Sonny Hiott collection
Colleton, 38Cn102									0	10	(0.00%)	A. A. Sonny Hiott collection
Colleton, 38Cn104									0	7	(0.00%)	A. A. Sonny Hiott collection
Darlington							7		7	14	(50.00%)	Ken Cabe collection
Darlington, SCMC #3									0	12	(0.00%)	South Carolina Museum Commission collection
Dillon	11			5	1		15		32	432	(7.41%)	Earl Gleason collection
Dillon, 38Dn14				1			6		7	116	(6.03%)	Marion McCallum collection
Dillon, 38Dn15							2		2	143	(1.40%)	Harold N. Cousar, Jr. collection
Dorcherster		2							2	40	(5.00%)	George Knight collection
Dorchester, 38Dr70		3							3	120	(2.50%)	Frank & Haskel Fralix collection
Dorchester, 38Dr133									0	49	(0.00%)	Kathryn Whetsell & Janet Herndon collection
Dorchester, 38Dr134	1	1					1		3	42	(7.14%)	Mrs. Thomas H. Mims collection
Dorchester, N 4-Hole Swamp		6		6	2		2	21	37	185	(20.00%)	James A. Way collection; "other" is siltstone
Edgefield, 38Ed2				5			1		6	58	(10.34%)	D. H. Sullivan collection
Fairfield				89			8		97	2721	(3.56%)	Joel Weed collection
Fairfield				4					4	310	(1.29%)	Anon. collection, Winnsboro, S.C.
Fairfield, 38Fa131									0	79	(0.00%)	Keith & Marilyne Shannon collection
Florence		1		11		6	53		71	946	(7.51%)	John C. Jeffords collection
Florence, lower PeeDee									0	31	(0.00%)	Tommy Charles collection
Georgetown									0	7	(0.00%)	Tommy Charles collection
Georgetown									0	19	(0.00%)	Mr. & Mrs. Fairy R. Douglas collection
Greenville		1	11	35			1		48	395	(12.15%)	Duard Hart, Jr. collection
Greenville, 38Gr1			11	11					22	142	(15.49%)	Mike Robertson collection

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
		Mississippian Triangular Points										
Greenville, 38Gr10				12					12	136	(8.82%)	D. H. Sullivan collection
Greenville, 38Gr17				5					5	36	(13.89%)	D. H. Sullivan collection
Greenville, 38Gr26			4	168	10		1		183	584	(31.34%)	D. H. Sullivan collection
Greenville, 38Gr99			17	7			4	1	29	92	(31.52%)	Richard Bishop collection, "other" is unid. chert
Greenville, 38Gr100-102			5	7			7		19	203	(9.36%)	Richard Bishop collection
Greenville, 38Gr103			3	10			3		16	38	(42.11%)	Richard Bishop collection
Greenville, 38Gr104									0	14	(0.00%)	Richard Bishop collection
Greenville, 38Gr105			1	1					2	38	(5.26%)	Richard Bishop collection
Greenville, 38Gr106			3	2					5	19	(26.32%)	Richard Bishop collection
Greenville, 38Gr107									0	58	(0.00%)	Richard Bishop collection, "other" is unid. chert
Greenville, 38Gr126				1					1	15	(6.67%)	John McCarson collection
Greenville, Paris Mt. area			9	6			2	1	18	383	(4.70%)	Gerald Vaughn collection, "other" is greenstone
Greenwood				1					1	28	(3.57%)	Tommy Charles collection
Greenwood, 38Gn8				1					1	95	(1.05%)	D. H. Sullivan collection
Greenwood, 38Gn31				1					1	25	(4.00%)	D. H. Sullivan collection
Greenwood, 38Gn36				1					1	137	(0.73%)	D. H. Sullivan collection
Greenwood, 38Gn42									0	29	(0.00%)	Marlene & Everette Butler collection
Greenwood, 38Gn344				1					1	124	(0.81%)	Marlene & Everette Butler collection
Hampton									0	6	(0.00%)	Tommy Charles collection
Hampton		1186							1186	6029	(19.67%)	John G. Causey collection
Hampton									0	15	(0.00%)	Keith and Marilyne Shannon collection
Hampton		38							38	879	(4.32%)	Legrande & Charlene Smith collection
Hampton, 38Ha1		9							9	191	(4.71%)	Tommy Charles collection
Hampton, 38Ha9		3							3	57	(5.26%)	Tommy Charles collection
Hampton, 38Ha11									0	5	(0.00%)	Tommy Charles collection
Hampton, 38Ha13		8							8	182	(4.40%)	Tommy Charles collection
Hampton, 38Ha15		1							1	127	(0.79%)	Tommy Charles collection
Hampton, 38Ha19									0	54	(0.00%)	Tommy Charles collection
Hampton, 38Ha22									0	62	(0.00%)	Keith and Marilyne Shannon collection
Hampton, 38Ha27		1							1	17	(5.88%)	D. H. Sullivan collection
Hampton, 38Ha29									0	10	(0.00%)	Tommy Charles collection
Hampton, 38Ha47		3							3	307	(0.98%)	Tommy Charles collection
Hampton, 38Ha51		13							13	129	(10.08%)	Tommy Charles collection
Hampton, 38Ha52		12							12	114	(10.53%)	Tommy Charles collection
Hampton, 38Ha58		2							2	90	(2.22%)	Tommy Charles collection
Hampton, 38Ha60		2							2	39	(5.13%)	Tommy Charles collection
Hampton, 38Ha71									0	1	(0.00%)	Tommy Charles collection
Hampton, 38Ha72		19							19	214	(8.88%)	Aimar & Herbert Frampton collection
Hampton, 38Ha75		1							1	22	(4.55%)	Tommy Charles collection
Hampton, 38Ha78									0	31	(0.00%)	Tommy Charles collection
Hampton, 38Ha80									0	8	(0.00%)	Tommy Charles collection

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
		Mississippian Triangular Points										
Hampton, 38Ha81		20							20	247	(8.10%)	Tommy Charles collection
Hampton, 38Ha86									0	2	(0.00%)	Tommy Charles collection
Hampton, Cope Creek									0	5	(0.00%)	Tommy Charles collection
Hampton, Cummings area		3							3	80	(3.75%)	Earl Gibson collection
Hampton, Whippy Cr/601									0	5	(0.00%)	Tommy Charles collection
Horry				8	1		9	3	21	287	(7.32%)	Jack Burgess collection; "other" is oq/chert
Horry				4			3	2	9	35	(25.71%)	Gregg Burns collection, "other" is oq/chert
Horry									0	5	(0.00%)	Ken Cabe collection
Horry, 38Hr132				1			1		2	113	(1.77%)	Francis Malinow collection
Jasper, 38Ja55		3							3	33	(9.09%)	Tommy Charles collection
Jasper, Grays Landing		5							5	32	(15.63%)	Mike Taylor collection
Kershaw			1	147			244		392	6405	(6.12%)	Frank & Andee Steen collection
Kershaw, 38Ke86				3					3	34	(8.82%)	Earl Spangler collection
Kershaw, SCMC#9A-C,4A									0	11	(0.00%)	South Carolina Museum Commission collection
Kershaw, SCMC#12,12A		2							2	8	(25.00%)	South Carolina Museum Commission collection
Kershaw, SCMC#19,19A									0	2	(0.00%)	South Carolina Museum Commission collection
Kershaw, SCMC#24									0	21	(0.00%)	South Carolina Museum Commission collection
Lancaster, 38La107							1		1	2	(50.00%)	Tommy Charles collection
Lancaster, 38La108									0	3	(0.00%)	Tommy Charles collection
Lancaster, 38La112				8			6		14	401	(3.49%)	Iva Mintz collection
Laurens			1	8					9	595	(1.51%)	D. H. Sullivan collection
Laurens, 38Lu5		1	7	251			6		265	1368	(19.37%)	D. H. Sullivan collection
Laurens, 38Lu8				4					4	228	(1.75%)	D. H. Sullivan collection
Laurens, 9Lu9				5					5	158	(3.16%)	D. H. Sullivan collection
Laurens, 38Lu11									0	8	(0.00%)	D. H. Sullivan collection
Laurens, Rabon Creek				5			1		6	150	(4.00%)	D. H. Sullivan collection
Laurens, Reedy River				19					19	830	(2.29%)	D. H. Sullivan collection
Lee				4					4	75	(5.33%)	Leroy Atkinson collection
Lee, 38Le89									0	61	(0.00%)	John O. Kelly collection
Lee, 38Le90		1		10			1		12	214	(5.61%)	James Latimer
Lexington		2		1					3	94	(3.19%)	D. H. Sullivan collection
Lexington, 38Lx1									0	44	(0.00%)	Tommy Charles colection
Lexington, 38Lx2									0	19	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx18		2		6					8	120	(6.67%)	Tommy Charles colection
Lexington, 38Lx19		1		6					6	528	(1.14%)	Tommy Charles colection
Lexington, 38Lx38		1		14					15	92	(16.30%)	D. H. Sullivan collection
Lexington, 38Lx39		2		5					6	356	(1.69%)	D. H. Sullivan collection
Lexington, 38Lx45		5		13					18	235	(7.66%)	D. H. Sullivan collection
Lexington, 38Lx44									0	24	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx46									0	3	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx47				1					1	34	(2.94%)	D. H. Sullivan collection

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
		Mississippian Triangular Points										
Lexington, 38Lx48									0	13	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx50		10	4	54		1	12		81	2398	(3.38%)	Tommy Charles colection
Lexington, 38Lx55				1					1	7	(14.29%)	D. H. Sullivan collection
Lexington, 38Lx72									0	51	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx73		1		1					2	50	(4.00%)	Tommy Charles colection
Lexington, 38Lx74				2					2	113	(1.77%)	Tommy Charles colection
Lexington, 38Lx76		1		6			3		10	155	(6.45%)	Tommy Charles colection
Lexington, 38Lx119									0	149	(0.00%)	William T. Rawl
Lexington, 38Lx196									0	16	(0.00%)	Tommy Charles colection
Lexington, 38Lx198									0	84	(0.00%)	D. H. Sullivan collection
Lexington, 38Lx211				1					1	34	(2.94%)	D. H. Sullivan collection
Lexington, 38Lx234									0	17	(0.00%)	Horace E. Harmon collection
Lexington, White Plains		2					2		4	314	(1.27%)	D. H. Sullivan collection
Marlboro				1			4		5	126	(3.97%)	Elizabeth T. Briggs
Marlboro, SCMC#2		2	1	4			103		110	768	(14.32%)	South Carolina Museum Commission collection
Marlboro, 38Ml49							2		2	50	(4.00%)	Sammy Hill, Jr. collection
Marboro, 38Ml50							1		1	85	(1.18%)	Sammy Hill, Jr. collection
Marboro, 38Ml51							18		18	72	(25.00%)	Sammy Hill, Jr. collection
McCormick, 38Mc4									0	105	(0.00%)	D. H. Sullivan collection
Newberry		4	14	45			42		105	1593	(6.59%)	R. M. Duckett, Jr. collection
Newberry									0	52	(0.00%)	D. H. Sullivan collection
Newberry, 38Ne4				4					4	64	(6.25%)	Tommy Charles collection
Newberry, 38Ne4									0	45	(0.00%)	D. H. Sullivan collection
Newberry, 38Ne26		1	1	24					26	849	(3.06%)	Tommy Charles collection
Newberry, 38Ne24				1					1	265	(0.38%)	Tommy Charles collection
Newberry, 38Ne24									0	146	(0.00%)	D. H. Sullivan collection
Newberry, 38Ne25									0	8	(0.00%)	Tommy Charles collection
Newberry, 38Ne25				1			1		2	84	(2.38%)	D. H. Sullivan collection
Newberry, 38Ne26									0	6	(0.00%)	D. H. Sullivan collection
Newberry, 38Ne45									0	100	(0.00%)	Tommy Charles collection
Orangeburg, 38Or43		1							1	158	(0.63%)	Tommy Charles collection
Orangeburg, 38Or43				1					1	38	(2.63%)	D. H. Sullivan collection
Orangeburg, 38Or83		1							1	6	(16.67%)	Tommy Charles collection
Pickens			5						5	96	(5.21%)	Mike Hood collection
Pickens, Ft. Prince George			1	1					2	321	(0.62%)	Ernst Steele collection
Richland		4	2	15			35		56	775	(7.23%)	William J. Floyd collection
Richland									0	29	(0.00%)	Tommy Charles collection
Richland, 38Rd10									0	137	(0.00%)	Tommy Charles collection
Richland, 38Rd10				4					4	83	(4.82%)	Keith and Marilyne Shannon collection
Richland, 38Rd18				5					5	379	(1.32%)	Tommy Charles collection
Richland, 38Rd86				2					2	22	(9.09%)	Tommy Charles collection

Site Number	Fos.	CPC	R&V	Qtz	Oqtz	Ar	Ry	Other	Total Miss. pts	Total Points	Percent Miss.	Reference
	Mississippian Triangular Points											
Richland, 38Rd151									0	9	(0.00%)	Keith and Marilyne Shannon collection
Richland, 38Rd152		1							1	41	(2.44%)	Keith and Marilyne Shannon collection
Richland, 38Rd160		2		10					12	115	(10.43%)	Keith and Marilyne Shannon collection
Richland, 38Rd163		1		2			1		4	14	(28.57%)	Keith and Marilyne Shannon collection
Richland, 38Rd167		1		6					7	72	(9.72%)	Tommy Charles collection
Richland, 38Rd205									0	5	(0.00%)	Tommy Charles collection
Richland, Congaree River		1							1	15	(6.67%)	Earl Spangler collection
Richland, Cong. Swamp NP		1							1	22	(4.55%)	Tommy Charles collection
Saluda									0	44	(0.00%)	Ken Cabe collection
Spartanburg, 38Sp5									0	36	(0.00%)	D. H. Sullivan collection
Spartanburg, 38Sp46									0	363	(0.00%)	Ruth M. Lamb collection
Spartanburg, 38Sp47									0	2	(0.00%)	Ruth M. Lamb collection
Spartanburg, 38Sp48									0	12	(0.00%)	Ruth M. Lamb collection
Spartanburg, 38Sp49									0	7	(0.00%)	Richard Bishop collection
Spartanburg, Boiling Springs									0	57	(0.00%)	Carl H. May collection
Spartanburg, Campobello									0	255	(0.00%)	Ruth M. Lamb collection
Spartanburg, Glen Springs									0	15	(0.00%)	Carl H. May collection
Spartanburg, Landrum			1	2					3	418	(0.72%)	Tony, Austin, & Larry Hyder collection
Spartanburg, Lawsons Fork									0	55	(0.00%)	Carl H. May collection
Sumter		1		7			11		18	212	(8.49%)	Mr. & Mrs. T. M. Dabbs collection
Union							2		2	202	(0.99%)	Henry Turner collection
Union			1	3			1		5	172	(2.91%)	Walt Garner collection
Union				5			1		6	724	(0.83%)	William T. Abee collection
Union									0	19	(0.00%)	Tommy Charles collection
Union, 38Un4			1						1	229	(0.44%)	Tommy Charles collection
Union, 38Un17									0	60	(0.00%)	D. H. Sullivan collection
Union, 38Un190				2			1		3	56	(5.36%)	Jim D. Fowler collection
York				4			17		21	721	(2.91%)	John R. Hart collection
York									0	471	(0.00%)	Robert McIntosh collection
	14	1963	119	1433	43	10	858	33	4469	85012	(5.26%)	

fos.= Fossiliferous chert
CPC= Coastal Plain chert
Qtz= Quartz
Oqtz= Orthoquartzite
ar= Argillite
Ry= Rhyolite
Other= Other material

APPENDIX D

SITE-SPECIFIC LOCATIONAL AND ARTIFACTUAL DATA.

Key for Artifact Tables

Sites with Missisippian Components in the Richard B. Russell Reservoir

Sites with Missisippian Components in the Oglethorpe County Clearcut Tracts

Sites with Missisippian Components on the Savannah River Site

Sites with Missisippian Components in the Sumter National Forest Greenwood County Survey Tracts

Sites with Missisippian Components at the University of Georgia Laboratory of Archaeology

Sites with Missisippian Components in Ferguson's 1971 Coastal Plain Mississippian Survey

Sites with Missisippian Components in the Jasper County Geoarchaeological Project Survey Area

KEY FOR ARTIFACT TABLES

The tables that follow document the presence of Mississippian artifacts at sites in major project localities examined during the present study. This information typically includes the following for each site: (1) state site number; (2) UTM coordinates; (3) Mississippian phases/periods represented in the collection; (4) count or presence/absence data on the Mississippian ceramics present in the collection by surface finish, design element, and rim treatment; and (5) count and raw material data on triangular projectile points. References to the publications where the site data is presented in detail are presented where these are available.

Abbreviations employed in the tables that follow are listed below.

SFT	Stallings Fiber Tempered	GRIT	Grit Tempered
TC	Thom's Creek	< 1/2"	Unidentiable < 1/2" in size
DUN	Dunlap	DAUB	Daub fragments
DPT	Deptford	AMOR	Amorphous ceramic object
CTV	Cartersville	Ttrpod	Tetrapod
CON	Connestee	Pipe	Pipe fragments
SC	Swift Creek	Meta	Metavolcanic
NAP	Napier	CPC	Coastal Plain chert
WS	Woodstock	R&V	Ridge & Valley chert
UNK	Unknown	Total ppts	Total projectile points
ET	Etowah	P/A ppts	Presence/Absence of points
SAV	Savannah	P/A cer	Presence/Absence of ceramics
EL	Early Lamar	Unk. Miss	Unknown Mississippian Component
PIS	Pisgah	Early Miss.	Early Mississippian Component
LL	Late Lamar	Middle Miss.	Middle Mississippian Component
CERAM	Unknown Ceramic Series	Late Miss.	Late Mississippian Component
Punct.	Punctated finish	Pied. chert	Piedmont chert
BUR	Burnished	Total cer	Total number of ceramic artifacts
MiCk	Mississippian Check Stamped	>18 tri	Triangular projectile point >18 mm in size
DISKS	Pottery discs	≤18 tri	Triangular projectile point ≤18 mm in size
COB	Corncob impressed	Unid. Woodland	Unidentified Woodland Component
FAB	Fabric impressed	ST	Stallings Component
CORD	Cordmarked	TC	Thom's Creek Component
WCkS	Woodland Check Stamped	R/Diag	Refuge Component, id based on dentate stamping
SS	Simple Stamped	R/SS	Refuge Component, id based on simple stamping
INC	Incised	Dept	Deptford Component
PUN	Punctated	ELW	Early Late Woodland Component
Rect CS	Rectilinear Complicated Stamped	LLW	Late Late Woodland Component
Curv CS	Curvilinear Complicated Stamped	S II	Savannah II Component
PI	Pinched	S III	Savannah III Component
No	Notched	Irene	Irene Component
Pu	Punctated	X Cord	Cross cordmarked
Pl	Plain	par. cord	Parallel cordmarked
Ro	Rosettes	Rect. Incised ≤2	Rectilinear Incised lines ≤ 2mm wide
Lu	Lug	Rect. Incised >2	Rectilinear Incised lines ≤ 2mm wide
FST	Fine Sand Tempered	Curv. Incised ≤2	Curvilinear Incised lines ≤ 2mm wide
MST	Medium Sand Tempered	Curv. Incised >2	Curvilinear Incised lines ≤ 2mm wide

SURFACE FINISH DESIGN MOTIFS

Swift Creek series		
	1	snowshoes
	2	concentric circles with cross-in-circle
	3	concentric circles w/rectilinear design
	4	spirals
	5	concentric loops/"owl eye"
Napier series		
	6	zig-zag multiline strands w/block filler
	7	multiline strands crossing over each other, w/block filler
	8	combination curvilinear/rectilinear multiline strands
Woodstock series		
	9	barred oval (curvilinear designs)
	10	barred rectangle/diamond (rectilinear designs)
Etowah series		
	11	Nested diamonds - one bisecting line
	12	Nested diamonds - 2 bisecting lines
	13	Nested diamonds - two bar
	14	Nested diamonds - three bar
	15	Nested diamonds - 1 horizontal, 1 vertical bisector
	16	Nested diamonds - two bar cross
	17	Nested diamonds - 3 bar horizontal, 2 bar vertical bisector
Savannah series		
	18	Concentric Circles- bulls eye
	19	Concentric Circles- hollow center
	20	Concentric Circles- one bisecting line
	21	Concentric Circles- 1 horizontal, 1 vertical bisector
	22	Concentric Circles- two bar cross
	23	Figure 8
	24	Keyhole
	25	Figure 9/Nested P's
	26	Interlocking circles
Irene series		
	27	Filfot Cross
	28	Filfot Scroll
	29	Line block
	30	Line block/nested squares
Lamar series		
	31	Nested rectangles/frets w/cross
	32	Herring bone
	33	Herring bone, bisected
	34	Nested T
	35	Arc-angle
	36	Nested squares
Pisgah series		
	37	Ladder
Irene/Lamar series		
	38	Brackets and circles
	39	Scrolls
	40	Brackets and ovals
	41	Line-filled triangles
	42	Nested triangles
	43	Curvilinear Incised <2 mm
	44	Curvilinear Incised >2 mm
	45	Curvilinear/rectilinear Incised
	46	Rectilinear Incised <2 mm
	47	Rectilinear Incised >2mm
Other Ceramics (Protohistoric/Historic?)		
	48	Brushed/Incised <1mm
	49	Shell-tempered Plain
	50	Shell-tempered Brushed
	51	Shell-tempered Cordmarked
	52	Temperless? Plain
	53	Complicated stamped/Check stamped

Designs # 1 -42 are illustrated in Figures 76 and 77.

RIM TREATMENT

No folds or strips		
	1	No decoration
	2	Cane Punctations
	3	Rosettes
	4	Node
	5	Lug
	6	Incised (>2mm)
	7	Incised (<2mm)
Rim fold		
	8	No decoration
	9	Cane Punctations
	10	Rosettes
	11	Node
	12	Lug
	13	Incised (>2mm)
	14	Incised (<2mm)
	15	Notched (>2mm)
	16	Notched
	17	Pinched at bottom of strip
	18	Punctated at Bottom of Strip
	19	Notched at Bottom of Strip
Appliqued Rim Strip		
	20	No decoration
	21	Cane Punctations
	22	Rosettes
	23	Node
	24	Lug
	25	Incised (>2mm)
	26	Incised (<2mm)
	27	Notched (>2mm)
	28	Notched
	29	Segmented
	30	Pinched

Sites with Mississippian Components in the Richard B. Russell Reservoir

SITE NUMBER	UTM NORTHING	UTM EASTING	SFT	TC	WOODLAND DUN	DPT	CTV	CON	SC	NAP	WS	MISSISSIPPIAN UNK	ET	SAV	EL	PIS	UNK	L.L.	Unk. CERAM	Fiber Plain	Fiber Punct	SPECIFIC FINISHES BUR	MICk	DISKS	COB	FAB
38AB009	3770625	349650													1				1							
38AB010	3770300	349975										1					1									
38AB011	3770590	348980																								
38AB012	3772600	348900			1	1											1									1
38AB013	3776725	349850													1							4		1		
38AB017	3773725	348775															1							1		
38AB022	3781850	341500		1	1		1							1	1							4				8
38AB024	3783650	343650															1									
38AB026	3786800	350100															1					1				
38AB034	3773700	351400				1								1	1			1				1		2		
38AB036	3791370	350510															1									
38AB053																	1									
38AB077	3777550	346150			1												1									1
38AB081	3775850	347650															1									
38AB091	3773725	349700	1		1	1	1							1	1					7	39	34			1	2
38AB101	3773050	348900													1											
38AB114	3779550	349650																								
38AB125	3771850	348350													1							1				
38AB132	3772825	350450										1					1									
38AB160	3778200	349250															1									
38AB170	3776500	346300	1		1							1		1	1				1	1			1	1		3
38AB175	3774600	349600				1									1									1		
38AB185	3783400	350100															1									
38AB218	3770600	349550															1									
38AB221	3779350	344450															1									
38AB239	3777700	347050																	1							
38AB266	3785450	340725			1	1								1	1		1								2	8
38AB277	3785650	349850										1			1											
38AB278	3785450	349950			1							1					1									4
38AB282	3773350	349900															1									
38AB288	3776900	346075	1		1	1	1								1			1		46	56	23				42
38AB290																	1									
38AB302															1										1	
38AB303	3778800	343500			1	1									1											4
38AB304	3781000	341510															1		1			1				
38AB305	3782820	340500				1											1									
38AB306	3785520	340310			1	1			1	1			1	1	1											30
38AB387					1								1		1											9
38AN005	3786725	339525																								
38AN006	3789380	339740				1									1											

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	Woodland finishes			INC	PUN	Miss	DIAG. COMP STAMP					Rect	Curv	Unid	FOLDED			NO FOLD						PLAIN				OTHER	
	CORD	WCKS	SS			CORD	SC	NAP	WS	ET	SAV	CS	CS	CS	Pl	Nb	Pu	Pl	Pu	Ro	Nb	Lu	Pl	UNID	FST	MST	GRIT	<1/2"	DAUB
38AB009																	1	1						2	9	5	1	2	
38AB010	1												2	1										15	26	3	4		
38AB011																													
38AB012			2									1	5											7	13	14	4		
38AB013				1									2				1							3	62	8	2		
38AB017																										1			
38AB022	3	5	5	1	1									5		1			1	1				116		63			
38AB024													1	1											1				
38AB026																									1	1	2		
38AB034			2	1								3	2	7			3				1			4	22	27	65	21	
38AB036													1													1	1		
38AB053													1																
38AB077													1											1	5	8			
38AB081												1													1			1	
38AB091		19	316		1							12	11	18										978	2	396		3	2
38AB101																					1					14			
38AB114																													
38AB125		2		1									3		1									2	11	13		1	1
38AB132			3									3	3											4	20	3			
38AB160																								2	3				
38AB170	1			4								2	6	2					1		1			49	87	14		3	
38AB175			1		1							2	6												46	15	1	11	
38AB185			2										4											11	23	1			
38AB218												2												1	3	2			
38AB221													1																
38AB239																												1	
38AB266			2								3	1	15	4				1	1					39	18	19	6	5	
38AB277			1												2				1					6	4	5		1	
38AB278	2												2											2	10	4		2	
38AB282														1															
38AB288	3	4	23	2	2		1					7	11	21	6	5	1							619	25	245	4		
38AB290													1																
38AB302													1							1						9			
38AB303	2	3		1								7	4	1				1						87	82	16			
38AB304																										2			
38AB305	1	2											2											17	37	11			
38AB306	2	2	16	1				5				31	13	4			1							345	166	4			
38AB387				3						4	1								10					29		315			
38AN005																													
38AN006			1		1	1						2	1											1	1	4		2	

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	AMOR	Ttr pod	Pipe	TOTALS BODY	RIMS	PLAIN	DEC	GRAND TOTAL	Mississippian Triangular Quartz	Meta	CPC	R&V	Total ppts	P/A ppts	P/A cer	Unk. Miss	Early Miss.	Middle Miss.	Late Miss.	P/A Miss. Component
38AB009	1			15	2	14	4	22					0		1	0	0	1	0	1
38AB010				14	3	13	4	52					0		1	1	0	0	0	1
38AB011								0	1				1	1	0	1	0	0	0	1
38AB012				44	2	31	13	47	2				2	1	1	1	0	0	0	1
38AB013			1	23	3	24	2	85	1				1	1	1	0	0	1	0	1
38AB017				1		1	2	2					0		1	1	0	0	0	1
38AB022								214	1	1			2	1	1	0	1	1	0	1
38AB024				3		1	2	3					0		1	1	0	0	0	1
38AB026				5		5		5					0		1	1	0	0	0	1
38AB034	1			131	19	128	23	162					0		1	0	1	1	1	1
38AB036				3		2	1	3					0		1	1	0	0	0	1
38AB053								1					0		1	1	0	0	0	1
38AB077				16	1	14	3	16					0		1	1	0	0	0	1
38AB081				2		1	1	3	1				1	1	1	1	0	0	0	1
38AB091	1	4						1846					0		1	0	1	1	0	1
38AB101								15					0		1	0	0	1	0	1
38AB114								0	1				1	1	0	1	0	0	0	1
38AB125				5	1	6		36	1				1	1	1	0	0	1	0	1
38AB132				35		23	12	36					0		1	1	0	0	0	1
38AB160								5					0		1	1	0	0	0	1
38AB170	2			21		17	3	178	2				2	1	1	0	1	1	0	1
38AB175	5			75	8	73	10	89					0		1	0	0	1	0	1
38AB185								41					0		1	1	0	0	0	1
38AB218				8		5	3	8					0		1	1	0	0	0	1
38AB221				1			1	1					0		1	1	0	0	0	1
38AB239								1	1				1	1	0	1	0	0	0	1
38AB266	1			102	3	45	46	125					0		1	1	1	1	0	1
38AB277				14	4	10	4	20					0		1	0	0	1	0	1
38AB278				24		14	10	26					0		1	1	0	0	0	1
38AB282				1			1	1					0		1	1	0	0	0	1
38AB288				64	5	45	24	1146	1				1	1	1	0	0	1	1	1
38AB290				1			1	1					0		1	1	0	0	0	1
38AB302								12					0		1	0	0	1	0	1
38AB303								208					0		1	0	0	1	0	1
38AB304								3					0		1	1	0	0	0	1
38AB305								70					0		1	1	0	0	0	1
38AB306								620					0		1	0	1	1	0	1
38AB387								371	1				1	1	1	0	1	1	0	1
38AN005								0		1			1	1	0	1	0	0	0	1
38AN006				7				14					0		1	0	0	1	0	1

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	UTM NORTHING	UTM EASTING	SFT	TC	WOODLAND			CON	SC	NAP	WS	MISSISSIPPIAN				PIS	UNK	L.L.	Unk. CERAM	Fiber Plain	Fiber Punct	SPECIFIC FINISHES				FAB
					DLN	DPT	CTV					UNK	ET	SAV	E.L.							BUR	MICK	DISKS	COB	
38AN008	3797400	336100			1		1		1	1	1			1	1							5		4		2
38AN029	3797850	335700			1	1	1		1								1									213
38AN035																	1									
38AN126	3810475	334550			1	1	1	1	1				1		1	1	1					2			5	65
38AN131	3798050	335600				1											1									
38AN139	3791875	339375															1									
38AN140	3791425	339450			1		1								1											9
9EB009												1					1									
9EB010	3793950	336912					1								1							2				
9EB011					1	1	1						1	1								1				2
9EB013	3777480	344900					1			1				1	1							1		1		
9EB015					1	1	1					1			1		1							1		6
9EB016	3777924	344720								1		1					1					2				1
9EB017	3793780	337960			1	1	1		1		1						1								75	9
9EB018	3793520	338300					1										1									
9EB019	3774940	338570	1		1	1	1	1									1		1	1	1					14
9EB021	3771440	347290		1	1	1	1								1											6
9EB056	3773650	339900																								
9EB062	3793100	338700																								
9EB072	3777852	339732															1									
9EB076	3774700	346500	1		1	1	1					1		1	1	1	1			1	4	33		9	1	5
9EB077						1											1									
9EB079	3773220	348020									1			1	1		1							2		
9EB080	3779576	328240											1	1	1											
9EB081	3779336	328132				1							1		1								1			
9EB082	3773340	347530												1	1											
9EB083	3773200	348100			1		1		1			1			1		1							5		3
9EB084	3781120	327372															1									
9EB085	3772050	346050			1				1				1	1								1702	1280	1	412	1
9EB086	3775300	336800							1					1								15	5	1	2	
9EB088	3783750	339300															1						1			
9EB089	3773700	341100					1					1					1									
9EB090	3783580	339050			1	1	1								1		1					1		1		7
9EB091	3779600	341700	1	1	1	1	1	1	1	1	1		1	1	1					10	28	7563	14	36	594	1169
9EB092	3772400	346500				1					1				1			1				5	1	1		
9EB093	3775300	336800										1					1					1		3		
9EB094	3777456	345240															1					1				
9EB120																										
9EB143																	1									
9EB162																	1									

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	Woodland finishes CORD	WCKS	SS	INC	PUN	Miss CORD	DIAG. COMP STAMP SC	NAP	WS	ET	SAV	Rect CS	Curv CS	Unid CS	FOLDED Pl	Nb	Pu	NO FOLD Pl	Pu	Ro	Nb	Lu	Pl	PLAIN UNID	FST	MST	GRIT	OTHER <1/2"	DAUB
38AN008			1				298	59	2		5	17	20	18	1	1	1	77	1	1		2	14	663	88	939	42	5	1
38AN029		1	6				1					1		41										9		177			
38AN035												1	1											1	9	3		2	
38AN126	3	11	44		21					2		18	14	31	5	6	2	7				1		82	7	66			
38AN131			1										2												1				
38AN139													1											1	2	2		1	
38AN140	2	3	8	2								4	6							1				48	119	46			
9EB009						1?								12										1	3		33		
9EB010				1	1								5											10	22	8	2	2	
9EB011		4											3											5	14	8	4		
9EB013	6			4								3	5	3	2				1					177		59			
9EB015			32		1							2	1	1										7	2	1			
9EB016	1	1	2	1		1		1				7	6	10										18	13	14	35		
9EB017	28	8	44	1			63		1			5	17											197	21	150			
9EB018			2	1																				10	13	3			
9EB019	8	1	211											1										294	3	225			
9EB021	1	3	41											15		1								28					
9EB056																													
9EB062																													
9EB072														1															
9EB076	15	9	54	26	1	3						8	72	16	11		1	1				5	1	1020	99	1133	122	6	
9EB077			2										1	1											2		7		
9EB079	1			1		2								2					2		1		1				92		
9EB080										3				6			1								7	2	35	1	
9EB081												1	1											4	27	3		5	
9EB082														2				2					3				26		
9EB083	4	6	14	3								3	18	7					1					112	238	132	7	6	1
9EB084													1																
9EB085	3		4	1	1	3	1			113	119	23	21	309									23	10085	85	10134	25	3	
9EB086		2	2			2	2					4	6	12								1		11	12	5	28		
9EB088	2?												1	3										2	1		18		
9EB089			7											1								1		3	12	10	15	1	
9EB090	3	8	4			1						1	1								1			7	12	11	33	1	
9EB091	195	2459	814	113	3		37	37	12			2916	1532	3908	50	24	38		23	12	13	27		19705	1611	11044		7	
9EB092			1	3					1	1	1	2	2	1	2		2	1				2		15	157	85	3	5	
9EB093	1		1									1	2	1										6	9	16	36	3	
9EB094				1																					4		4		
9EB120																													
9EB143														1															
9EB162														5															

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	AMOR	Ttr pod	Pipe	TOTALS BODY	RIMS	PLAIN	DEC	GRAND TOTAL	Mississippian Quartz	Meta	Triangular CPC	R&V	Total ppts	P/A ppts	P/A cer	Unk. Miss	Early Miss.	Middle Miss.	Late Miss.	P/A Miss. Component
38AN008				146	9	138	17	2267	3		1		4	1	1	0	1	1	0	1
38AN029				1			1	449					0		1	1	0	0	0	1
38AN035				15		12	3	17					0		1	1	0	0	0	1
38AN126								392	13				13	1	1	1	1	1	0	1
38AN131				4		1	3	4					0		1	1	0	0	0	1
38AN139				6		4	2	7					0		1	1	0	0	0	1
38AN140		1						249	4				4	1	1	0	0	1	0	1
9EB009				65	3	40	28	49					0		1	1	0	0	0	1
9EB010			1	88	10	43	55	54					0		1	0	0	1	0	1
9EB011				55	11	35	31	41					0		1	0	1	0	0	1
9EB013		2						264					0		1	0	1	1	0	1
9EB015				73	7	32	42	54					0		1	1	0	1	0	1
9EB016				96	3	66	23	113					0		1	1	0	0	0	1
9EB017		2		53	8	4	57	621					0		1	1	1	0	0	1
9EB018								29					0		1	1	0	0	0	1
9EB019				1		1		759				1	1	1	1	1	0	0	0	1
9EB021								95					0		1	0	0	1	0	1
9EB056								0	1				1	1	0	1	0	0	0	1
9EB062								0	1				1	1	0	1	0	0	0	1
9EB072				1			1	1					0		1	1	0	0	0	1
9EB076								2656	3	1	1		5	1	1	1	1	1	0	1
9EB077								13					0		1	1	0	0	0	1
9EB079				99	5	92	12	104					0		1	1	1	1	0	1
9EB080				42	2	34	10	55					0		1	0	1	1	0	1
9EB081								42					0		1	0	1	1	0	1
9EB082				28	5	31	2	33					0		1	0	1	1	0	1
9EB083	2			9		6	3	562	1				1	1	1	1	0	1	0	1
9EB084								1		1			1	1	1	1	0	0	0	1
9EB085	1							24350	139	2			141	1	1	0	1	0	0	1
9EB086	1		2	48	2	27	22	113					0		1	0	1	0	0	1
9EB088				27	1	19	7	26					0		1	1	0	0	0	1
9EB089				23	1	17	6	50					0		1	1	0	0	0	1
9EB090		1		95	9	62	36	93					0		1	1	0	1	0	1
9EB091	1	3	153					54151	295	9	4	5	313	1	1	0	1	1	0	1
9EB092								291	3				3	1	1	0	1	1	1	1
9EB093	1			37	2	34	2	81					0		1	1	0	0	0	1
9EB094							1	10					0		1	1	0	0	0	1
9EB120								0	1				1	1	0	1	0	0	0	1
9EB143								1					0		1	1	0	0	0	1
9EB162								5					0		1	1	0	0	0	1

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	UTM NORTHING	UTM EASTING	SFT	TC	WOODLAND DUN	DPT	CTV	CON	SC	NAP	WS	MISSISSIPPIAN UNK	ET	SAV	EL	PIS	UNK	L.L.	Unk. CERAM	Fiber Plain	Fiber Punct	SPECIFIC FINISHES BUR	MICK	DISKS	COB	FAB
9EB203	3772500	345900															1									
9EB207	3771800	347100			1										1			1				4	6			3
9EB208	3771600	346700			1	1									1			1				2	4			2
9EB209	3772300	344900															1									
9EB218	3771600	345600																	1							
9EB219	3771950	345750	1		1	1							1	1	1	1				2	3		4		2	31
9EB235	3772300	345650			1	1								1												1
9EB236	3772500	345500			1	1						1			1											
9EB255	3767200	351200															1									
9EB259	3786750	339250	1		1	1	1	1	1	1				1	1		1			8		4	1		1	13
9EB260	3790750	338900				1																				
9EB270	3788675	338500															1									
9EB281	3787875	338475				1								1	1							1		1		
9EB283	3783375	338150																								
9EB286	3782850	338450																								
9EB300	3783000	340200					1										1									
9EB320	3775150	346000																								
9EB328	3778950	341350			1		1					1	1		1											2
9EB348	3774500	346700			1		1								1							1				1
9EB349	3777750	344850															1									
9EB366	3778800	341500															1									
9EB382	3779150	341650			1	1	1								1		1		1							2
9EB384	3782625	337675																								
9EB387	3786450	339300			1	1							1	1	1							3	1		1	4
9EB388	3785800	339300											1									1				
9EB395	3784300	338650												1									1			
9EB412	3771300	347900															1									
9EB414	3774000	347850															1					1	1			
9EB430	3772800	348590			1		1			1			1	1			1					1				2
9EB431	3772640	348480			1		1		1				1	1	1		1					3				5
9EB432	3772340	348120					1		1								1									
9EB433	3772230	348030					1					1					1					1		1		
9EB434	3772180	347950												1											1	
9EB435	3771900	348050										1			1		1							1		
9EB437	3773480	348240															1									
9EB438	3773504	348096												1												
9EB442	3774096	347372															1									
9EB443	3773744	347876					1										1									
9EB445																	1									
9EB453	3785732	339696			1		1					1					1									2

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	Woodland finishes CORD	WCkS	SS	INC	PUN	Miss CORD	DIAG. COMP STAMP SC	NAP	WS	ET	SAV	Rect CS	Curv CS	Unid CS	FOLDED Pl	Nb	Pu	NO FOLD Pl	Pu	Ro	Nb	Lu	Pl	PLAIN UNID	FST	MST	GRIT	OTHER <1/2"	DAUB
9EB203			2		1																				5				
9EB207	2		1	1								2	2			1					1			10	203	222		11	
9EB208			4	3						1	4	6	1	2			1	1						46	82	72	2	1	
9EB209												1													3			1	
9EB218																										1			
9EB219	4	9	29	7		1				18	12	24	27				1	2			3		7	135	48	1017		2	
9EB235											1	1												12	13	1		1	
9EB236		2		1								1	1											31	35	17	1	1	
9EB255													1													1			
9EB259	20	15	88	2			3	1		1		3	23	371										1390	25	1388		6	
9EB260			1																									1	
9EB270														1															
9EB281			4									5	9											3	41	14	2	14	
9EB283																													
9EB286																													
9EB300		2										1	1											1	2		1		
9EB320																													
9EB328	1	1	24		3								6	4				1						147	26	62	88	5	
9EB348			1									1	1	2		1	1	1	6		1			23	25	47		1	
9EB349													1																
9EB366	1																							2	2			1	
9EB382	1	3	12	1	3									11										94	2	74			
9EB384																													
9EB387	1	1	3													1		1	1					4	5	31			
9EB388			1									2	2											3	15	12	1	3	
9EB395					1								1													3		2	2
9EB412												1												1	9				
9EB414																									3				
9EB430		9	3					6		1			1											31		6			
9EB431		11		1			2			1		1	6	7				1						26		12		1	
9EB432		1					2					1	1											4		5			
9EB433	1		2									1	1											34		7			
9EB434												1	2			1								4		3	4		
9EB435	1											3	4	1	1				1		1			141	3	32	3		
9EB437												1	1	3										19		1			
9EB438												1												1		2	1		
9EB442														1															
9EB443			2																					1	1	1			
9EB445																						1		3		2	1		
9EB453		1	1									1	2											3	1	7	2		

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	AMOR	Ttr pod	Pipe	TOTALS BODY	RIMS	PLAIN	DEC	GRAND TOTAL	Mississippian Quartz	Meta	Triangular CPC	R&V	Total ppts	P/A ppts	P/A cer	Unk. Miss	Early Miss.	Middle Miss.	Late Miss.	P/A Miss. Component
9EB203								8			1		1	1	1	1	0	0	0	1
9EB207	1							470					0		1	0	0	1	1	1
9EB208								234	3		1		4	1	1	0	0	1	1	1
9EB209				4		3	1	5					0		1	1	0	0	0	1
9EB218				1		1		1			1		1	1	0	1	0	0	0	1
9EB219		3						1391	8				8	1	1	1	1	1	0	1
9EB235				25		22	3	30					0		1	0	1	0	0	1
9EB236				79	4	57	10	90	1				1	1	1	0	0	1	0	1
9EB255				2		1	1	2					0		1	1	0	0	0	1
9EB259	1	2						3366	4			1	5	1	1	1	1	1	0	1
9EB260				2			2	2	1				1	1	0	1	0	0	0	1
9EB270				1		1		1					0		1	1	0	0	0	1
9EB281	2			80	4	62	22	96					0		1	0	1	1	0	1
9EB283								0	2				2	1	0	1	0	0	0	1
9EB286								0	1				1	1	0	1	0	0	0	1
9EB300				7	1	2	6	8					0		1	1	0	0	0	1
9EB320								0	1				1	1	0	1	0	0	0	1
9EB328	4		1	259	4	209	54	375	1				1	1	1	0	1	1	0	1
9EB348								113					0		1	0	0	1	0	1
9EB349								1					0		1	1	0	0	0	1
9EB366	1			2			2	7					0		1	1	0	0	0	1
9EB382								203	29				29	1	1	1	0	1	0	1
9EB384								0	1				1	1	0	1	0	0	0	1
9EB387								57	20	1	1		22	1	1	0	1	1	0	1
9EB388	1			39	3	32	10	41					0		1	0	1	0	0	1
9EB395	1			5	1	4	2	11					0		1	0	1	0	0	1
9EB412				1			1	11					0		1	0	1	0	0	1
9EB414				4	1	4	1	5					0		1	1	0	0	0	1
9EB430				9			8	60					0		1	1	0	0	0	1
9EB431		1		6			6	78					0		1	1	1	0	0	1
9EB432								14					0		1	1	1	1	0	1
9EB433				7	1	6	2	48					0		1	1	0	0	0	1
9EB434				14	1	7	8	16					0		1	1	0	0	0	1
9EB435				36	1	30	7	192	2				2	1	1	0	1	0	0	1
9EB437								25					0		1	1	0	1	0	1
9EB438				2		1	1	5					0		1	1	0	0	0	1
9EB442				1		1		1	1				1	1	1	0	1	0	0	1
9EB443				4		3	1	5					0		1	1	0	0	0	1
9EB445				6	1	3	4	7					0		1	1	0	0	0	1
9EB453				18	1	10	9	20					0		1	1	0	0	0	1

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	UTM NORTHING	UTM EASTING	SFT	TC	WOODLAND DUN	DPT	CTV	CON	SC	NAP	WS	MISSISSIPPIAN UNK	ET	SAV	EL	PIS	UNK	LL	Unk. CERAM	Fiber Plain	Fiber Punct	SPECIFIC FINISHES BUR	MICK	DISKS	COB	FAB
9EB465	3777700	345100			1	1	1							1			1									
9EB466	3777170	345470			1										1		2		1				2			1
9HT009	3799520	334970			1							1					1									2
9HT102	3801160	334410			1	1																				1
S#2 (1-2)																										

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	Woodland finishes CORD	WCKS	SS	INC	PUN	Miss CORD	DIAG. COMP STAMP SC	NAP	WS	ET	SAV	Rect CS	Curv CS	Unid CS	FOLDED Pl	No	Pu	NO FOLD Pl	Pu	Ro	No	Lu	Pl	PLAIN UNID	FST	MST	GRIT	OTHER <1/2"	DAUB
9EB465		1									1		2	10				1						46		6	1		
9EB466	2											2		9	1			1						87		16			
9HT009	1													2				1						1	24	3	2		
9HT102		1																						4	1	2	4		
S#2 (1-2)																													

Sites with Mississippian Components in the Richard B. Russell Reservoir (continued)

SITE NUMBER	AMOR	Ttr pod	Pipe	TOTALS BODY	RIMS	PLAIN	DEC	GRAND TOTAL	Mississippian Triangular Quartz	Meta	CPC	R&V	Total ppts	P/A ppts	P/A cer	Unk. Miss	Early Miss.	Middle Miss.	Late Miss.	P/A Miss. Component
9EB465				4	1	1	4	68					0		1	1	1	0	0	1
9EB466				2		2		121					0		1	1	0	1	0	1
9HT009								36					0		1	1	0	0	0	1
9HT102				9		7	2	13				1	1	1	0	1	0	0	0	1
S#2 (1-2)									1				1	1	0	1	0	0	0	1

Sites with Mississippian Components in the Oglethorpe County Clearcut Tracts

Site Number	Survey Tract	Tract #	Mississippian Periods: Unk. Miss	Early Miss.	Middle Miss.	Late Miss	Mississippian Phases: Iron Horse	Dyar	Bell	Early Lamar	Late Lamar	Wood stock	Mississippian Triangulars: Quartz	Meta	CP chert	R&V chert	Pied. chert	Total ppts	P/A ppts	Total cer	P/A cer	Reference
9Og383	Maxeys	2		1									4			1	1	6	1		1	Freer 1989:118, 119
9Og148	Big/Barrow	1			1															1	1	Freer 1989:118
9Og152	Big/Barrow	1			1																1	Freer 1989:118
9Og168	Big/Barrow	1			1																1	Freer 1989:118
9Og186	Crawford	3	1										2					2	1			Freer 1989:118, 122
9Og20*	Lexington	4		1	1																1	Freer 1989:118, 122
9Og269*	Long Creek	5	1										1					1	1			Freer 1989:118, 124
9Og272*	Long Creek	5	1										1					1	1			Freer 1989:118, 124
9Og323*	Goosepond	6	1										1					1	1			Freer 1989:118, 124
9Og344*	Goosepond	6	1																		1	Freer 1989:118
9Og368*	Goosepond	6	1										1					1	1			Freer 1989:118, 124
9Og214*	Kegels Creek	7		1								1	1					1	1		1	Freer 1989:118, 124
9Og281*	Saxon	8	1																		1	Freer 1989:118
9Og285*	Saxon	8	1										1					1	1		1	Freer 1989:118, 128
9Og290*	Saxon	8	1										5					1	1			Freer 1989:118, 128
9Og297*	Saxon	8	1										5					1	1			Freer 1989:118, 128
9Og300*	Saxon	8	1										4					1	1			Freer 1989:118, 129
9Og306*	Saxon	8		1	1							1	2					2	1	250	1	Freer 1989:118
9Og307*	Saxon	8	1										1					1	1		1	Freer 1989:118, 128
9Og309*	Saxon	8	1										1					1	1			Freer 1989:118, 129
9Og313*	Saxon	8	1																		1	Freer 1989:118
9Og370	Maxeys	2				1			1				1					1	1		1	Freer 1989:134, 137
9Og373	Maxeys	2				1			1												1	Freer 1989:134, 137
9Og383	Maxeys	2				1					1										1	Freer 1989:134, 135
9Og389	Maxeys	2				1		1													1	Freer 1989:134, 135
9Og390	Maxeys	2				1					1										1	Freer 1989:134, 135
9Og392	Maxeys	2				1			1												1	Freer 1989:134, 137
9Og393	Maxeys	2				1			1				1					1	1		1	Freer 1989:134, 137
9Og395	Maxeys	2				1	1	1													1	Freer 1989:134, 135
9Og413	Maxeys	2				1				1											1	Freer 1989:134, 135
9Og416	Maxeys	2				1		1													1	Freer 1989:134, 135
9Og431	Maxeys	2				1	1														1	Freer 1989:134, 135
9Og433	Maxeys	2				1			1												1	Freer 1989:134, 137
9Og144	Big Barrow	1				1				1											1	Freer 1989:134, 138
9Og146	Big Barrow	1				1					1										1	Freer 1989:134, 140
9Og149	Big Barrow	1				1			1		1										1	Freer 1989:134, 140
9Og152	Big Barrow	1				1					1										1	Freer 1989:134, 140
9Og155	Big Barrow	1				1	1				1										1	Freer 1989:134, 138, 140
9Og157	Big Barrow	1				1		1													1	Freer 1989:134

Sites with Mississippian Components in the Oglethorpe County Clearcut Tracts

Site Number	Survey Tract	Tract #	Mississippian Periods: Unk. Miss	Early Miss.	Middle Miss.	Late Miss	Mississippian Phases: Iron Horse	Dyar	Bell	Early Lamar	Late Lamar	Woodstock	Mississippian Triangulars: Quartz	Meta	CP chert	R&V chert	Pied. chert	Total ppts	P/A ppts	Total cer	P/A cer	Reference
9Og160	Big Barrow	1				1		1													1	Freer 1989:134
9Og167	Big Barrow	1				1		1													1	Freer 1989:134, 140
9Og168	Big Barrow	1				1	1														1	Freer 1989:134, 138
9Og170	Big Barrow	1				1				1											1	Freer 1989:134, 138
9Og176	Big Barrow	1				1		1													1	Freer 1989:134
9Og178	Big Barrow	1				1		1													1	Freer 1989:134
9Og184	Crawford	3				1		1													1	Freer 1989:134, 143
9Og185	Crawford	3				1					1									1	1	Freer 1989:134, 141
9Og187	Crawford	3				1		1													1	Freer 1989:134, 143
9Og188	Crawford	3				1		1													1	Freer 1989:134, 143
9Og189	Crawford	3				1		1													1	Freer 1989:134, 143
9Og190	Crawford	3				1		1													1	Freer 1989:134, 143
9Og192	Crawford	3				1					1										1	Freer 1989:134, 142
9Og193	Crawford	3				1					1										1	Freer 1989:134, 142
9Og195	Crawford	3				1	1	1													1	Freer 1989:134, 141, 143
9Og196	Crawford	3				1					1									2	1	Freer 1989:134, 141
9Og198	Crawford	3				1	1														1	Freer 1989:134, 141-142
9Og199	Crawford	3				1		1					1					1	1		1	Freer 1989:134, 143
9Og205	Crawford	3				1	1						1					1	1		1	Freer 1989:134, 141-142
9Og206	Crawford	3				1					1										1	Freer 1989:134, 142
9Og207	Crawford	3				1	1														1	Freer 1989:134, 141-142
9Og208	Crawford	3				1				1										2	1	Freer 1989:134, 141
9Og17*	Lexington	4				1					1										1	Freer 1989:134, 145
9Og18*	Lexington	4				1					1										1	Freer 1989:134, 145
9Og20*	Lexington	4				1		1													1	Freer 1989:134, 145
9Og23*	Lexington	4				1					1										1	Freer 1989:134, 145
9Og24*	Lexington	4				1		1													1	Freer 1989:134, 145
9Og25*	Lexington	4				1		1													1	Freer 1989:134, 145
9Og27*	Lexington	4				1			1												1	Freer 1989:134, 146
9Og31*	Lexington	4				1		1													1	Freer 1989:134, 145
9Og35*	Lexington	4				1			1												1	Freer 1989:134, 146
9Og320*	Goosepond	6				1		1					4					4	1		1	Freer 1989:134, 148
9Og347*	Goosepond	6				1					1									1	1	Freer 1989:134, 146
9Og355*	Goosepond	6				1					1		1	1				2	1		1	Freer 1989:134, 146
9Og214*	Kegels Creek	7				1					1		1					1	1	3	1	Freer 1989:134, 148
9Og215*	Kegels Creek	7				1					1		5					5	1		1	Freer 1989:134, 148
9Og229*	Kegels Creek	7				1			1				1					1	1		1	Freer 1989:134, 149
9Og306*	Saxon	8				1	1						2					2	1		1	Freer 1989:134, 150

* Savannah River Valley Sites

Sites with Mississippian Components on the Savannah River Site

Ct	Site	East	North	>18 tri	≤18 tri	Unid Wood	ST	TC	R/Diag	R/SS	Dept	ELW	LLW	S II	S III	Irene	Unk Miss	Miss Cer.	Unk. Miss C&pp
AK	34	440300	3687550	1	1		1		1	1	1	1	1				1	1	1
AK	58	449160	3692060							1	1					1		1	
AK	69	440000	3690960		1	1													1
AK	78	439860	3689680							1	1		1		1			1	
AK	86	439100	3687650							1	1	1			1			1	
AK	88	438260	3686340				1	1		1	1	1		1				1	
AK	95	433740	3685300		1		1	1		1	1	1	1	1	1	1	1	1	1
AK	106	437040	3684360	1	1					1	1	1	1		1			1	
AK	119	427810	3677920		1		1			1	1	1	1		1	1		1	
AK	141	433810	3682520							1	1	1	1		1	1		1	
AK	142	433660	3682820	1	1		1			1	1	1	1						1
AK	143	433780	3682990		1					1	1	1	1						1
AK	147	434540	3680940		1		1			1	1	1	1						1
AK	155	437500	3683940	1	1														1
AK	157	437795	3684230		1														1
AK	158N	438140	3684260	1	1					1	1	1	1						1
AK	158S	438140	3684060	1	1		1	1		1	1	1	1		1	1		1	
AK	159	438520	3684100		1			1		1	1	1	1						1
AK	164	432900	3678740		1						1		1		1		1	1	1
AK	224	443500	3688380	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1
AK	228E	429000	3676525	1							1		1				1	1	
AK	228W	428830	3676525	1	1						1	1	1				1	1	1
AK	264	442000	3688000		1					1		1	1				1	1	1
AK	269	429560	3677080		1				1	1	1	1	1		1		1	1	1
AK	282	442840	3695860		1					1	1	1	1				1	1	1
AK	283	443140	3695910		1						1					1		1	1
AK	288	442780	3695100	1	1		1		1	1	1	1	1						1
AK	335	443110	3689000	1	1			1			1		1				1	1	1
AK	340	436440	3693670		1								1						1
AK	341	428900	3684380									1					1	1	1
AK	344	442230	3687640		1					1									1

Sites with Mississippian Components on the Savannah River Site

Ct	Site	East	North	>18 tri	≤18 tri	Unid Wood	ST	TC	R/Diag	R/SS	Dept	ELW	LLW	S II	S III	Irene	Unk Miss	Miss Cer.	Unk. Miss C&pp
AK	352	444400	3691000		1				1	1	1	1	1						1
AK	372	446180	3694180								1	1					1	1	1
AK	376	445500	3695050		1		1	1	1	1	1	1					1	1	1
AK	378	441180	3686520	1	1					1	1	1	1				1	1	1
AK	386	441310	3685620														1	1	1
AK	387	445380	3689950	1						1	1	1	1				1	1	1
AK	388	441550	3691980	1	1					1	1	1	1		1	1	1	1	1
AK	390	445440	3688420		1					1	1	1	1	1	1			1	
AK	392	444090	3690240						1	1	1	1	1		1		1	1	1
AK	395	444810	3690370		1					1	1	1	1						1
AK	396	444480	3690480							1	1	1	1			1		1	
AK	400	435270	3684960								1						1	1	1
AK	409	444500	3686900	1	1			1		1	1	1	1			1	1	1	1
AK	423	435200	3682620		1					1			1				1	1	1
AK	428	439720	3685560									1	1				1	1	1
BR	13	450620	3686000		1						1	1	1						1
BR	16	449540	3688340							1		1					1	1	1
BR	31	430610	3672280		1		1			1	1	1	1		1			1	
BR	32	431480	3671980								1	1	1		1			1	
BR	34	432240	3672430												1			1	
BR	35	432360	3672050								1	1			1			1	
BR	39	437560	3665840		1		1			1	1	1	1		1			1	
BR	41	436800	3666340							1	1	1	1		1			1	
BR	42	435420	3666700								1	1	1				1	1	1
BR	53	435220	3666990		1						1		1				1	1	1
BR	55	441460	3667980	1						1	1	1	1	1				1	
BR	170	441900	3663600									1	1		1			1	
BR	187	441060	3664380		1					1	1	1	1						1
BR	228	456000	3688180							1	1	1					1	1	1
BR	231	444980	3683340	1	1		1	1		1	1	1	1			1		1	
BR	240	452240	3684960		1	1													1

Sites with Mississippian Components on the Savannah River Site

Ct	Site	East	North	>18 tri	≤18 tri	Unid Wood	ST	TC	R/Diag	R/SS	Dept	ELW	LLW	S II	S III	Irene	Unk Miss	Miss Cer.	Unk. Miss C&pp
BR	291	440460	3671300		1														1
BR	299	434920	3676200	1						1	1						1	1	1
BR	315	442370	3673760									1				1		1	
BR	345	438780	3672820								1					1		1	
BR	361	442140	3677040					1		1	1	1			1			1	
BR	364	435470	3667350	1	1					1	1	1	1						1
BR	438	441020	3666700		1					1	1	1	1						1
BR	447	451630	3691360	1						1	1	1	1				1	1	1
BR	449	451520	3690060													1		1	
BR	450	430000	3672100	1			1			1	1	1	1		1	1		1	
BR	453	448910	3690460	1									1			1		1	
BR	462	452720	3692540		1					1	1	1	1						1
BR	467	452080	3691810										1			1		1	
BR	469	452400	3690600							1	1	1	1				1	1	1
BR	495	440780	3671900	1	1		1	1	1	1	1	1	1	1		1		1	
BR	525	456080	3685170		1						1	1							1
BR	527	441460	3673060	1	1					1	1	1	1						1
BR	528	441240	3672930	1	1			1		1	1	1	1		1		1	1	1
BR	531	439725	3673250		1		1	1		1	1	1	1						1
BR	535	440680	3676060		1					1	1	1							1
BR	574	451600	3686830								1	1					1	1	1
BR	581	454310	3672830						1			1	1			1		1	
BR	583	454120	3673300	1	1					1	1	1	1		1			1	
BR	590	454560	3672600		1		1	1		1	1	1	1						1
BR	597	453560	3675180		1		1	1		1	1	1	1						1
BR	599	453770	3674130		1			1		1		1	1						1
BR	601	452000	3671560		1			1		1	1	1	1						1
BR	607	454980	3673520		1				1	1		1	1		1			1	
BR	613	454580	3671300	1	1					1	1	1	1						1
				27	56	2	18	17	10	60	69	68	64	6	25	19	31	62	60

Sites with Mississippian Components on the Sumter National Forest and Greenwood County Survey Tracts

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Woodstock	Etowah	Sav.	Early Lamar	Late Lamar	Protohistoric	Unid. Miss	Finishes Present in Assemblage: Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
38Ed88	309-1 gS				X?	X																3							
38Ed114	294-1 GS									X																			1?
38Ed172	311-1 GS									X		13										27					1		
38Ed209	294-2 GS									X												4					1		
38Mc178*	240-2					X																17					6		
38Mc179	240-a GS									X							2 (Cartersville?)					33							
38Mc180*	GS						X																						
38Mc181*	254-1 GS					X?																			2		2	1	
38Mc182*	254-3 GS									X															1				
38Mc189	237-1 GS									X?																			
38Mc200*	242-4 GS									X																	7		
38Mc209*	GS									X																	1		
38Mc242	297-1 GS									X																			
38Mc390	252-21 GS									X																			
38Mc395	252-30 GS									X																			
38Mc396	252-35 GS									X																			
38Mc426	GS									X																			
38Mc427	TU2 Level 1									X													1				1		
38Mc427*	TU1 Level 1									X													2						1
38Mc428*	TU1 Level 3					X							1												1				
38Mc440	246-3 GS					X?																					1		
38Mc452	319-5 GS									X?															4				
38Mc472	243-3 GS									X																			
38Mc509										X																			
38Mc510										X																			
38Oc18	38Oc18-1-1						X?	X														29		1?	1	3	2	3	
38Oc18	38Oc18-1-1								X							1						14				3		2	4
38Oc18	misc.					X?	X	X	X?									2						1					

Sites with Mississippian Components on the Sumter National Forest and Greenwood County Survey Tracts (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars: Quartz	Meta	CPC	R&V	Comments
38Ed88	19/1 14/1						
38Bd114			2				
38Ed172			1				
38Ed209			1				
38Mc178*	24/1 (Feature 1) 19/1 (density colection)						Density collection examined for diagnostics.
38Mc179			1				
38Mc180*	28/1 (surface in fire break)						
38Mc181*	19/1						
38Mc182*							
38Mc189			1				
38Mc200*		8/1 (fragmentary, may not be Mississippian)					
38Mc209*							Stone discoidal present.
38Mc242			1				
38Mc390			1				
38Mc395			1				
38Mc396			1				
38Mc426						1	
38Mc427							Disk is of basalt.
38Mc427*							Disks include 1 of carved soapstone, 1 of shell.
38Mc428*	20/1						TU 1 is stratified, w/Deptford under Mississippian.
38Mc440	19/1						
38Mc452							
38Mc472			1				
38Mc509			1				
38Mc510			9				
38Oc18						1	Surface Unit 1
38Oc18							Surface Unit 2
38Oc18	18/2 19/1	17/2 (20 mm, frag) 18/1 (18mm) 29/1					Diagnostics in various proveniences.

Sites with Mississippian Components on the Sumter National Forest and Greenwood County Survey Tracts (continued)

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Woodstock	Etowah	Sav.	Early Lamar	Late Lamar	Protohistoric	Unid. Miss	Finishes Present in Assemblage: Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
38Oc118	38Oc118-1									X							4					5				1			
38Oc188	23-1							X	X		1	5										39			4		7	6	
38Oc201	68-2							X	X							3		1	1		1	17				2	2		
38Oc201	68-2							X	X							2						24			1	5	3		
38Oc207	27-1			X?				X	X			22																	
38Oc207	27-1 (STP4)									X										2 (2-line)		41			1		1		
38Oc208	27-2							X?		X												2						X	
38Oc209	27-3 (GS)									X												1						1	
38Oc211	27-6								X							X	6									1			1
38Oc212	27-7									X																			1
38Oc213	27-8									X															1				1

Greenwood County Survey Tracts

Site Number	Catalog Numbers	Swift Creek	Napier	Woodstock	Etowah	Sav.	Early Lamar	Late Lamar	Protohistoric	Unid. Miss	Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
38Gn90b										X																			
38Gn92b										X																			
38Gn92c										X																			
38Gn98										X																			
38Gn107					X	X																							
38Gn143										X															1	2			1
38Gn147	38Gn147.B-9																												
38Gn158b										X																			
38Gn172a										X																			
38Gn174										X																			
38Gn175										X																			
38Gn176										X																			
38Gn177										X																			
38Gn185										X																			
38Gn188							X?			X																			
38Gn229										X																1			
38Gn260b										X																			
38Gn265a										X																			
38Gn274d										X																			
38Gn279	38Gn279-32						X																						
38Gn311										X										1 (1 line)									
38Gn322										X																			
38Gn323										X																			
38Gn326b										X																			
38Gn339										X																			

Sites with Mississippian Components on the Sumter National Forest and Greenwood County Survey Tracts (continued)

Site Number	Design Motif Categories (# of category/#of sherds)	Rim Decorative Treatment Categories (# of category/#of sherds)	Mississippian Triangulars Quartz	Meta	CPC	R&V	Comments
38Oc118		30/1 13/1 (fragmentary)					Jesse James site
38Oc188	39/1 (interior incising, exterior comp stamped)	8/1 (21 mm) 30/2 (fragmentary)					Historic Cherokee?
38Oc201							Historic Cherokee? (Shovel Test III, Level 1)
38Oc201		2/1					Historic Cherokee? (Shovel Test II, Level 1)
38Oc207	9/1					1	Historic Cherokee? (Woodstock design may be late copy)
38Oc207						1	(Shovel Test Pit 4)
38Oc208							Large comp stamp sherds may be Cherokee.
38Oc209			1				Large comp stamp sherd may be Cherokee.
38Oc211		8/1 (8mm)					Qualla check stamped sherds pulled for USFS type collection
38Oc212						1	A lot of black chert debitage in collection.
38Oc213						1	

Greenwood County Survey Tracts

Site Number	Design Motif Categories	Rim Decorative Treatment Categories	Quartz	Meta	CPC	R&V	Comments
38Gn90b			1				
38Gn92b			1				
38Gn92c			1?				(Point missing from collections)
38Gn98			1				
38Gn107	12/2 19/1						
38Gn143			1?				(Point missing from collections)
38Gn147			1				
38Gn158b			1				
38Gn172a			1				
38Gn174			1?				(Point missing from collections)
38Gn175			3				
38Gn176			2				
38Gn177			1				
38Gn185			1				
38Gn188		8/1 (9 mm)					
38Gn229			1				
38Gn260b			1				
38Gn265a			1				
38Gn274d			1				
38Gn279							Sherd has lug and incising below rim.
38Gn311			1				
38Gn322			1				
38Gn323			3				
38Gn326b			2				
38Gn339			1				

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology

		Period of Occupation									Finishes Present in Assemblage														Mississippian Complicated Stamped				
Site Number	Catalog Numbers	Swift Creek	Napier	Wood stock	Etowah	Sav.	Early Lamar	Late Lamar	Proto historic	Unid. Miss	Burn ished	Other Plain	Corn Cob	X Cord	Prr Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Rectilinear <2 mm	Rectilinear >2 mm	Curvilinear <2 mm	Curvilinear >2 mm	Unid. C.S.
9Ba12	26210							X	X			1				1	7	2	1	3	1	3							
9Ba19	24377									X																			
9Ba19	24375						X?											2				7			1		2		
9Ba17*	24373		X					X	X							4		12	2	3	1			1	2	4	1	3	6
9Ba17	24374							X										1	2			15			1	4			6
Ba18	24377									X						2					1	42			1	2		4	
9Ba27	26447			X				X										2	1			102		1	3	11	2	4	
9Ba38	31898									X																			
9Ba?*	5175		X		X			X								3		3	1		2			1	3	16		10	
9Gl1	5889	X								X		22										12			2		1		
9Gl5	28665						X?					1					1					1					1		
9Gl6	28666	X								X												2						2	
9Jf?*	20888						X				2	18					1												
9Jf2*	687, 672									X																	2		
9Jf*	5894									X			1																
9Jf*	5898					X						7										20			4				
9Jf*	9597							X	X?											1 (conc. circles)									
9Jf*	4504									X											1						1		
9Jf*	4503					X						1 (red-filmed)													1		1		
9Jf*	4498									X															3				
9Jf*	5892			X?		X						8				9	1								2		2		
9Jf*		X?	X?			X	X											2	2 (2-line)				4						
9Lc1*	S-300, 25121					X?	X			X	1	28				1						27	3	1	1	7	2	1	13
9Lc1*	942									X	1	22										22					1		1
9Lc2*	25120									X																			
9Lc2*	S-310, 25120						X					20						2 (2-line)		1		9			6	3	8		4
9Lc3*	957					X	X					4						2				11	2		6		8		1
9Lc3*	S-320, 25119					X	X	X?				36		2	1			1				19	4		4		15		6
9Lc4*	25110									X																	1		
9Lc6*	S-360, 25116						X?					13						1 (1-line)				29			13	4	20		
9Lc7*	S-400, 25115						X					21										53	2		10	3	9		3

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars Quartz	Meta	CPC	R&V	Comments
9Ba12	4/6 19/1 47/1 32/1 31/2 45/2 47/2	9/1 (11mm) 17/3 (16, 17, 25mm)					Camp Hill Site, Boling Bottom, northern Banks County
9Ba19			1				Mississippian component based on triangular point
9Ba19							
9Ba17*	7/3 38/1 46/1 43/1	17/2 (19mm) 18/1					Only one rim fold intact enough to measure
9Ba17	40/1	17/1 17/1 (19mm)					Only one rim fold intact enough to measure
Ba18	45/1						
9Ba27	9/1 44/1 38/1	17/1 (19mm)					
9Ba38			1				Mississippian component based on triangular point
9Ba?*	7/1 12/3 46/3 40/1 32/3 30/2 31/1	17/4 (12, 13, 15, 16 mm)					Cash village site
9Gl1	39/1 10/3 8/3						
9Gl5	47/1						Sherd is Lamar Bold Recilinear Complicated Stamped
9Gl6	3/1						
9Jf7*	45/6						Blue Springs on Ogeechee River
9Jf2*							Bennett Landing Site
9Jf*							Quaker Road
9Jf*	12/1						Queensborough Site
9Jf*	46/1 45/1 48/1						Galphinton Site
9Jf*							Galphinton Site
9Jf*	18/1 19/1						Galphinton Site, strat. trench 0-6"
9Jf*							Galphinton Site, strat. trench 6-12"
9Jf*	18/1 10/1						Bruce Connelly Place, county line on Ogeechee
9Jf*	29/2 18/5 24/1 37/1 21/1 9/1 19/1 28/2 29/1	2/1 21/1 17/1 (10mm) 30/1 (12mm)					Sinque Field Site
9Lc1*	38/1 19/2 32/1 29/2	2/1 29/1 (8mm) 15/1 (12mm) 27/1 (12mm) 3/2	4				9Lc16 on box.
9Lc1*		16/1 (10mm)					9Lc16 on box.
9Lc2*			3				9Lc14 on box.
9Lc2*	29/1 45/2 28/3 25/4	3/1 1/1					9Lc14 on box.
9Lc3*	29/2 24/2 28/1	3/2 5/3 29/1 (9mm) 30/1 (22mm)					
9Lc3*	39/1 45/1 29/2	21/1 (10mm) 9/1 (12mm) 10/1					9Lc13 on box.
9Lc4*							
9Lc6*	45/3 32/1 36/1 26/2 25/1						9Lc10 on box.
9Lc7*	45/4 53/4 43/1 24/5 28/6 32/2 19/1 29/1	10/1 1/1 3/6 8/2 (9, 16mm) 9/1 (11mm)	1				9Lc9 on box. Other rims: 10/6 38/1 (8mm) 2/1

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology (continued)

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Wood stock	Etowah	Sav.	Early Lamar	Late Lamar	Proto historic	Unid. Miss	Finishes Present in Assemblage: Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear <2 mm	Rectilinear >2 mm	Curvilinear <2 mm	Curvilinear >2 mm	Unid. C.S.
9Lc9*	S-500, 25113									X		5										6			4		1		
9Lc10*	S-550									X	3														2		1		3
9Lc11*	S-660									X																			
9Lc11*	25111					X?						24		1				2		1		37			27		17		9
9Lc13*	S-820						X					4																	
9Md1*	9142							X										1	2	1		9							2
9Md1*	1073							X			2	1							1			2			1				5
9Md1*	25122							X				4				3	4		4	1	3	9				1		3	3
9Md2*	1072									X		5										2			1		1		
9Md2*	25123							X	X?				1			2	1	7	2	4	2	16	1			1		2	4
9Md3*	9143				X?	X?	X?	X?				7			1			1				17			6		1	3	5
9Md5*	9145									X								1				3				2	1		1
9Md19*								X?											2			2			2				3
9R11	165, 167					X					9			1		33						4							
9R11	166, 168					X					22		1	1		45						14							
9R11*	148					X	X																				2		
9R11*	140					X	X						1												1	1	2 4		
Mason's Plantation area						X	X				1?	X				22									9	1	4		
9Sn4*	FS1					X					12	23				40						22							
9Sn4*	FS17				X	X																					1		
9Sn4*	FS11					X					7					5										1		1	
9Sa11*	23863									X																			
9Sr?	4421							X	X			4										21			6	8		7	4
9Wa1	854					X				X	1	7					8					15					2		
9Wa2	31451					X											3					8			1		3		
9Wa2	972					X				X		19			1	2	3					3			2	1	1		
9Wa2	973					X																7					2		
9Wa2	868					X				X		4					3					8					6		
9Wa2	874					X						15			1	1	7					11			3		4		
9Wa2*	872					X										1											3		
9Wa2*	875			X?		X																							
9Wa2	867	X?				X		X				14				2	7			4	2	7				1	6		3
9Wa9	963																												
9Wa14	25152			X?			X				9	24						2				57	3		12	1	1	3	
9Wa19*	25151	X?		X?		X	X	X?		X								2							5	4	12	3	

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars: Quartz	Metal	CPC	R&V	Comments
9Lc9*	32/1						9Lc7 on box.
9Lc10*			1				
9Lc11*					1		9Lc5 on box.
9Lc11*	29/4 45/5 28/2 19/2 24/2 43/1	9/2 (8, 9mm) 15/2 (8, 9mm) 27/2 (7, 8 mm)					9Lc5 on box.
9Lc13*		8 / 1					
9Md1*	38/1						
9Md1*							
9Md1*	41/1 47/1 45/1	29/1 5/1	2				
9Md2*							
9Md2*		18/1 (19mm) 19/1 (22mm) 8/1 (18mm)					
9Md3*	14/1	8/1 (7 mm)					
9Md5*							
9Md19*	47/1						
9R11							Hollywood Mound A, Sq. 970R1000, 58-64"
9R11	19/1 21/1						Hollywood Mound A, Sq. 970R1000, 64-73"
9R11*	21/1 20/1	2/1 (on line block) 2/1 (on burnished plain)					Hollywood Mound A, Sq. 950R1000, 60-74"
9R11*	29/2 28/1 21/1	2/1					Hollywood Mound A, Sq. 940R1000 60-66"
Mason's	29/2 28/1	3/1 (on line block?) 29/1 (7mm) 3/1 (on curv. cs)					Sherds found on sand bar in river below presumed site area.
9Sn4*							Red Lake Site. Sherds found around old looters pits.
9Sn4*	11/1						Red Lake Site, N197E200, 75-85cm
9Sn4*							Red Lake Site
9Sa11*					1		
9St7	53/1 20/1 43/3 44/3	29/2 17/2 (23 mm, 23mm)					All materials are late - Qualla or Late lamar
9Wa1							Mostly Cartersville/Connestee assemblage
9Wa2							
9Wa2	36/1			1			Fortson Mound, material collected 2-25-87 by Kowalewski
9Wa2							Fortson Mound
9Wa2							Fortson Mound
9Wa2	19/1						Fortson Mound, simple stamped is Connestee
9Wa2*	39/1						Fortson Mound
9Wa2*	9/1						Fortson Mound
9Wa2	26/2						Fortson Mound
							Fortson Mound, one fine incised very late - 18th century?
9Wa9			1				Mississippian component based on triangular point
9Wa14	9/1 42/1	15/3 (10, 10, 12 mm) 2/2 3/2	1				Rembert phase material
9Wa19*	19/1 33/1 20/2 34/1 9/1 20/1 39/1 26/1 32/1	17/4 (10, 10, 15, 17mm) 15/1 (16mm) 21/1 (12mm) 9/1 (15mm) 3/3 5/2 17/5 (13,15,15,16,17mm)	2				Earl Edwards farm, north bank of Little River, 8.5 miles southwest of Washington (labeled S-450)

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology (continued)

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Wood stock	Etowah	Sav.	Early Lamar	Late Lamar	Proto historic	Unid. Miss	Finishes Present in Assemblage: Burn ished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear <2 mm	Rectilinear >2 mm	Curvilinear <2 mm	Curvilinear >2 mm	Unid. C.S.
9Wa19*	25215						X			X															3		4	3	
9Wa22	25160									X																2	1		
9Wa24	25162									X																2			
9Wa25	25163									X												1				1	1	1	
9Wa30*	25168									X														1			2	5	
9Wa32*	25170					X	X?			X															8	1	16	12	3
9Wa33*	25171					X	X?											1					4		10	11	10	1	3
9Wa34	25172									X										1		10				1	1		
9Wa35*	25173					X?	X																			1	3		
9Wa37	25175									X																1			1
9Wa36	25176	X		X		X?																			1	1	5		

* = partial sample of large collection (Mississippian diagnostics only identified)

Miscellaneous Sites with Mississippian Components at the University of Georgia Laboratory of Archaeology (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars: Quartz	Mississippian Triangulars: Meta	Mississippian Triangulars: CPC	Mississippian Triangulars: R&V	Comments
9Wa19*	18/1 5/1	1/1	1				labeled S-100
9Wa22			1				West bank of Beaveram Creek, 3.5 miles west of Washington
9Wa24							W. F. Fanning farm on north bank of branch Slaton's Mill Road, 8 miles SW of Washington.
9Wa25							Burdett farm on W side of Lincolnton Highway, 5 miles NE of Washington
9Wa30*		5/1					Sherrer farm, east bank of Kettle Creek, 3 miles west of Kettle Creek Battle Monument, 10 miles SW of Washington
9Wa32*	43/1 19/1	8/1 (15mm)	1				On west bank of Fishing Creek, one mile west of road leading south from Floral Hill
9Wa33*	28/1 25/1	3/3 5/3 29/1 (6mm) 19/1 (18mm) 30/1 (12mm)	5	1			Turner farm, on west bank of Fishing Creek and west side of road leading south and 2 miles from Floral Hill.
9Wa34							On north side of Pistol Creek, about 4 miles east of Tignall
9Wa35*		2-3/1 (rim has both cane puntations and rosettes)					Ed Anderson farm on west side of Old Augusta Road and west bank of Fishing Creek 4 miles NW of Metasville.
9Wa37							Robert and William Lindsey farm 2 miles W of Danburg Road on north bank of Fishing Creek, 1 mile NW of Washington
9Wa36	32/1 1/1 9/1 19/4						Callers farm, 1 mile W of Old Augusta Road and 2 miles from the junction of this road and Danburg road, 5 miles S of Danburg.

Sites with Mississippian Components in Ferguson's 1971 Coastal Plain Mississippian Survey

		Period of Occupation									Finishes Present in Assemblage													Mississippian Complicated Stamped				
Site Number	Catalog Numbers	Swift Creek	Napier	Wood stock	Etowah	Sav.	Early Lamar	Late Lamar	Proto historic	Unid. Miss	Burn ished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
38Ak7*	7p1					X?				X						X											1		
38Ak7*	85p2									X																1			
38Ak18	86p1									X																	1		
38Ak19*	87p1					X					3			X	X	28									3		5	2	
38Al1	22p2									X	1																1		2
38Al1	22p4									X															1		1		
38Al2	65p1					X										1												2	
38Al2	65p2					X					1	1											1				1	1	2
38Al2	65p6					X	X?									1											1		
38Al2	65p7/38AL2-7								X			1																	
38Al5	79p34									X						1	2												
38Al5	79p35					X										1													
38Al5	79p35					X										1	1										2		
38Al5	79p37					X	X									4	30								2		6	3	
38Al5	79p40					X					1						8									1	6	1	
38Al5	79p41					X										2										1	3	6	
38Al5	79p42					X										3									1		8	11	
38Al5	79p43					X										6									1		3	6	
38Al5	79p53									X						1									1				
38Al5	79p54					X										1											1		
38Al5	79p58					X																					3		
38Al5	79p60					X																							
38Al5	79p61									X																	1		
38Al5	79p62					X										1											2		
38Al5	79p66					X																							
38Al5	79p70					X																							
38Al5	79p72									X															1			2	
38Al5*	79p1					X																					1		
38Al5*	79p2									X																	2	1	
38Al5*	79p2									X						1													
38Al5*	79p3					X										2												1	
38Al5*	79p3					X					1																	1	
38Al5*	79p4									X						1													
38Al5*	79p9					X										2											1		
33Al5*	79p10					X										2	1										12		
38Al5*	79p11									X																	1		
38Al5*	79p12									X	1																2	1	
38Al5*	79p17									X						1													
38Al5*	79p21									X															1				
38Al5*	79p23					X																						1	
38Al5*	79p24									X																	1		
38Al5*	79p27					X								>50		17									1	2	4	8	
38Al5*	79p29									X																			
38Al5*	79p30					X																					2		
38Al5*	79p31									X						1											3		
38Al5*	79p32					X																							
38Al5*	79p68									X						2											1		
38Al5*	mics.									X																			
38Al5-1*	3p1					X					2			X		3	X								1		1		

Sites with Mississippian Components in Ferguson's 1971 Coastal Plain Mississippian Survey (continued)

Site Number	Design Motif Categories (# of category/# of sherds)				Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars				Comments
						Quartz	Meta	CPC	R&V	
38Ak7*										
38Ak7*								1		Silver Bluff area
38Ak18										
38Ak19*	19/1									
38Al1										
38Al1										
38Al2	24/1									
38Al2										
38Al2					2+3/1			1		
38Al2										Sherd has notched rim, hint of fold.
38Al5										
38Al5	18/1									
38Al5	19/1									
38Al5	43/1	29/1	19/1	18/1						
38Al5	18/1	19/1								
38Al5	19/1									
38Al5	19/2	18/1								
38Al5	4/4	48/5	18/2	19/1						
38Al5										
38Al5	19/1									
38Al5	18/1									
38Al5	18/1									
38Al5										
38Al5	18/1									
38Al5	18/1									
38Al5	19/1									
38Al5										
38Al5*	19/1									
38Al5*										
38Al5*										
38Al5*	18/1									
38Al5*	18/2									
38Al5*										
38Al5*	19/1									
38Al5*	19/1									
38Al5*										
38Al5*										
38Al5*										
38Al5*										
38Al5*	19/2									Sherd is extensively sooted and should be datable.
38Al5*										
38Al5*	37/1	19/1			2/1					
38Al5*	4/1									
38Al5*	18/1									
38Al5*										
38Al5*	19/1									Check stamped sherd is sooted and may be datable.
38Al5*										
38Al5*										
38Al5-1*	43/1	19/1						31		Total assemblage, points range in length from 21-40 mm

Sites with Mississippian Components in Ferguson's 1971 Coastal Plain Mississippian Survey (continued)

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Woodstock	Etowah	Sav.	Early Lamar	Late Lamar	Protohistoric	Unid. Miss	Finishes Present in Assemblage: Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
38AI5-2*	3p2					X					1			X		1									1		4		
38AI5-3	4p1					X					2																1		4
38AI5-4	4p2									X																		1	
38AI30	21a1									X																			
38AI47	54p3									X																	1		
38AI50	57p1									X																		1	
38AI50	57a2									X																			
38AI50	57p2									X								2											
38AI50*	57p3					X	X							>100		X	X			1	1 (3-line)								
38AI50	57p4									X						1													
38AI50	57p6								X/18th		4		1			1	5 (Santee)		1						3		1	4	
38AI50*	57p8									X?				X															
38AI51	58p1									X	1																		
38AI56*	63p1					X																					2		
38AI58	67p1					X										2									1		1		2
38Ha2	50p1/p2					X			X/18th		1																		
38Ha2	50p3									X																	1		
38Ha3	68p1									X																			
38Ja1	72p1/72p2								X																				1
9Sc2*	35p1									X			1																
no name	15a1									X																			

* = partial sample of large collection (Mississippian diagnostics only identified)

Sites with Mississippian Components in Ferguson's 1971 Coastal Plain Mississippian Survey (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars: Quartz	Meta	CPC	R&V	Comments
38AI15-2*	43/1						
38AI15-3	18/4 4/1 23/1						
38AI15-4							
38AI30					1		Johnson's Landing
38AI47							
38AI50							
38AI50					1		
38AI50							Fine incising may be Woodland.
38AI50*	29/1	30/1 (12mm)					
38AI50							
38AI50	19/1	2/1					Very unusual assemblage- most or all historic.
38AI50*							Cord marked assemblage, 1 sherd w/ incised rim & lip
38AI51							
38AI56*	25/1 19/1				1		
38AI58	18/1				1		
38Ha2	19/1 50/3 51/1 49/6 52/13 53/1	2/1 (one row)					Comp. stamp/check stamp looks Mississippian
38Ha2		2/1 (two rows)					
38Ha3	25/1						
38Ja1	49/1						
9Sc2*							
no name					1		Site on Creek Plantation, Allendale County

Sites with Mississippian Components in the Jasper County Geoarchaeological Project Survey Area

Site Number	Catalog Numbers	Period of Occupation: Swift Creek	Napier	Woodstock	Etowah	Sav.	Early Lamar	Late Lamar	Protohistoric	Unid. Miss	Finishes Present in Assemblage: Burnished	Other Plain	Corn Cob	X Cord	Par Cord	Check Stamp	Simple Stamp	Rect. Incised <2mm	Rect. Incised >2mm	Curv. Incised <2mm	Curv. Incised >2mm	Unid. sherds	Discs	Pipe Frags	Mississippian Complicated Stamped: Rectilinear < 2 mm	Rectilinear > 2 mm	Curvilinear < 2 mm	Curvilinear > 2 mm	Unid. C.S.
Site 1	n/a					X									17							1 37					1		
Site 5	n/a					X						7		12	8	9	4												1
Site 12	n/a									X		5				3	3					1							1
Site 13	n/a									X						6	1					5							
Site 15	n/a									X		23		7	3	6	3					21							
Site 16	n/a									X		12		11	4	6	11					29							
Site 17	n/a									X		21		11	9	4	4					15							
Site 18	n/a					X						28		115	44	1						82							
Site 19	n/a					X						5		22	6							12							1
Site 20	n/a									X		9		12	6	8						6					1		
Site 23	n/a					X						1		3	3	9	2					13							
Site 35	n/a						X					9			2	14										2		2	
Site 36	n/a						X									1										1			
Site 39	n/a					X										1													
Site 41	n/a						X																						
Site 43	n/a									X						25						16							
Site 44	n/a									X		4		8	7	9	5					8							
Site 45	n/a									X		9			1	8						6							
Site 46	n/a									X		12				8						3							
Site 54	n/a						X					9		3		1	1					6	1			1			2
Site 55	n/a								X																	1			

* = partial sample of large collection (probable or possible Mississippian diagnostics only reported)

Sites with Mississippian Components in the Jasper County Geoarchaeological Project Survey Area (continued)

Site Number	Design Motif Categories (# of category/# of sherds)	Rim Decorative Treatment Categories (# of category/# of sherds)	Mississippian Triangulars: Quartz	Meta	CPC	R&V	Comments
Site 1							
Site 5	25/1						
Site 12							
Site 13							
Site 15							
Site 16	19/1						
Site 17							
Site 18	19/1	15/1					
Site 19							
Site 20							
Site 23							
Site 35	29/1						
Site 36		29/1 (fragmentary)					
Site 39	24/1						
Site 41		2/1					
Site 43							
Site 44							
Site 45							
Site 46							
Site 54	29/1	3/1					
Site 55							Sherd may have a line block motif.

* = partial sample of large collection (Mississippian diagnostics only identified)

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