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SOUTHEASTERN ARCHAEOLOGICAL CONFERENCE

**ABSTRACTS OF THE
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ABSTRACTS OF SEAC ANNUAL MEETING 1983

ALEXANDER, Lawrence S (Alabama) ACCRETIONAL ,MOUNDS ALONG THE TUSCUMBIA RIVER During Spring 1983 an archaeological reconnaissance along the Tuscumbia River in northeast Mississippi covered approximately 700 acres and 40 miles of river channel. The field work was initiated by the U. S. Soil Conservation Service, Jackson, Mississippi. The survey areas and transects were upland basins adjacent to drainage divides and the Tuscumbia River active flood plain and segment of the first terrace edge to the Hatchie River confluence. Forty-two archaeological sites were located and evaluated. Represented components ranged from Middle Archaic through Late Woodland; very few Mississippian components were noted. Extensive stratified Middle and Late Archaic middens on erosional terrace remnants and along the edge of first terrace were the most salient sites noted. Cross sections of several of the Archaic sites indicated that they were alluviated stratified cultural deposits. The significant components, the geomorphic location, and the accretional alluviation of these sites are very similar to the "midden mounds" recently excavated along the adjacent upper Tombigbee River. From these comparisons several hypotheses regarding fluvial development and settlement can be generated.

ALTERMAN, M. (Columbia) PIEDMONT LATE ARCHAIC ALONG THE SAVANNAH RIVER VALLEY: A VIEW FROM THE RICHARD B. RUSSEL RESERVOIR
Abstract not submitted.

AMICK, Daniel S (Tennessee) GRAVEL STUDIES AS AN AID TO MODELING LITHIC RESOURCE DISTRIBUTIONS Geologists have been familiar with the study of gravel deposits as an aid to geomorphological investigations for several decades. Borrowing concepts and methods developed by geologists, a gravel study of the Duck River Basin (Middle Tennessee) is conducted. This study emphasizes quantifying lithic resource distributions within the region. General characteristics of gravel bars (including formation and movement), gravel sampling methods, and longitudinal downstream patterning are discussed and applied to Duck River gravels. Longitudinal downstream changes considered include: selective transport (sorting), lithologic composition, and abrasion/weathering. The results of the gravel study are integrated into a model of lithic resource distributions for the Duck River Basin. The potential of gravel studies to prehistoric lithic technology investigations is evaluated.

ANDERSON, David G. (Michigan) THE MISSISSIPPIAN IN SOUTH CAROLINA Unlike circumstances in most of the eastern United States, the late prehistoric occupations of South Carolina have remained largely unexamined. Prior to the 1970's, only a handful of excavations had focused on components of this period, with much of this work only briefly reported at best in the literature. While this situation has improved dramatically in recent years, due to the inception of several large-scale research projects, much of this research remains unpublished. Several basic trends

are emerging from recent research, however, which are summarized here. These include : (1) increasing evidence that Mississippian adaptations developed comparatively late in this portion of the southeastern Atlantic slope, probably after A.D. 1200; (2) the recognition of close similarities in many of the Mississippian systems occurring from eastern Georgia to southeastern North Carolina; (3) evidence that site locations throughout the region were severely constrained by local ecological factors, particularly arable soils; and (4) the positive identification of a number of specific sites and assemblages from the early European contact era, permitting increasing refined chronological control and direct use of ethnohistoric accounts.

ANTHONY, Ronald W (Carolina Archaeological Services) HEAVY EQUIPMENT AND FRAGILE REMAINS: A NON-TRADITIONAL APPROACH TO HISTORIC WELL EXCAVATION Data recovery at a low-status domestic occupation at Spring Grove Plantation in Berkeley County, South Carolina was conducted using a combination of manual and mechanical excavation techniques. This presentation focuses on the excavation methods employed during investigation of an outlined well at the site. Successful, safe, and timely completion of this undertaking was facilitated by the routine use of heavy equipment, around which a controlled excavation strategy was designed. This non-traditional procedure proved to be an efficient, expeditious, safe, and easily replicable approach to unlined well excavation. Advantages of this approach and its implementation are discussed.

ANUSKEWICZ, Richard (U.S. Army Corps of Engineers, Savannah District) UNDERWATER ARCHAEOLOGY BY BRAILLE: BLACKWATER HANDS-ON EVALUATION OF REMOTE SENSING DATA COLLECTED FROM A MAGNETOMETER SURVEY AT THE MILITARY OCEAN TERMINAL, SUNNY POINT, NORTH CAROLINA This paper will focus on how the Military Ocean Terminal, Sunny Point (MOTSU) North Carolina has complied with requisite cultural resource management responsibilities for the South Wharf channel and turning basin expansion project in accordance with Army Technical Manual 5-801-1, and the National Historic Preservation Act of 1966, as amended. In addition, this paper will discuss the state-of-the-art marine survey methods, techniques, and research strategies used to conduct the study. Also presented will be the developmental model for a ground truthing (diver hands-on) research design.

ANUSKEWICZ, Richard J (Army Corps of Engineers) SITE RECONSTRUCTION AND SURVEY METHODOLOGY IN A BLACKWATER ENVIRONMENT Historic shipwrecks are recorded in virtually every navigable waterway in the world including the oceans, freshwater lakes, major river systems, and streams. Approximately 80 to 90 percent of these shipwrecks lie in limited, poor visibility, or total blackwater environments. Most of the scientific shipwreck archaeology since the mid-1950's has been concentrated in the relatively shallow clearwater environment. In the past 25 to 30 years, many of these accessible and visible shipwreck sites have been studied and systematically excavated with standard underwater recovery techniques. These visible, shallow water

sites are fast becoming scarce. It seems appropriate to assume that in the near future underwater archaeologists may be forced to turn their energies and expand their resource base to the low visibility and/or total blackwater environment to continue their research. The focus of this paper will be on the development and field application of new scientific approaches to underwater survey methods and techniques in a total blackwater environment. Blackwater is defined as the total absence of light as a result of suspended particulates (organic or inorganic) in the water column. The archaeological problems in blackwater are fairly simple and straight forward. How can the archaeologist identify and describe salient portions of a shipwreck site in a blackwater environment? How can these scientists determine: (a) vessel's dimensions, (b) structural integrity of exposed features, and (c) vessel orientation. This paper will present detailed methodological approaches to conducting archaeological surveys in a blackwater environment. A blackwater survey model will be presented. This model will include the methodological reconstruction of a blackwater site by traditional remote sensing techniques (side-scan sonar, sub-bottom profile, and magnetometrics), the integration of newly developed marine magnetic computer graphics contouring programs, and three-dimensional grid element contour displays of site model bathymetric data.

AUTRY, William O, Jr. (Durham, NC) CACICAZGOS OF THE SOUTHERN APPALACHIANS DURING THE PROTOHISTORIC PERIOD: NEW INSIGHTS FROM SPANISH CHRONICLES Early Spanish explorers of the Southeast encountered a large number of indigenous peoples with considerable variability in sociopolitical organization. For various reasons--both as a result of the Spanish chronicles and the approaches of subsequent scholarly researchers-- this sociopolitical variability has been obscured or reduced to a single form, ususally the chiefdom. This classification of these societies disregards the biases and projections of the Spanish and the increasing amounts of archaeological data from the region that were unavailable to John Swanton and others. The Spanish were largely unfamiliar with various aspects of these societies, and consequently, they projected sociopolitical characteristics of their own societal organization as well as that of the societies of South America (Inca) and Mexico (Mexicana), foreign terms and concepts (e.g., cacique, principales, etc.) that have not been evaluated in this context, and a Spanish conception of coercive power and/or law onto these indigenous societies. Later scholars have uncritically accepted these uses without detailed examination of the 16th century Spanish concepts and principles that underlie these terms and projections. Both ethnohistoric sources (Spanish chronicles) and later researches, as well as archaeological data from northwest Georgia, east Tennessee, western North Carolina, and northeastern Alabama, will be employed to explore the sociopolitical variability of indegenous groups in the Southern Applachians in the 15th and 16th centuries. Additionally, Spanish concepts, terms, and projections will be evaluated and defined on the basis of the wider use and understanding of those terms as employed in 16th

century Spanish America.

BAKER, C Michael (Foundation for North Carolina Archaeology) PREHISTORY OF THE UPPER YADKIN RIVER BASIN: QUESTIONS AND DIRECTIONS The archaeology and prehistory of the Upper Yadkin River Basin are summarized. A variety of research problems peculiar to this foothills region bounding the Piedmont and the Appalachian Mountains of North Carolina is discussed, and directions for their study are indicated.

BASS, Quentin R (Tennessee) RITUAL IN MISSISSIPPIAN POLITIES IN THE LOWER TENNESSEE RIVER VALLEY Analysis of six sites representing three polities of the Mississippian Period in the Lower Tennessee River Valley demonstrates the evolution of their socio-political structures from systems based upon ascription to systems based upon achievement. Both status systems are represented and defined by distinctive mortuary and settlement patterns which display institutionalized ritualistic behavior. In these contexts, "ancestor worship" and the Southern Cult are interpreted as primarily ritual manifestations or symbols and badges of these socio-political structures.

BEAVERS, Richard C (New Orleans) HISTORICAL ARCHAEOLOGY AT ACADIA PLANTATION, THIBODAUX, LOUISIANA: A PRELIMINARY REPORT Archaeological investigations were conducted at Acadia Plantation during the spring and summer of 1983. The purpose of these investigations were to establish the presence of significant remains for a Determination of Eligibility and nomination to the National Register. Acadia Plantation was founded ca. 1820 by the Bowie family by consolidating a series of small acadian farmsteads. The Bowie's constructed a sugar mill on the site and the plantation has remained in sugar production to the present. During the excavations three areas of the plantation were tested: a ca. 1850-1885 sugar mill, a ca. 1850 slave/tenant cabin, and two ca. 1800-1830 farmsteads. At all three locations the testing indicated the presence of in-situ subsurface features related to the structures.

BENSE, Judith A (West Florida) SETTLEMENT PATTERN, CLIMATE, AND MARINE ECOSYSTEM EVOLUTION CORRELATIONS IN THE ESCAMBIA BAY DRAINAGE SYSTEM IN NORTHWEST FLORIDA Preliminary results of the first season of fieldwork in the Escambia Bay Drainage system of extreme northwest Florida has produced information which indicates distinct changes in settlement patterns have occurred. Settlements of Early and Middle Archaic are present in the floodplain and tributaries of the Escambia River. A shift in site locations from the floodplain and tributaries to the lower bays near the Gulf appears to have occurred during the Late Archaic/Gulf Formational Stage. This is likely correlated with the hot/dry Altithermal conditions and the evolution of marine ecosystem resources which occurred in the Pensacola Bay system at the same time. A second shift of settlements back into the river valley floodplain, delta and tributaries occurred during the Late Woodland/ Mississippian Stages. The re-use of this area differs from the Archaic pattern, however. The likely causal

factors of site location strategy during this period is likely population pressure, more mesic conditions, and perhaps horticulture. The hypotheses will be tested and further developed in this long term research project.

BENSON, Donna L., and Curtis, Phillip (Chagrin Falls, Ohio) THE STEPHENSON POTTERY WORKS, 1790-1880: PLEASANT BOTTONS (ADAMS COUNTY) OHIO John Stephenson began the pottery works in or before 1790. Based on German and Moravian analogs, he produced high quality utilitarian wares, both for local consumption and for export to New Orleans. Redware, red stoneware and coarse earthenwares were manufactured. By 1800, tens of thousands of gallons of wares per year were produced. His grandson, David Stevenson, assumed control of the works in 1827. Production shifted to slip and salt-glazed stonewares, and yellow wares. During both periods the pottery produced was tightly integrated into the social, political and economic structure of the community. From an economic viewpoint, the Stephenson pottery works helped establish a demand for Ohio wares. It paved the way for later, larger, pottery works at East Liverpool, Akron, and elsewhere.

BERGSTRESSER, Jack (Alabama at Birmingham) ALEXANDER CERAMICS AND THE KELLOGG FOCUS IN THE UPPER-MIDDLE COOSA VALLEY It is generally assumed that early Woodland ceramics do not occur in Alabama, that during that early time period the only pottery types being produced were Late Gulf Formational Alexander ceramics. When fabric marked sherds of the Woodland stage are found they are generally assigned to middle Woodland phases. But sites containing both Alexander and Dunlap Fabric Marked sherds are found in northeastern regions of the state. This paper will explore the hypothesis, suggested by evidence from two sites in the upper-middle Coosa Valley, that, in some cases, these Alexander and Dunlap ceramics were contemporaneous, indicating early Woodland origins for the Dunlap sherds.

BLANTON, Dennis (Brown) LITHIC RAW MATERIAL PROCUREMENT AND USE DURING THE MORROW MOUNTAIN PHASE IN SOUTH CAROLINA This paper is concerned with clarifying patterns of lithic procurement and use during the Morrow Mountain phase in South Carolina and with demonstrating the utility of initiating lithic studies with an investigation of procurement and use patterns. It is established that the features characterizing the Morrow Mountain procurement and use system are 1) localized procurement and use, 2) a low degree of specificity, 3) a low range of dispersal, 4) little concern with extended curation of tools, and 5) lessened concern with raw material quality. Additionally, it is suggested that these patterns were established in response to modifications in overall adaptive systems necessitated by changes in the natural environment during the early Holocene.

BOYD, C Clifford; Schroedl, Gerald F; and Davis, R P Stephen, Jr., (Tennessee) EARLY MISSISSIPPIAN CULTURAL DEVELOPMENT AT MARTIN FARM IN THE LITTLE TENNESSEE RIVER VALLEY The Martin Farm site in the Little Tennessee River Valley contains two Early

Mississippian components representing the transition to a fully developed Mississippian lifeway. The Martin Farm or Mississippian I component dates to A.D. 900-100 while the Hiwassee Island or Mississippian II component dates to A.D. 1000-1200. Except for ceramic assemblage composition, the lithic, botanical and faunal remains from the two components are nearly identical and both occupations share platform mounds, similar structure types and village facilities. The ceramic assemblages are distinguished primarily by the combination of limestone and shell tempered types in particular contexts. At Martin Farm, the Mississippian cultural pattern developed rapidly, and comparative data from 41 additional sites show similar development elsewhere in the Little Tennessee River Valley. Site locations suggest that the change from Mississippian I to Mississippian II was the result of agricultural intensification.

BRAIN, Jeffrey P (Harvard) TIME-SPACE PERSPECTIVES ON SOME LATER PREHISTORIC ARTIFACT STYLES IN THE SOUTHEASTERN UNITED STATES A factor which frequently has impeded an adequate understanding of late prehistoric ritual art and artifacts in the chronology of appearance and distribution. This paper discusses recent data contributing to the clarification of this issue.

BRALEY, C (SE Archaeology Services) THE FORT RUCKER SURVEY: CULTURAL DEVELOPMENTS IN SOUTHEAST ALABAMA Two hundred fifty three field sites were discovered during a stratified survey of 1820 hectares, or ten percent of Fort Rucker, Alabama. The heaviest period of use occurred during the Late Archaic and Early Woodland Periods. Late Woodland and Mississippian Period sites were rarely encountered. Although located close to the Fort Walton culture zone, the Mississippian Period sites lack diagnostic ceramic types. Small farmsteads characterized historic period settlement and over 400 structures are pinpointed on early twentieth century maps. A predictive model was formulated using environmental characteristics of site and non-site locations. Thirty-two discriminant models were tested and verified, with the final model calibrated to an accuracy of 81 percent.

BROOKS, Mark J (Florida) and Colquhoun, Donald; Brown, Janice; and Stone, Peter (South Carolina) SEA LEVEL CHANGE, ESTUARINE DEVELOPMENT AND TEMPORAL VARIABILITY IN WOODLAND PERIOD SUBSISTENCE-SETTLEMENT PATTERNING ON THE LOWER COASTAL PLAIN OF SOUTH CAROLINA Geoarchaeological data and arguments are presented suggesting that observed changes in Woodland period subsistence-settlement patterning on the Lower Coastal Plain of South Carolina can be largely attributed to the direct and indirect effects of sea level change (monitored at an estuary-specific level) on the structure of the subsistence resource base. These causal relationships, while most directly observable in the estuaries, have also been documented in upland, interriverine areas. In contrast with the early Holocene, estuarine development and expansion after about 5000 B.P. correlates with a period of relative sea level stability. This relative sea level stability is seen as being a necessary

prerequisite for the establishment of fish and shellfish communities available in sufficient densities for efficient procurement by prehistoric populations. While it is recognized that general trends in Woodland subsistence-settlement patterning could be attributed to purely biocultural processes, only sea level change and associated estuarine development can account for the specific temporal variability in patterning observed.

BROWN, C. Michael (North Carolina) PREHISTORY OF THE UPPER YADKIN RIVER BASIN: QUESTIONS AND DIRECTIONS The archaeology and prehistory of the Upper Yadkin River Basin are summarized. A variety of research problems peculiar to this foothills region bounding the Piedmont and the Appalachian Mountains of North Carolina is discussed, and directions for their study are indicated.

BROWN, Ian W (Harvard) THE EXCAVATION OF PROTOHISTORIC HISTORIC SITES IN THE NATCHEZ BLUFFS REGION, MISSISSIPPI: AN UPDATE In 1981 and 1982 the Lower Mississippi Survey of Peabody Museum, Harvard University conducted archaeological excavations in the Natchez Bluffs region, Mississippi. The project, under the overall direction of Stephen Williams, was designed to investigate the relations between the Natchez Indians and the various European nations in the early eighteenth century. Sociocultural change, as reflected in material remains, has been a primary focus of the project. In addition to the discovery of material acculturation of the indigenous Natchez people of Plaquemine stock, evidence has come to light for the adoption of remnant Indian groups of the Mississippian cultural tradition.

BROWN, James A (Northwestern) RANK AND WARFARE IN MISSISSIPPIAN PERIOD ART Abstract not submitted.

CAMPBELL, L. Janice, Thomas, Prentice M., and Weed, Carol S. (New World Research) THE RIGHT STUFF: DETERMINING FACTORS IN SITE LOCATION ON MILITARY RESERVATIONS In recent years, Military Reservations throughout the Southeast have been developing programs for the management of cultural resources. New World Research, Inc. has had the opportunity to be a part of the early stages of cultural resource management planning on several of the Reservations, including Fort Gordon, Redstone Arsenal, Fort Polk, Fort Benning, and most recently, Elgin Air Force Base. The development and refinement of predictive models have been a major component of the work conducted at each of the Reservations. From the work, which has spanned a period of a little over three years, we have witnessed dramatic changes in our approach, some of which were out of necessity to arrive at a management plan and others of which resulted from our increased experience and sophistication. Some of the approaches utilized have relied on intuitive modelling (or the more traditional types of locational models) as well as more state-of-the-art models based on the application of multivariate statistics. These endeavors have provided a basis for constant refinement of techniques and the implementation of new approaches utilized by colleagues. This paper traces the changes in our approach to predictive modelling,

with specific attention to the underlying reasons for change, the potential pitfalls in modelling at Military Reservations, and an evaluation of the success we have had.

CANOOTS, Valetta (Southern Illinois) THE EFFECTS OF BOUNDARY CONDITIONS ON THE ARCHAEOLOGICAL RECORD: AN EXAMPLE FROM SOUTHERN ILLINOIS An approach using the concept of boundaries develops the idea that spatial distributions of human behavioral traces in the archaeological record are not simply consequences of environmental gradations but relate to discontinuous mechanisms of social boundary constraint and maintenance. Boundary phenomena are dynamic. Observations which measure these phenomena at different temporal and spatial scales with different cultural media realize different dynamics. In archaeological analyses, typologies help identify, but may also impose boundaries. Existing typologies can be used to demonstrate human behavioral discontinuities, but at such a broad level of generalization as to be uninformative about organizational variability. Questions about organizational variability in Southern Illinois cannot be pursued with data on typological distributions or distributional boundaries, for even though the marginality or conservatism which has been historically derived from type distributions may be real enough, current typologies mask a number of different relationships.

CASTILLE, George (Coastal Environments, Inc.) SETTLEMENT PATTERN MODELS FOR LOUISIANA SUGAR PLANTATIONS Louisiana sugar plantations of the nineteenth century displayed distinctive settlement patterns not commonly found in other areas of the plantation South. The spatial organization of sugar plantations took on three major forms which were developed as a result of the cultural background of the plantation developer and the cultural and physical limitations encountered along flood prone natural levees of south Louisiana. Models are depicted which demonstrate the changes in spatial organization for major structures on the plantations from the late eighteenth century through the mid twentieth century. Models are also depicted for the modification of plantation landscape into urban landscape and for the formation of plantations where sugar was not the principal cash crop.

CHARLES, Tommy and MICHIE, James L (SC Institute of Archaeology) PALEO-INDIAN OCCUPATION IN SOUTH CAROLINA: AN UPDATE Abstract not submitted.

CLAASSEN, Cheryl (Appalachian State) SHELLFISHING SEASONS IN THE PREHISTORIC SE US This paper is a summation of the results of seasonality studies performed to date in the Southeast on 59 freshwater and marine sites. The data uniformly agree on a late spring-summer collecting season for freshwater sites in the Ohio Valley and marine sites in Texas and a winter-early spring collecting season for the Southern Atlantic coast, North Carolina to Florida. These results are discussed in light of several postulated subsistence round present in the literature and points out differences in attitude toward shellfish between hunter-

gatherers and horticulturalists.

CRIDLEBAUGH, Patricia A (Tennessee) PALEOECOLOGICAL EVIDENCE OF LATE HOLOCENE NATURAL AND ANTHROPOGENIC INFLUENCES UPON THE VEGETATION OF THE LOWER LITTLE TENNESSEE RIVER VALLEY Paleobotanical remains recovered from the lower Little Tennessee River Valley include carbonized material from Early Archaic through historic Cherokee period archaeological sites and fossil pollen, seeds, and charcoal particles from ponds located less than 4 km from major archaeological sites. Sediment cores from Tuskegee Pond (situated on the T3) and Black Pond (upland) span the past 3,000 years and provide paleoecological data for fine-scale interpretation of local natural and anthropogenic events. Palynological data details vegetation changes and the effects of man-land interaction through time. Pollen from the two ponds indicates a temporal rise in disturbance favored taxa such as pine (Pinus sp.), beech/hornbeam (Carpinus/Ostrya type), and ragweed (Ambrosia). Dramatic implications of land-use strategies are indicated by a continuous record of Middle Woodland period through recent maize (Zea mays) pollen from Tuskegee Pond. This evidence for maize agriculture on the higher terraces is the first documentation that prehistoric maize agriculture in the Southeast was not strictly confined to bottomland habitats. Palynological evidence of four major ambrosia rises during the Woodland, Mississippian, and historic Cherokee periods as well as the advent of Euro-American settlement in the valley is indicative of intensive prehistoric land use. This, moreover, negates the common precept of a single Late Holocene ambrosia rise in conjunction with Euro-American settlement.

CRITES, Gary D (Tennessee) ANTHROPOGENIC AND ECOLOGICAL FACTORS IN THE PREHISTORIC DISTRIBUTION OF PLANTS Avoidance of naive interpretation of archaeologically derived plant materials necessitates a systemic perspective which recognizes the paleoethnobotanical record as an artifact of cultural and biophysical subsystems which are interactive and mutually affective. The availability and distribution of plant taxa in prehistoric contexts are predicted upon local and regional environmental dynamics, patterned human activities within the given environment, and the differential potential of various plant taxa for successfully competing for space.

CURREN, Cailup (AlabamaTombigbee Regional Commission) PROTOHISTORIC RESEARCH IN CENTRAL ALABAMA Survey and excavation during several seasons at Protohistoric sites in central Alabama has led to a much better understanding of the Protohistoric Period. Three phases in this period (Alabama River Phase, Moundville IV Phase, Summerville IV Phase) have been described previously by several authors. Recently a series of 10 radiocarbon dates has aided us in more closely defining the occupation period of the central Alabama sites (circa A.D. 1550-1700). The sites studied were primarily occupied during the 1600's. This was after the Spanish expeditions of Soto and Luna had passed through the region. Dramatic changes had taken place in native American groups in central Alabama by the 1600's. It

is in debate as to how much of this change originated from within native American groups or from outside sources such as the Spanish and the disease and disruption which they brought. One fact is evident, however. The Spanish described chiefdoms which included highly organized, prosperous groups of peoples in Alabama who built pyramidal mounds for the elite. The native groups in central Alabama in the 1600's had changed drastically in the many ways from their ancestors earlier in the Mississippian Period. They had ceased to build mounds. Many times they had moved off the mound sites. Exotic grave goods had virtually ceased to be placed with burials, probably indicating a breakdown in widespread trade networks. Bundle burials including urn burials were the preferred burial type rather than extended burials as earlier in the Mississippian Period. Based on studies of skeletal remains it now seems that human health conditions had also declined. As in other areas of eastern North America the chiefdoms of central Alabama were probably in a state of change but evidence points to dramatic changes after the Spanish expeditions of the 1500's.

DANIEL, Randy; Scarry, John; and Wisenbaker Mike (Tallahassee, Florida) COMPARATIVE SPATIAL ANALYSES AT HARNEY FLATS The Harney Flats site is a large (ca. 4 acres) Paleo Indian site near Tampa, Florida. During 1981-1982 the senior author directed excavations of approximately 900 square meters of the site. These excavations of 283 square meters, 380 square meters, and 196 square meters. Because of the poor preservation in the sandy soils of Hillsborough County, no features or organic material were found. This situation increased the importance of extracting interpretable data from the spatial distribution of stone tools and debitage. This paper summarizes results of several different methods of spatial analysis carried out on the Harney Flats data.

DeFRANCE, Susan and Kelly, David B (Coastal Environments, Inc.) PRELIMINARY FINDINGS OF ZOOARCHAEOLOGICAL RESEARCH IN THE LOWER GARDEN DISTRICT OF NEW ORLEANS: THE GREATER NEW ORLEANS BRIDGE NO. 2 PROJECT A recent program of excavations in New Orleans' Lower Garden District has produced a large quantity of zooarchaeological data from historic sites representing a variety of time periods, ethnic groups, economic classes and functional types. The research was conducted by Coastal Environments, Inc. as part of a cultural resources investigation prior to the construction of the Greater New Orleans Bridge No. 2. A total of 33 properties were tested during the project, and seven were selected for more extensive excavation. The fieldwork recorded over 200 features of which 11 yielded undisturbed, tightly dated deposits containing sufficient faunal remains to warrant detailed zooarchaeological analysis. These 11 features include privies and springhouses which date from the 1830s to the early 1900s and are associated with a variety of ethnic and socioeconomic groups. The problem topics addressed by this research are discussed, and the preliminary findings of the study are presented.

DePRATTER, Chester B (Georgia) SCALPING AND DECAPITATION IN THE

SOUTHEASTERN UNITED STATES: AN ETHNOHISTORIC AND ICONOGRAPHIC SURVEY Although only a limited number of human skulls from archaeological contexts exhibit evidence of scalping, severed heads are well represented as burial associations. Ethnohistoric sources provide abundant information concerning techniques of and reasons for both scalping and decapitation. Combination of the ethnohistoric data with that contained in Southeastern Indian representational art provides additional insights into the role of these practices in warfare and religious ritual.

DONAHUE, J (Pittsburgh) TEMPER TYPES IN ST. CATHERINES POTTERY Fifty sherds from St. Catherines Island were analyzed by X-ray diffraction for bulk mineralogy and by petrographic microscope for mineralogy and grain size of temper. Samples cover a complete cultural sequence from St. Simons (jca. 2200-1100 B.C.) through Altamaha (A.D. 1500-1700). X-ray diffraction shows that the paste consists primarily of quartz and the clay mineral kaolinite. The preservation of the mineral kaolinite suggests that firing temperatures did not exceed 500 degrees. Also present are minor amounts of feldspar, hematite, calcite and heavy minerals. Petrographic examination by microscope shows that the temper consists of silt to sand-sized quartz, feldspar, and rare heavy minerals. Mean grain size ranges from 0.065 mm. to a maximum of 0.6 mm. The size range varies from less than 0.01 mm. to a maximum of 3.2 mm. Grog temper is also present and appears to consist of crushed pottery. The presence of plant fibers cannot be identified in thin section by a microscope. Tentative conclusions are that the paste source consists of island clays with included fine grained quartz, feldspar, and heavy minerals. Coarser grained quartz, feldspar, and pottery fragments were added as additional temper in many cases. Each cultural phase appears to have its own characteristic fingerprint in terms of temper size distribution. Thus St. Simons and St. Catherines pottery have a fine grained temper (mean = 0.07 mm. to 0.12 mm.) with a narrow size range. In contrast, Irene pottery has a coarse grained temper (mean = 0.25 mm. to 0.43 mm.)

DRUCKER, Lesley M (Carolina Archaeological Services) COASTAL SUBSISTENCE DURING THE EARLY WOODLAND PERIOD IN SOUTH CAROLINA: A VIEW FROM THE MINIM ISLAND SITE, GEORGETOWN COUNTY Stratified zooarchaeological and ceramic distributions, along with a study of the tool assemblage within the Minim Island shell midden site (Atlantic Intracoastal Waterway) are presented in an interpretation of localized Early Woodland subsistence along the Carolina littoral sector. Data from this terrestrial marsh site suggest that oysters were added to the subsistence base during the Deptford phase, ca 150 A.D., but were quite rare during the preceding Thom's Creek and Refuge phases. Seasonality is indicated rather than extended occupation of the site, with general abandonment after the Deptford phase. Three radiocarbon dates were derived, bracketing the occupation between ca. 1000 B.C. and 200 A.D.

DUNN, Mary E. (Cincinnati) DO YOU CONSIDER PLANT REMAINS ARTIFACTS? How objects are viewed determines how they are

handled and interpreted. The literal definition of artifacts as any objects made by man, precludes plant remains which historically, have not been part of the main body of archaeological data. However, if artifacts are viewed in the broader sense of all items comprising material culture, then plant remains should be incorporated into recovery and interpretation with the same rigorous treatment given other artifacts. The purposes and goals of the symposium "Plant Remains as Artifacts" will be outlined considering this perspective.

ESPENSHADE, Christopher T (Florida) SAVANNAH PROBLEMS AND ALACHUA INTERPRETATIONS: CERAMIC EVIDENCE FROM THE NORTHEAST FLORIDA COAST The pottery recovered from two shell midden sites near Jacksonville, Florida, was subjected to typological analysis. Although pottery from such coastal sites has normally been labeled "Savannah", the type descriptions of the inland Alachua Tradition were also considered. Based on the aplastics, the cord-marked dimensions, and the minority types, it is argued that the ceramics from these sites are an Alachua assemblage under minor coastal influences. The implied coastal/inland seasonal movement is discussed relative to the widely accepted Coastal Culture concept.

FARLEY, James A (Arkansas Archaeological Survey) DATA STRUCTURING AND THE AUTOMATED MANAGEMENT OF BIOARCHAEOLOGICAL DATA: A METHODOLOGICAL FRAMEWORK FOR IMPLEMENTING STRATEGIES OF REGIONAL ANALYSIS IN BIOARCHAEOLOGY A multistep program for the development of a computerized system to manage and investigate bioarchaeological data is presented. The structural characteristics and complexity of bioarchaeological data are examined to identify the minimal units of analysis which must be maintained between dimensions of bioarchaeological import when conducting general types of analyses. The linear nature of the relationship between the preliminary organization of data and the effectiveness of any subsequent analysis is emphasized. A database management framework incorporating a well conceived record and file structure is presented as the most effective means to manage, organize and manipulate the diverse data relationships which exist between variables representing the biological and archaeological dimensions of bioarchaeological data sets.

FAULKNER, Charles H (Tennessee) MUD GLYPH CAVE: MISSISSIPPIAN RITUAL ART IN TENNESSEE Drawings on the mud-covered walls of an East Tennessee cave have been identified as the artwork of Mississippian Indians who visited this sanctuary about 800 years ago. These drawings, called "mud glyphs" because of their similarity to certain petroglyphs found in the southeastern United States, include symbols such as the weeping eye, zoomorphic drawings including a woodpecker and the horned serpent, and the "eagle warrior" anthropomorphic representation. While such symbols and motifs have been found on Mississippian shell and copper artifacts, they have never been found before in such a "free form" and in such numbers since thousands of superimposed elements occur on the walls of this cave. This

paper describes the major glyph categories and their setting, presents evidence for their role in ritual activity in the cave in particular and in the Mississippian culture in general, and explores the relationship of the glyphs to the religious iconography of historic Southeastern Indians.

FRIEDLANDER, Amy (Soil Systems, Inc.) PLANTATION SETTLEMENT PATTERNS IN THE JAMES RIVER VALLEY, 1611-1860: IMPLICATIONS OF HISTORICAL RESEARCH The relevance of historical documents in plantation archaeology is demonstrated through a discussion of selected plantation sites located north of the James River in Virginia. Specifically, six sites in Henrico county provided a rare opportunity for extensive historical research in conjunction with the archaeological investigation. A number of historical questions are addressed and their implications are discussed.

GARRISON, Ervan G and Baker, James G (Texas A & M) and Thomas, David H (American Museum of Natural History) MAGNETIC PROSPECTION AND THE DISCOVERY OF SANTA CATALINA de GUALE In 1980, magnetometer survey at the suspected site of Santa Catalina de Guale was begun. The initial survey covered an area of 10,000 square meters, and the results were greatly enhanced by the use of several computer graphic formats. These computer-generated maps revealed a high density of magnetic anomalies ranging from single, isolated point sources to broad-scale anomalies covering several square meters. Initial test excavations at the three primary anomalies turned up the mission well, an apparent residential structure and, most importantly, the church itself. Subsequent magnetometer surveys conducted in adjacent areas have covered an additional 90,000 square meters.

GIBSON, Jon L (Southwestern Louisiana) THE POVERTY POINT MAPPING PROJECT Test excavations were carried out in concert with satellite positioned aerial photogrammetric cartography at the Poverty Point site in 1983. The work was designed to fulfill two major goals: a) to establish a permanent grid system and to provide an accurate map of the entire site and b) to elucidate town growth in the context of the pristine rise of urbanism and complex society. In the latter context, discoveries and preliminary interpretations suggest that Poverty Point was a lake-side development, that enormous land-leveling preceded embankment building, that further outward expansion was planned but never completed, and that several earthworks long thought to be of historic origin were really constructed by Poverty Point engineers.

GOIN, Coleman J. Jr (Florida) HISTORICAL ARCHAEOLOGY AT THE THOMAS KING PLANTATION SITE This paper gives a description of the Thomas King Plantation Site, 9 Cam 172, and the material culture recovered during the Phase III mitigation excavation. Ceramics, glass and metal artifacts will be addressed. Intra-site and inter-site comparisons will be briefly discussed.

GOODYEAR, Albert C (South Carolina) A REVIEW AND SYNTHESIS OF EARLY ARCHAIC RESEARCH IN SOUTH CAROLINA Like most prehistoric

time periods in South Carolina, the Early Archaic has been identified and interpreted largely from information developed in adjacent states. The conduct of surveys and excavations within the last decade have changed this situation considerably. This paper defines the Early Archaic period in South Carolina in chronological and technological terms, and presents current views of settlement models. Future emphasis in research problems and strategies are also offered.

GRESHAM, Thomas H. (SE Archaeological Services) KNOWN CULTURAL RESOURCES SITE INVENTORY: AN EXAMPLE At the request of the U.S. Army, Southeastern Wildlife Services conducted an inventory of all known cultural resources in Fort Benning, Georgia, and Alabama. The expressed purpose of the inventory was to map, describe and evaluate all sites on the fort so that non-archaeological personnel could effectively manage the cultural resources present. In addition to being a management tool, the inventory is also a concise, yet thorough data bank for professional researchers. The inventory consists of a five volume compilation of data on over 2000 sites and an introductory volume which contains a guide to source material and to the inventory itself. The goals, methods and results of the compilation are discussed and evaluated. The most significant point made is that by defining "known site" broadly to include localities where historic structures are indicated on various nineteenth and twentieth century maps the inventory expanded from about 400 sites to over 2000. The inclusion of greatly differing types of cultural resources required the use of several formats to present the data.

GRIFFIN, James B (Michigan) THE THREE M'S OF MARIETTA: MULTIPLE OCCUPATIONS AT THE MOUTH OF THE MUSKINGUM For many years the Marietta earthworks were regarded as Hopewell. Recently the eastern one of the three has been called Adena. This has been clear since at least 1950, and that there is reason to believe there was a Fort Ancient occupation as well.

GYLLENHAAL-DAVIS, Charlotte; Callahagn, James; Merewether, Jamie; and Smith, C Earle Jr. (Alabama) MULTIVARIATE ANALYSIS OF ARCHAEOLOGICAL MAIZE COLLECTIONS: A METHOD AND A PERUVIAN EXAMPLE Approximately 1200 maize cobs and fragments were recovered from midden in three Early Horizon sites in the Casma Valley of Peru, excavated by Sheila and Thomas Pozorski. Artifact assemblages and subsistence analysis suggest the occupations at the three sites overlapped. Multivariate analysis was used to determine whether more than one maize variety was present on each site, and whether the types of maize used on all three sites differed. Variable selection and measurement techniques will be explained. Principal components analysis was used initially to separate the maize from each site into groups or types. These groups were refined using discriminant analysis. Cobs of all varieties from each site were used together in a discriminant analysis to determine whether maize types on all three sites were similar or different. The utility of these techniques in classification of large archaeological maize collections will be discussed.

HAIKEY, Larry (Creek Nation East of the Mississippi) NATIVE AMERICAN PARTICIPATION IN SOUTHEASTERN ARCHAEOLOGY Abstract not submitted.

HALE, H Stephen (Florida) INTERPRETATION OF A POLLEN CORE FROM HONTOON ISLAND, A SUBMENGED SHELL MIDDEN ON THE ST. JOHN'S RIVER, FLORIDA Comparisons between preserved plant and food remains from a peat deposit peripheral to the shell midden and pollen frequencies will be made. Evidence for the collection and transport of certain food items to that part of the archaeological site will be discussed as well as differences between the prehistoric and present plant communities.

HALL, Robert L (Illinois at Chicago) ON THE ANTIQUITY OF THE BELIEFS AND MYTHS UNDERLYING MISSISSIPPIAN SYMBOLISM One of the long-standing issues in American prehistory has been the relative importance of indigenous developments, as against Mesoamerican or Central American influences, in the evolution of the high cultures of the Mississippi Period in the eastern United States. Diffusion from Mexico has been seen in the temple-plaza pattern of town planning, for instance, and in certain themes in the Southeastern Ceremonial Complex. This paper explores, in particular, the contributions to Mississippian symbolism which would have been shared by both Mississippians and Mesoamericans by virtue of the availability to each of an ancient body of beliefs and myths predating the formative developments in temperate and tropical America. An effort is made to show how variations in symbolic representations can be used to trace later contacts, such as diffusion from Mesoamerica, and to distinguish these from those similarities which derive mainly from a shared heritage. Special attention is given to the "eye-in-hand" motif as found in the Southeastern Ceremonial Complex and in Mesoamerican codices, to variations found in Adena and Hopewell, and to prehistoric and historic associations which relate the motif to the idea of an imagined opening in the palm of the hand through which the soul or various forms of power may pass, to the hand as an earth symbol and the eye as a symbolic earth opening, to the eye-hand combination as a protective device (as spirit trap), and to the eye-hand combination as a symbol associated with the underworld, the night sun (dead or underworld sun), the "evening star" phase of the planet Venus, to the guardian of the entrance to the land of souls, and to symbolic world centers.

HALLY, David (Georgia) ARCHAEOLOGICAL CONTEXTS AND INTERPRETATIONS OF PLANT REMAINS Paleontologists and paleobotanists face a similar problem; how to identify and measure the biases produced in their fossil samples by depositional and post-depositional processes. Paleontologists have dealt with this problem for over 40 years through the discipline of taphonomy, but paleobotanists have only just begun to realize that the problem even exists. In this paper, I argue that there is a critical need for a systematic body of theory concerning the processes whereby plant parts enter the archaeological record and are preserved. Toward this end,

several processes that affect plant preservation are discussed and suggestions are made for further investigation of the problem.

HANSON, Glen T. and White, John W (South Carolina) THE LATE ARCHAIC PERIOD IN SOUTH CAROLINA :CHRONOLOGICAL,TECHNOLOGICAL AND SETTLEMENT CRITERIA The Late Archaic Period is examined using a comparative approach on all published and a sample of unpublished information from all physiographic provinces of the state. Two specific goals are addressed: the establishment of an operational definition for the Late Archaic and the formulation of a general model of Late Archaic adaptive systems. The review of existing data concentrates on chronology, technology, and settlement in order to delimit our current understanding of the Late Archaic. The model of adaptive systems concentrates on techno-functional assemblage characteristics and locational information in light of general hunter-gatherer theory.

HARMON, Michael A (South Carolina) CHEROKEE ACCULTURATION IN NORTHWESTERN SOUTH CAROLINA Archaeological data from protohistoric Cherokee sites in northwestern South Carolina have been used in conjunction with historical documents and archival records, to study aboriginal utilization of European material culture. Emphasis has been placed on intra and inter-site artifact assemblages in an attempt to formulate an artifact pattern that is generally characteristic of contact period Indian occupations. This pattern has been contrasted with other artifact patterns that characterize European occupations during the colonial period, through a study of relative differences in artifact types, ranges and percentages. The paper will also include a discussion of the cultural factors underlying this perceived pattern and its validity as an indicator of cultural contact and change. The value of this pattern lies in its usefulness as an aid for identifying non-documented contact period sites, especially at the reconnaissance and survey stages of study. This pattern should also prove useful in studying sites with disturbed contextual relationships.

HATCHER, Eddie M (Birmingham, Alabama) PALEOBOTANICAL REMAINS FROM MIDDEN DEPOSITS: IMPLICATIONS FOR GATHERING STRATEGIES IN AN AGRICULTURAL BASED ECONOMY The role of plants in the transition of pre-Columbian societies from migratory hunting and gathering economies is often explained whereby a few domesticated plants, mainly corn, gradually supplemented and eventually subordinated wild plant foods in the economic base. The paleobotanical record from sites in Alabama indicate that domesticated plants, principally corn, appeared in small quantities in Woodland sites and increased to a much larger portion of plant remains from Mississippian sites. Wild plants represented a sizable quantity of recovered plant remains from sites of both periods with hickory nutshell occurring in larger quantities than any other plant type including corn. Although the cultivation of corn and to a lesser extent, beans and squash, provided a dependable food supply that allowed for the development of settled villages with complex, stratified societies, the paleobotanical record shows a

continued reliance upon a wide variety of wild plant resources. The paleobotanical remains recovered from the Rogers-CETA site suggest an economy based upon corn agriculture with a similar reliance upon wild plants. This paper will discuss possible gathering strategies that could account for the presence of wild plant species in the paleobotanical remains from the Rogers-CETA site in Talladega County, Alabama.

HERBERT, Joseph M (Tennessee) MODELING ARCHAIC ADAPTIVE STRATEGIES IN THE NASHVILLE BASIN, TENNESSEE Archaic period paleoenvironmental data for the Nashville Basin, Tennessee, are used to assess Binford's concept of varying logistical responses of groups adapting to environments with different effective temperatures. Contemporary hunter-gatherer groups inhabiting areas with effective temperature ranges similar to those assumed for the Early and Middle Archaic periods are used to postdict changes in the logistical strategies of prehistoric groups responding to the hypsithermal interval. Difficulties in generalizing from the adaptive strategies of contemporary groups to those of prehistoric groups based on the measure of effective temperature alone suggests that additional environmental variables, such as species composition, have greater potential for predicting the patterning of archaeological assemblages.

HESSE, Brian and Henson, Susan (Alabama at Birmingham) ROGERS-CETA SITE FAUNAL REMAINS Animal bones and shells were recovered through two excavation procedures at the Rogers-CETA site, the routine sieving of trench matrix and laboratory examination of flotation samples cut from trench walls. This brief report documents the patterning in the faunal remains found through sieving. The sample includes 3460 fragments of bone, antler, teeth, and shell. Sixty percent of these specimens could be identified no further than as bone fragments from medium sized mammals (undoubtedly, mostly deer). A total of 757 fragments could be assigned to more specific taxonomic categories, the bulk referable to deer and turtle. Though the random sampling strategy used in the excavation of the Rogers-CETA site resulted in the opening of a number of test trenches, the faunal remains were largely concentrated (62%) in a single square. Some distinctions emerged when the concentrated subsample was compared to the dispersed subsample that may expose the effects of taphonomic factors. The faunal remains were also concentrated temporally, 83% deriving from Period 1 and 10% from Period 2, based on subsample allocations dependent on the seriation results. No important faunal contrasts by period were discovered. Finally the sample was subdivided according to the soil formation profile in an effort to determine if taphonomic processes were biasing recovery frequencies within trench contexts.

HOFFMAN, C Marshall (Arizona State) TOOL MAINTENANCE AND LATE ARCHAIC POINT TYPOLOGIES FOR THE TENNESSEE VALLEY Recent research in lithic technology indicates tool maintenance can produce a variety of transformations in point blade morphology, size, and edge angle over the life of a tool. However,

traditional typologies for the Tennessee Valley have failed to recognize this as a significant source of variation. Attention has focused on the identification of static normative tool styles, and variation not explained by norms has been attributed little significance. This study outlines several aspects of tool maintenance that are responsible for variation in point blade size, morphology, and edge angle over the course of a tool's use-life. A multivariate analysis of points from northeastern Mississippi is used to evaluate the hypothesis that many of these traditional types are simply resharpened or modified specimens of a single type evidencing varying degrees of reduction. Implications for the traditional typologies are evaluated, with the conclusion that a consideration of tool maintenance is necessary for constructing point typologies designed to have temporal/spatial and behavioral significance.

HOFMAN, Jack L (Tennessee) MIDDLE ARCHAIC RITUAL AND SHELL MIDDEN ARCHAEOLOGY: CONSIDERING THE SIGNIFICANCE OF CREMATIONS Shell midden sites have typically been viewed from perspectives such as prehistoric economics, population and seasonality. Ritual aspects of prehistoric activities at such sites have been only minimally considered. It is suggested that group rituals and aggregations may have been important elements in the formation of some shell midden sites and may account, in part, for their recurrent occupation. The potential ritual significance of cremation burials at the Ervin site in middle Tennessee is discussed.

HOUSE, John H. (Arkansas Archaeological Survey) NOBLE LAKE: QUAPAW PHASE OCCUPATION IN THE ARKANSAS RIVER LOWLAND, EASTERN ARKANSAS Quapaw phase occupation at Noble Lake is represented by a 3 ha village midden which has been heavily damaged by modern agriculture. Current investigations of the site attempt to integrate (1) studies of pottery vessels and other artifacts in private collections, (2) information from persons familiar with the site before it was subjected to landleveling, and (3) data from recent quantitatively and spatially controlled surface collections. Results suggest that a large nucleated settlement, comparable to the palisaded aboriginal towns of the De Soto expedition chronicles, persisted at Noble Lake as late as A.D. 1700.

HURD, Gary; Murphy, Christopher; Shelton, Jean (Georgia) SUBSURFACE ARCHAEOLOGY OF THE EZEKIEL HARRIS HOUSE, AUGUSTA, GEORGIA The Ezekiel Harris House (built c. 1797, restored c. 1965) is locally recognized as a historic landmark of early Augusta and is a National Registry property. Thirty years ago archaeological testing was performed under direction of Clement deBaillou. The authors, at the request of Historic Augusta, Inc. have conducted a subsurface testing of approximately 30% of the current property. The testing project was oriented towards satisfying four objectives.(1) Furthering the understanding of the spacial organization of the 19th century occupation of the residence by locating the auxillary buildings associated with the house. (A) Review of the field report by Clement deBaillou

indicates a cluster of metal artifacts recovered approximately twenty feet southeast from, and directly behind, the main structure. The areal distribution of artifacts covers the same dimensions as the probable kitchen. We propose that this represents the original location of the Harris House kitchen. Subsurface testing on this area of the site will confirm or reject this hypothesis. (B) Review of deBaillou's report locates a brick-lined structure (cellar) to the rear of the house. The location is currently occupied by a well, constructed by the State in 1965 as part of the historical restoration of the house. Subsurface testing will confirm these locations are identical and recover any remaining data concerning the original structure. (2) To verify the locations of exploratory excavation units dug under the supervision of deBaillou. Examination of deBaillou's report (1953), fails to resolve the exact locations of excavation units. This is particularly true for the units nearest the house as well as the sites of the recovered metal objects. (3) To explore the utility of soil chemistry studies in large scale survey. (4) To provide sufficient information such that a landscaping project proposed by Historic Augusta may be conducted without adverse impact on the archaeological resources present on the site. The results available to date satisfy objectives 1B, and 4. Objectives 1A, 2 and 3 are being pursued with additional work on the site and in the laboratory. A totally unexpected discovery was the existence of a pre-historic component to the site, consisting of a sparse artifact scatter of chert debitage and projectile point stems. As yet, none of the recovered pre-historic material is diagnostic and requires further investigation.

JOHNSON, Jay K (Mississippi) PREHISTORIC SETTLEMENT IN THE UPPER YOCONA DRAINAGE, NORTH CENTRAL MISSISSIPPI The distribution and content of sites located in the upper Yocona River bottom is examined. The resulting data are fit into what little is already known about the prehistory of the North Central Hills in Mississippi.

JONES, Calvin (Florida Division of Archives) ARCHAEOLOGICAL RESEARCH ON THE SPANISH PERIOD COMPONENT AT THE MT. ROYAL SITE (8PU36) IN PUTNAM COUNTY, FLORIDA During the spring and summer of 1983, a field survey and subsequent excavations were conducted at the noted Mount Royal site by the Bureau of Archaeological Research under the direction of B. Calvin Jones. This work was accomplished by the use of volunteers from the Northeast Florida Archaeological Society and the St. Augustine Historical Society. Research on the historic Spanish Period component at this famous Southeastern Ceremonial Complex site excavated during the late 1800's by Clarence Moore was prompted by the review of a U.S. Army Corps of Engineers dredge and fill permit associated with impact to a circa twenty acre area of the Mount Royal village located along the St. Johns River. The survey of this upland area south of the burial mound resulted in the discovery of a quantity of early 17th century Spanish Period ceramics and late 18th century British Period artifacts scattered over a circa twenty acre portion of the village extending into the proposed

impact or developmental area. Test excavations were conducted in two areas of the site, both within the impact zone and outside it, in order to determine the significance of the Spanish component. Because of this site's proximity to St. Augustine, it was suspected to be the location of San Antonio de Ancape, a Maica or Fresh Water provincial mission established in eastern Timucua circa 1597. These excavations resulted in the completion of a series of test pits across the site and the complete excavation of two small semi-subterranean pine bark covered buildings associated with the 17th century Spanish and Indian village speculated to be that of the Anacape site.

JOYCE, Dee Dee (Catawba College) A SETTLEMENT PATTERN STUDY OF 19TH CENTURY OCCUPATION IN NORTHWEST ARKANSAS Government Land Office patent records are used to trace settlement in three northwest Arkansas townships from 1828 to 1869. Site location preferences are evaluated using several cultural and natural environmental factors selected from ethnohistorical and ethnographic sources. The factors are ranked and a settlement model formulated.

KELLY, David B and Weinstein, Richard A (Coastal Environments, Inc.) PRELIMINARY RESULTS OF ARCHAEOLOGICAL AND PALEOGEOGRAPHICAL RESEARCH IN THE UPPER FELSENTAL REGION, SOUTH-CENTRAL ARKANSAS: THE CALION NAVIGATION POOL PROJECT A recent program of intensive survey and test excavations in the Ouachita River valley of south-central Arkansas has produced new information on the cultural sequence and settlement systems of the upper Felsenthal region. The research was conducted by Coastal Environments, Inc., for the Vicksburg District of the U.S. Army Corps of Engineers as part of a cultural resources investigation prior to the impoundment of the Calion Navigation Pool. A total of 150 previously unknown sites were located and 50 recorded sites were revisited. Test excavations were carried out at six sites in order to assess their significance or their relationship to the proposed navigation pool. The results of these investigations are being integrated with those of a recent geomorphic study of the area in order to develop a series of paleogeographical reconstructions of this portion of the river valley beginning in terminal Pleistocene times and continuing through the Holocene. Models of human adaptation to the changing floodplain environments will then be offered. The preliminary findings of this research are presented, and topics for further research are suggested.

KING, Frances B (Illinois State Museum) ADEQUATE CURATION OF SUBSISTENCE REMAINS The number of archaeological sites with good preservation of plant or animal remains is relatively small. Many of the richest sites have long since been destroyed, with little or no recovery of subsistence data. At the same time, new techniques such as scanning electron microscopy and accelerator radiocarbon dating are rapidly expanding the kinds and amounts of information available from a given specimen. As a result, there will be increasing desire in the future to reexamine old collections using new tests or new approaches or to look at new

attributes. Although subsistence remains seem of no additional research value once analyzed, it is important that they be preserved for future research. Such material will become increasingly valuable in the years ahead and should be stored in such a way that loss from physical degradation, insect activity or over handling are minimized. Such storage needs to be considered as an integral part of every research proposal.

KIRK, Kathleen (Alabama at Birmingham) STATISTICAL ANALYSIS OF CERAMICS FROM THE ROGERS-CETA SITE Abstract not submitted.

KNIGHT, Vernon J., Jr (Alabama) THE INSTITUTIONAL ORGANIZATION OF MISSISSIPPIAN RELIGION Symbolic objects for ceremonial display, or sacra, tend to be systematically related in their representational content to the cult institutions which produce and manipulate them. Cult organization is normally pluralistic among preliterate complex societies. Mississippian sacra suggest a triad of co-existing types of cult institution: (1) a communal cult type emphasizing purification ritual, (2) an aristocratic cult type serving to sanctify chiefly authority, and (3) a priestly cult type mediating between the other two, supervising mortuary ritual and ancestor veneration.

LARSEN, C (Northern Illinois) POPULATIONS IN TRANSITION: THE BIOARCHAEOLOGY OF ST. CATHERINES ISLAND Study of human skeletal and dental remains recovered from archaeological localities on the Georgia coast has revealed a number of dramatic changes in health and disease concomitant with two important events, including the increased dependence on maize agriculture in later prehistory and the arrival of Europeans during the sixteenth century. With respect to the former, a general deterioration in overall health is revealed by an increase in bone infections and dental caries. Moreover, there is a marked decline in stature that most likely reflects a decline in quality of the subsistence base. Interestingly enough, these changes appear to be more pronounced in females than they are in males. Over the last year, archaeological crews have been excavating human skeletal materials from the mission cemetery at Santa Catalina de Gual. To date, approximately one-third of the contents of this cemetery has been exposed, producing the remains of 100 to 150 individuals. Although the analysis of these materials is only beginning, initial findings suggest that there is a continuation of decline in biological quality of life.

LEE, Chung-ho (West Florida) ESTUARINE ADAPTATIONS DURING THE PREHISTORIC PERIOD: ARCHAEOLOGY OF TWO SHELL MIDDEN SITES ON THE ST. JOHNS RIVER A recent archaeological investigation at two shell midden sites (A.D. 1200-1500) located in the western extent of the St. Johns River estuary, Duval County, Florida, revealed cord-marked and cob-marked ceramics along with subsistence data. Data indicated that these sites appeared to have been exclusively estuarine exploitation camps. Settlement must have been seasonal, perhaps winter and/or spring, temporary, and short-term in nature. This paper presents the fieldwork procedures applied at these two sites and the implications drawn upon from the

laboratory analysis.

MAHER, Thomas O (New York at Binghamton) IN SEARCH OF CERAMIC EXCHANGE: MINERALOGICAL METHODS FOR CHARACTERIZING CERAMICS FROM FIVE REGIONS IN THE SOUTHEASTERN UNITED STATES Traditionally ceramic exchange between American Indian groups in the late prehistoric southeast has been measured through stylistic analysis of ceramic surface treatments. Recent analysis of ceramics from sites in Alabama, Louisiana and Mississippi indicate that there are mineralogical methods which allow a quantitative characterization of ceramics from these regions. The results indicate that ceramics produced from clay sediments from the Central Tennessee river, the Black Warrior river and the lower Mississippi river valleys can be mineralogically distinguished from each other. These results, and the implications of identifying local versus nonlocal ceramics in an accurate mineralogical/chemical manner, will be discussed.

MAINFORT, Robert, and Shannon, George (Michigan State) 1983 EXCAVATIONS AT PINSON MOUNDS: THE "TWIN MOUNDS" The third year of intensive research at Pinson Mounds focused on a pair of large, conjoined Middle Woodland burial mounds known locally as the "Twin Mounds". Only the northern mound was excavated. The mound exhibits several unique construction features: the top of the mound was capped over with several layers of large sandstone boulders; the top of the primary mound was covered by several carefully deposited, thin layers of sand and clay; a wooden palisade or retaining wall was erected around at least part of the mound. Three log-covered tombs were also excavated. The size of the mound, as well as the elaborate construction features, suggest that it was built between 1-200 A.D.

MANZANO, Bruce L (Tennessee) FAUNAL REMAINS FROM THE EASTMAN ROCKSHELTER (40SL34), A DEEPLY STRATIFIED SHELTER FROM NORTHEASTERN TENNESSEE Preliminary analyses of faunal remains recovered from a deeply stratified rockshelter (40SL34) located in Sullivan County, Tennessee form the bases for a discussion on the prehistoric human seasonal use and function (e.g. base camp or hunting camp) of the site. Identifiable index lithic artifacts recovered in stratigraphic context with the faunal material favorably suggests that the remains range in age from at least the Middle Archaic to the Early Historic time periods. Few sites, if any from northeastern Tennessee, have contained faunal deposits spanning such an extensive period of time. Recovered faunal remains from 40SL34 are employed to generate data in order to test hypotheses that focus on the comparison between the way humans used the shelter during prehorticultural times to the way it was used during horticultural times. Site function is examined based on a cautious evaluation of recovered mammal bone frequencies and skeletal completeness patterns. Information obtained from modern animal seasonality growth studies and applied to corresponding species from reliable archaeological context will form a major part in determining the season(s) of site utilization. With the methods applied in this study, fundamental comprehension of the role 40SL34 played in the

settlement systems of prehistoric humans who once inhabited northeastern Tennessee will be enhanced.

MAURER, Christopher, and Purdy, Barbara (Florida) THERMOLUMINESCENT DATING OF HEAT-ALTERED CHERT The application of thermoluminescent dating to heat-altered chert will be outlined and results for chert artifacts from four Southeastern sites will be discussed.

MAY, J Alan (American Museum of Natural History) FALLEN TREE REVISITED: PRELIMINARY RESULTS FROM TEST EXCAVATIONS AT 91b8, ST. CATHERINES ISLAND The Fallen Tree site, 9Lb8, is an aboriginal component associated with the Spanish mission Santa Catalina de Guale. Previous limited testing by Larson and Caldwell located a midden containing a mixture of Spanish and aboriginal artifacts. The American Museum of Natural History initiated excavations at this site in 1983 to evaluate the integrity of the deposits, to determine the degree of faunal and botanical preservation, and to determine whether structures exist adjacent to the middens. Preliminary results indicate that faunal and floral remains are well preserved, and midden deposits appear to be virtually undisturbed by plowing, construction, or burrowing animals. There is also some evidence to suggest the presence of aboriginal structures. Future research will explore the relationship between this aboriginal component and the main part of Santa Catalina de Guale.

McKEAN, Laurie (Florida State Museum) ANALYSIS OF FAUNAL MATERIAL FROM PRELIMINARY EXCAVATIONS AT HONTOON ISLAND, A WETLANDS SITE ON THE ST. JOHNS RIVER The Hontoon Island site lies on the edge of a freshwater-shell mound on the St. Johns river (Florida). Various methods of mechanical and chemical sorting were used to extract plant, bone, shell and cultural artifacts from the wet matrix of a volumetric sample, removed in 30 X 30 X 10 cm. segments. Analysis of the faunal materials indicate a dramatic change in the representation of fish and molluscan resources. This shift coincides with a period of documented upheaval in many native communities along the St. Johns, a result of contact with the Spanish.

MICHIE, James L (Tennessee) BIOTURBATION, GRAVITY, AND SITE FORMATION PROCESSES IN THE COASTAL PLAIN OF SOUTH CAROLINA The Coastal Plain of South Carolina is generally characterized by an undulating topography of linear dune ridges that were deposited as the result of continental emergence following major sea level fluctuation during the past 60 million years. The excavation of archaeological sites on these relict dune formations has demonstrated a significant similarity in the patterning of cultural stratigraphy. While the development of a stratigraphic, archaeological record is usually given to specific geologic processes such as alluvial, coluvial, and eolian deposition, recent research strongly suggests that the formation of the archaeological record in these sandy areas is attributed to a dynamic system of bioturbation and gravity.

MILLER, James (Cultural Resource Management, Inc.) SITE LOCATION AND PREDICTIVE MODELLING AT FORT STEWART, GEORGIA A cultural resource assessment of Fort Stewart Military Reservation, Georgia has revealed prehistoric through modern settlement and land use patterns over 280,000 acres of the southeast interior coastal plain. Besides construction of culture history narratives, the research involved a 5% sample survey of fire lane exposures (randomly chosen and stratified according to soil associations), examination of known prehistoric and historic site locations, as well as an architectural inventory. Sites were discovered, recorded, and assessed ranging from Paleo-Indian through World War II periods. Prehistoric and historic habitation was not dense and land use patterns remained agricultural for most of the historic period. Besides revealing cultural patterns useful in judging site probability in unsurveyed areas, techniques of field survey and analysis may prove useful in other areas where access is complicated by hazard of unexploded ordnance.

MILNER, George R (Illinois) MISSISSIPPIAN PERIOD POPULATION SIZE AND DENSITY: NEW INFORMATION ON THE CAHOKIA SITE AREA OF WEST-CENTRAL ILLINOIS The large size of the Cahokia site and its many impressive earthworks have prompted much speculation on the number of individuals that occupied the site and the surrounding Mississippi River floodplain. Previous population estimates have been based on very little and poorly controlled information. Recently collected data on the number and distribution of structures at eight sites with a combined excavation area of ca. 20 ha provide a basis for determining the size and density of Mississippian period populations that occupied the floodplain immediately south of Cahokia. Methods of population estimation and results are discussed.

MITCHEM, Jeffrey M ; Smith, Marvin T (Florida) and Allen, Robert (Louisiana) ANALYSIS OF ARTIFACTS FROM THE WEEKI WACHEE BURIAL MOUND, HERNANDO COUNTY, FLORIDA The Weeki Wachee burial mound (8-He-12) was excavated in 1970 by Mr. Robert Allen, with a field crew of high school students. The mound, on the grounds of a tourist attraction, was disturbed during landscaping activities. Excavated artifacts included a large number of broken and complete vessels, shell dippers, and Spanish beads (both glass and silver). Ceramic types indicate that the mound was constructed by Safety Harbor people (ca. A.D. 1300-1700), though ceramic types typical of Fort Walton and Alachua Tradition sites were also present. The Spanish beads were early types, including Nueva Cadiz Plain, tubular and chevron styles. The silver beads contained some copper, indicating the use of coin silver in their production. It is suggested that the Spanish materials were obtained from Spanish explorers, and possible source expeditions are discussed. Implications of the site in terms of the northern extent of Safety Harbor are discussed, as well as relationships with other cultural traditions.

NANCE, C. Roger (Alabama) ARCHAEOLOGY OF THE ROGERS-CETA SITE, A LAMAR VILLAGE IN NORTHEASTERN ALABAMA Six radiocarbon dates from

this site suggest Lamar occupation from 1300 to 1550 A.D. Permanent settlement is indicated by house remains and high concentrations of artifacts. The 16,000--sherd ceramic sequence shows a gradual shift through time to more shell tempering, black filming, and polished surfaces, all suggesting increasing influence from the west. Evidence for a micro-blade industry was developed through a detailed attribute analysis of stone flakes from the site. The site is on an ecotone between the Piedmont and the Ridge and Valley province. At this locality, hunting was important to the economy, as were both wild and domesticated plants. Site formation is discussed in terms of soil morphology and mechanical soil analysis.

NEWSOM, Lee Ann, and Purdy, Barbara A (Florida) PREHISTORIC USES OF WOODS AT HONTOON ISLAND, FLORIDA Hontoon Island is located on the St. Johns River, Volusia County, Florida. A nearly complete assemblage of organic artifacts, flora, and fauna has survived in excellent condition in a water-saturated deposit adjacent to a large shell mound on the island. As a result of analyses using an inter-disciplinary team effort, the items are furnishing new insights about diet, technologies, artistic expressions, and environment in this area of Florida from approximately A.D. 900 to A.D. 1760 when the site was abandoned. This paper focuses on the woods recovered from the site. To date, more than 200 specimens have been identified representing 12 species. This collection provides a rare opportunity to study environment and aboriginal wood technology through time, including species utilized for specific tasks. Changes in wood technology and species utilization are interpreted as an adaptation to European contact and the introduction of metal tools. It is possible that in the future we will be able to compare ethnohistoric accounts of Timucuan Indian uses of native woods to those represented in the archaeological sample and, thus, document the accuracy of the historic descriptions.

O'HEAR, John W (Mississippi State) and Lehman, Geoffrey (Mississippi Dept. of Archives and History) TALLAHATTA QUARTZITE EXPLOITATION IN CENTRAL MISSISSIPPI The Tallahatta Formation outcrops through the middle coastal plain of Alabama and Mississippi and contains a distinctive quartzite which was used extensively in prehistoric flaked tool manufacture. Recent archaeological survey in Lauderdale County, east-central Mississippi, has located an area of intense Tallahatta Quartzite extraction and biface tool production which appears to have been used almost exclusively during the Middle and Late Archaic. Upland sites near outcrops have tremendous amounts of debitage and appear to be associated with extraction and very preliminary reduction. An 0.6 hectare site bottomland site near the outcrops was an apparent center of finished tool production. Over 4000 projectile points, 1000 of them whole, have been recovered through amateur excavation of approximately 15 percent of this site.

O'BRIEN, Deborah M (American Museum of Natural History) PRELIMINARY CERAMIC AND SEASONALITY ANALYSES FROM THE REGIONAL

SETTLEMENT SURVEY ON ST. CATHERINES ISLAND Analysis of the materials excavated from ca. 130 sites on St. Catherines Island remains in a preliminary stage. This sample includes abundant ceramics, most of which have been classified according to the DePratter's ceramic sequence for the North Georgia coast. Most sites are multi-component occupations ranging from St. Simons through Altamaha period. Seasonality has also been considered in this project. The most effective method has been the thin-section analysis of M. mercenaria. To date, analysis has centered on single-component sites, most of which contain claims harvested between fall and spring.

O'BRIEN, Dennis (American Museum of Natural History) DOCUMENTATION AND STABILIZATION OF HISTORIC SOUTH END SETTLEMENT, ST. CATHERINES ISLAND South End Settlement is a group of twelve early nineteenth century houses made of locally produced tabby and topped with peaked wooden roofs. Their condition varies: complete walls are still standing on several structures, whereas others have decayed to small tabby lumps. As part of the ongoing project, the American Museum has begun recording and stabilizing each of the South End Settlement structures. After complete photo-documentation, detailed plan and elevations were made of the best five buildings. Stabilization efforts are just beginning, and a number of Federal, State, and private agencies are being consulted concerning the chemical and physical preservation of tabby.

ORSER, Charles E. Jr (Louisiana State) THE SPATIAL ORGANIZATION OF A POSTBELLUM PLANTATION IN THE SOUTH CAROLINA PIEDMONT Multidisciplinary research at Millwood Plantation in the South Carolina upcountry revealed a spatial organization that was, like that of the antebellum period, based on the economic needs of the plantation. The spatial characteristics of the antebellum period are compared with those of the postbellum period and general observations on the settlement pattern of the postbellum plantation are presented. This research suggests that the plantation nucleus continued to serve as an administrative center even after the plantation was transformed into a tenant farming system after 1870.

O'STEEN, Lisa ; Ledbetter, Jerald (Georgia) and Elliott, Dan (USDA Forest Service) PALEO INDIAN PIEDMONT SITES As a result of examination of survey data from two intensively surveyed areas of the Georgia and South Carolina Piedmont, the characteristics of Piedmont Paleo Indian occupation is becoming apparent. Data from over forty Paleo Indian lithic sites along the Oconee and Savannah River drainages indicate a shift in site selection during the Paleo Indian period and a relationship between site locations and specific quarry regions. The recognition of these sites was hampered by several factors including survey bias and failure to recognize the Paleo Indian affiliation of these sites due to their sparse nature and absence of whole unaltered fluted point artifacts. Extreme curation of Paleo Indian diagnostic tools and the use of minimally diagnostic instant tools in the assemblages on these small sites is evidenced. The close

association between these sites and small, isolated outcrops of high quality lithic resources is clear. An expansion from a restricted primarily riverine orientation in the Early Paleo Indian period is shown by the Wallace Reservoir data. Preliminary observations on Paleo Indian Piedmont land use and the Paleo Indian hunter-gatherer subsistence pattern are presented along with a condensation of the raw data.

POLLACK, David A (Kentucky Heritage Council) and Ison, Cecil (Kentucky) VANDALISM OF ROCKSHELTER SITES ON PUBLIC LANDS: AN ASSESSMENT Within the mountains of Eastern Kentucky lies the heaviest concentration of dry rockshelters east of the Rocky Mountains. This unique resource is being destroyed at an alarming rate. In an effort to assess the nature and degree of vandalism occurring to rockshelter sites on public lands a reconnaissance was conducted in the Red River Gorge area of the Daniel Boone National Forest. Of the twenty-two sites revisited, eighteen contained additional disturbance to the cultural resources. The types of vandalistic activities and measures to curtail them are discussed.

PRENTICE, Guy (Illinois-Urbana) THE BIRGER FIGURINE: A KEY TO UNDERSTANDING MISSISSIPPIAN COSMOLOGY The Birger figurine is a bauxite figurine recently unearthed near the Cahokia site in southwestern Illinois. An analysis of the figurine's physical characteristics and delineation of its symbolic content has lead the author to the conclusion that the figurine is meant to represent a mythological earth-goddess. This identification is based on the physical traits of the figurine and the numerous corresponding traits found in the eastern North American myths describing the earth-goddess. The identification of the Birger figurine as the earth-goddess and the analysis of the symbolic content expressed in its portrayal provides deeper insights into the prehistoric Mississippian concepts of the life and death cycle and the Mississippian views of man, nature, and the supernatural as a cosmological system.

PRICE, James E. (Southwest Missouri State) ARCHAEOLOGICAL INVESTIGATIONS AT THE OWLS BEND SITE, 23SH10, IN OZARK NATIONAL SCENIC RIVERWAYS, MISSOURI Archaeological investigations in the summer of 1983 at the Owls Bend site in Shannon County, Missouri conducted by the National Park Service, Southwest Missouri State University, and the University of Nebraska yielded data on a Developmental Mississippian manifestation exhibiting simple-stamped shell-tempered ceramics and extremely small corner-notched arrowpoints. Evidence indicates that although the site occupants were probably employing essentially a Woodland lifeway that they were on a cultural trajectory that ultimately led to the complex socio-political manifestations exhibited by Middle Mississippian occupations in the Mississippi Alluvial Valley approximately six centuries later.

QUITMYER, Irvy (Florida State Museum) LATE PREHISTORIC SUBSISTENCE ADAPTATIONS IN THE ST. JOHNS RIVER ESTUARY SYSTEM The importance of shell midden deposits to human societies has

not been fully documented. However, the complexity of subsistence adaptations to the coastal estuarine system is now being realized through sampling methods designed to recover the full range of faunal resources exploited by aboriginal people. Fine screened floated samples from two sites in the St. Johns Estuary System indicate a specialized economy which was heavily reliant on shellfish, juvenile fish, and shrimp. Faunal evidence suggests shellfish collection and fishing activities were limited to the near-shore and shallow tidal creeks of the estuary.

RAILEY, Jimmy A (Kentucky) GEOARCHAEOLOGY OF THE HURRICANE BRANCH SITE (40JK27) The Hurricane Branch Site is a large archaeological locality situated on the floodplain of the Cumberland River in Jackson County, Tennessee. This site contains surface materials dating from Early Archaic to Late Prehistoric times, with intact but spatially segregated Archaic and Middle Woodland components. Hand and machine excavations revealed wide variation among soil profiles across the site, reflecting a complex geomorphic development for this locality. Stratigraphic data and the intrasite patterning of archaeological materials are used to illustrate the diachronic relationships between the geologic history and aboriginal settlement at this large site.

RAMENOFKY, Ann (Louisiana State) DEFINING THE END OF THE MISSISSIPPIAN PERIOD A logical contradiction exists in the culture historical treatment of the Late Mississippi Period in the Lower Mississippi Valley. Although the period is defined as the terminal prehistoric unit, it doesn't end with history which is marked by the De Soto entrada. The period begins prior to De Soto and continues until French exploration. The assumption here is that native populations are essentially aboriginal until the arrival of the French. To determine whether the assumption is correct, the chronology of Phillips, Ford and Griffin is examined. Occurrence seriations, developed from Phillips, Ford and Griffin types, demonstrate that the Late Mississippi Period terminates with De. Soto, and is followed by two historic aboriginal periods. Coincident with the earlier historic period is a catastrophic decline of aboriginal population. A new definition of the Late Mississippi Period is suggested.

REITZ, Elizabeth (Georgia) COMPARISON OF SIXTEENTH CENTURY SPANISH AND ABORIGINAL SUBSISTENCE AT ST. AUGUSTINE Research at St. Augustine, Santa Elena, and Puerto Real has enhanced our knowledge of sixteenth century Spanish subsistence strategies. The difference between contemporaneous European foodways on Hispaniola and in Spanish Florida may be due to the aboriginal influence on Spanish behavior in Florida. This influence can be explored by comparing aboriginal subsistence with Spanish subsistence on the coast. Aboriginal data is drawn from several coastal sites, primarily the Fountain of Youth site, identified as Seloy's village. While Spaniards and aboriginals exploited identical species, differences in the size and abundance of certain species exploited suggested technological differences. This may indicate something about the direction of culture change

during the sixteenth century.

RIGGS, B. H. (Tennessee) FEDERAL PERIO CHEROKEE SETTLEMENT PATTERNING IN THE HIWASSEE DISTRICT, EASTERN TENNESSEE Early nineteenth century surveys, census records and ethnohistoric accounts have yielded an extensive body of settlement pattern data for the late Cherokee occupation of the Hiwassee District in eastern Tennessee. Environmental, political and socioeconomic factors derived from these sources were examined, revealing patterning at the regional, community and individual residence levels. These patterns are incorporated in an archaeologically testable model of Cherokee farmstead location and socioeconomic diversity.

RODRIGUEZ, Miguel (Museo Universidad del Turabo) A CULTURAL RESOURCE SURVEY AT CAMP SANTIAGO, A NATIONAL GUARD RESERVATION IN PUERTO RICO A cultural resources survey has been conducted at Camp Santiago Salinas. Camp Santiago is a 12,000 acres military reservation of the Puerto Rican National Guard located in the South-Central coast of the island of Puerto Rico. Field research was based on a 10% stratified random sampling of the study area. The paper will be discussing the most relevant aspects of the survey, including strata selection, field work procedures and the importance of the findings in the context of Puerto Rican and Caribbean prehistory.

RUBENSTEIN, Paul D.(Army Corps of Engineers), and Hession, Edwin (National Park Service) THE ARMY AND ARCHAEOLOGY: AN OVERVIEW OF MULTI-AGENCY SUPPORT TO THE MILITARY The southeastern United States is the location for some of the nation's largest Army reservations including Fort Bragg, Benning, Jackson, and Stewart. Recently, installation environment managers have evidenced an increasing awareness of cultural resource legislation and associated compliance requirements. Lacking the in-house capability to formulate and direct comprehensive cultural resources studies, many installations have turned to the National Park Service and the Corps of Engineers for technical guidance and support. This paper will present a brief summary of military programs and the resulting compliance investigations that archaeologists from Savannah District and the Archaeological Services Branch have conducted or implemented through contracting. The paper will illustrate a range of cultural resource studies including site identification, testing, and mitigation; installation-wide inventories; archival research; industrial structure documentation ; remote sensing; and nautical archaeology.

SCARRY, Margaret M (Tallahassee, Florida) PLANT FOOD PATTERNS IN SIXTEENTH CENTURY ST. AUGUSTINE AND SANTA ELENA Plant remains collected from sixteenth century contexts at the Spanish colonies St. Augustine and Santa Elena were analyzed for subsistence data. The primary source of data from both sites were flotation samples. The samples included carbonized remains from pits and refuse deposits and water-logged remains from abandoned barrel wells. The archaeological data have been combined with

documentary evidence to construct a picture of the colonists' plant food utilization. The indigenous crops - maize, beans, squash - seem to have been the mainstays of the diet. These crops were supplemented by non-indigenous crops which could be raised locally and by the collection of wild plant foods. While some plant foods were imported, their contribution to the general diet seems to have been limited.

SCHNEIDER, Kent A (Department of Agriculture) TOWARD SCIENCING ARCHAEOLOGY On October 31, 1973--ten years ago-- this Nation's first mobile archaeological laboratory program came to a halt. Conceived in 1968, a prototype mobile lab containing microsample extraction for collecting organic remains and a radiocarbon unit for dating organic remains, was successfully deployed on sites in Georgia. Based on the successes of this prototype, a 33-foot self propelled unit donated by the then-Atomic Energy Commission was refurbished and fitted out with x-ray fluorescence, radiocarbon dating and other nuclear and conventional tools for on-site archaeological analyses. The present paper explores the origins of the mobile lab concept, its rise, demise, and trends in science in archaeology over the past decade. The meaning of the phrase "precision of analysis of the past" is explored with regard to archaeology as a science, versus using the tools of other fields in answering archaeological questions.

SCHROEDL, Gerald F. (Tennessee) EIGHTEENTH CENTURY OVERHILL CHEROKEE DOMESTIC STRUCTURES Overhill Cherokee domestic structures mentioned or described in ethnohistoric sources include at least five forms of dwellings as well as corncribs, chicken houses, sweat houses, menstrual huts, and shamans' huts. These sources are used to infer the use of 76 structures recorded at six eighteenth century Overhill Cherokee villages excavated in the Lower Little Tennessee River valley between 1969 and 1977. While not all ethnohistoric structures are identifiable in the archaeological record, neither are all archaeological patterns referable to ethnohistoric descriptions. Most archaeological structures surely represent dwellings. The ethnohistoric record indicates temporal variability in Cherokee dwellings, but the archaeological record shows considerable intra and inter village structure variation. This suggests that chronology and assumptions about cultural uniformity in contemporary dwellings are insufficient to account for the Cherokee structure data. Socio-cultural differences and the retention of traditional architectural forms even after considerable Euro-American contact is evident in the archaeological and ethnohistoric data for Overhill Cherokee houses.

SHAPIRO, Gary (LAMAR Institute) SOIL RESISTIVITY SURVEY AT SANTA CATALINA de GUALE In both 1982 and 1983, soil resistivity studies were conducted at Santa Catalina de Guale. These surveys were designed to disclose the location and alignment of collapsed sixteenth/seventeenth structures known to be present from preliminary testing. Earth resistance was measured along one m. intervals and contour maps were produced to indicate areas of higher and lower resistance. Several large anomalies were so

defined, and subsequent excavation in two of the areas reveals the presence of collapsed daub walls in alignments corresponding to those indicated by the resistivity contour maps. We have found the soil resistivity studies to be a significant aid in the exploration of this extremely well-preserved mission site.

SHELDON, Craig T. Jr. (Auburn at Montgomery) A LATE HISTORIC CREEK BURIAL AT 1TA157 IN TALLADEGA COUNTY, ALABAMA Amateur activity at 1TA 157 in Talladega County, Alabama revealed a late historic indian burial and associated artifacts. As indicated by the presence of an 1833 coin ring, the items were interred shortly before removal of the Upper Creeks to Oklahoma. Analysis indicates that artifacts bear similarities to materials from late historic Creek sites in Alabama, and Oklahoma and generally reflect a continuing adaptive development of historic Creek culture.

SHELDON, Elisabeth S (Wainwright Engineering Co.) IDENTIFICATION AND ANALYSIS There are inherent difficulties in identifying and interpreting botanical remains from archaeological sites. This paper will detail several including differential preservation, human vs. natural deposition and prehistoric vs. modern deposition. In addition, problems resulting from the people's food storage techniques will be considered.

SHELDON, Elisabeth S (Wainwright Engineering Co.) ARCHAIC PERIOD PLANT USE IN ITAWAMBA CO., MISSISSIPPI As part of the US Army Corps of Engineers' Cultural Resource Management Program for the Tennessee-Tombigbee Waterway, eight archaeological sites containing long Archaic Period culture sequences were excavated by an interdisciplinary team from the University of West Florida. This paper will present the results of our research: reconstruction of the prehistoric environment and analysis of plant remains from five midden mounds in the floodplain, two sites located in the ecotone between the floodplain and ridgetop areas and one on a ridgetop. Our results, to date, tend to corroborate analyses from Koster in Illinois and Rose Island and the Duck River Valley in Tennessee. The most common taxon and part recovered is Carya pericap with small quantities of Quercus and Juglans perical present. Very few seeds were recovered from the sites.

SHENKEL, J. Richard (New Orleans) and Gibson, Jon L (Southwestern Louisiana) THE DEVELOPMENT OF MARKSVILLE CULTURE, OR DOES THE SOUTH REALLY HAVE TO DO IT AGAIN? Current conceptions hold that Lower Mississippi Valley Marksville culture arose in response to artistic, commercial, and cultic stimulation emanating from midwestern Hopewellian manifestations during the first century A.D. Recent data independently assembled by the authors indicate that this neat, simple, historical view obfuscates the complex behavioral dimensions and evolution of Marksville culture. Pottery modes, mortuary elements, and even trade items that when together form the typological nucleus of Marksville culture were individually present as early as 500 B.C. and were behaviorally associated in burial contexts by 200-100 B.C., clearly predating

classic Hopewellian expressions in the Midwest. We draw attention to these factors, not to perpetuate arguments about historical precedence and directions of diffusion, but to illustrate that cultural growth, regardless of external influences, proceeded in a largely endemic fashion.

SIBLEY, Lucy R and Jakes, K (Georgia) TEXTILE FABRIC PSEUDOMORPHS: SOME IMPLICATIONS FOR THE ARCHAEOLOGY OF THE SOUTHEAST Textile fabric products function in a close association with the people who manufactured, used, and discarded them, but their study has been hindered since few survive the degradative influences of the environment. Surviving occasionally, however, as part of the corrosion products surrounding metal objects are mineralized formations termed textile fabric pseudomorphs which display the physical shapes of textile fibers, yarns, and fabrics. They are formed in a petrification process in which mineral compounds replace the organic structures of fibers while retaining their former configurations. Very little is known about their composition, the nature of the replacement process involved, the factors which encourage their formation, or their evidence as textile products. Where textiles do not survive and textile fabric pseudomorphs are formed, the latter may be analyzed as if they were fragile textiles in order to reconstruct the cultural use of textile products. Copper artifacts from three sites in Georgia (Mandeville, Tunacunnee, and Etowah) display textile fabrics which are either partially or completely mineralized. They provide actual evidence of the utilization in fabric forms of plant and animal products by prehistoric peoples living in the southeast. Some examples of such mineralized materials as feather are discussed. Implications of this type of evidence of trade networks, ecological zone adaptation, status and sex role differentiation are examined.

SMITH, Marion F Jr. (Southern Illinois) and Ferguson, Leland G (South Carolina) INFLUENCE OF CERAMIC USE ON VESSEL SHAPE: THEORETICAL AND ETHNOGRAPHIC RESULTS An explicit theoretical model relating aspects of vessel shape (such as volume) to aspects of use (such as flow rate required for contents) is presented. Variables of shape are predicted under this model for vessels of documented use from the American Southwest and West Africa. Theoretical predictions are in reasonable agreement with the vessel shapes documented. These preliminary results lend plausibility to ongoing attempts to use shape as one predictor of archaeological use of vessels.

SMITH, Marvin, (Florida); Hally, David; DePratter, Chester; and Hudson, Charles (Georgia) and Polhemus, Richard (Tennessee) COOSA In 1540 the members of the Hernando de Soto expedition were the first Europeans to visit the main town of Coosa, and they visited many of the towns which were tributary to the chief of Coosa. In 1560, a contingent from Tristan de Luna's settlement at Nanipacana on the Alabama River reached some of the southern tributary towns of Coosa, and eventually the main town, where they resided for several months. Moreover, in 1567 the Juan Pardo expedition attempted to reach the main town of Coosa, but

they only reached some of the northern tributary towns before the Indians forced them to cut short their expedition. By combining historical information from these expeditions with archaeological information, we have located the main town of Coosa as well as some of the tributary towns. Moreover, we have been able to develop some insights into the structure and operation of the chiefdom of Coosa.

SOUTH, Stanley (South Carolina Institute of Archaeology and Anthropology) RESEARCH METHODS AT SANTA ELENA Since the discovery of the Spanish colonial city ruins of Santa Elena in 1979, the National Geographic Society has sponsored three seasons of work on this site of the capitol of Spanish Florida on Parris Island, South Carolina. Also sponsoring work at the fort discovered at that time (Fort San Felipe dating from 1572-1576), was the National Endowment for the Humanities and the U.S. Marine Corps, as well as the Explorers Club of New York. Sampling methods have been used to locate the city of Santa Elena and Fort San Felipe through computer assisted SYMAP projections, and five attributes relating to architecture have been found to be highly predictive in locating the specific site of Spanish colonial structures using sample squares. Thus far a one percent sample has been used, but in the summer of 1983 a three percent sampling scheme was used inside Fort San Felipe to test the relationship between this level of sampling and the excavated area of the fort after the sample was taken. This project was sponsored by the National Science Foundation. This paper summarizes these methodological tools at the Santa Elena site.

STEINEN, Karl T (West Georgia) and Sears, William H (Florida Atlantic) CHEROKEE AND CREEK CULTURE IN THE INTERIOR SOUTHEAST: A VIEW FROM ETOWAH The identification of Cherokee and Creek culture is one that continues to be a problem for archaeologists. Excavations conducted at the Etowah site in 1953 by William H. Sears serve to shed some light (or perhaps shadows) on this problem. A direct historical approach is used to demonstrate that the historic occupants of the Etowah site were Cherokee who had some contact with the Lower Creeks. A comparison of the Etowah materials with those from sites in the area is used to develop hypothetical boundaries between the Overhill and Underhill Cherokee and the Upper Creek.

STEPHENSON, Robert L (South Carolina) A BRIEF OVERVIEW OF THE HISTORY OF ARCHAEOLOGICAL RESEARCH IN SOUTH CAROLINA Archaeological research in South Carolina began in the 1820's with the work of Dr. William Blanding of Camden but essentially lay fallow for more than 130 years. During this time ethnographic, historical, and some archaeological research was carried on sporadically but mainly by researchers passing through South Carolina enroute to research fields elsewhere. Research efforts based within the State were essentially only those of the Charleston Museum, particularly in the 1920's and 1930's. Throughout the latter half of the 19th and the first half of the 20th centuries local collectors amassed huge collections of artifacts most of which have long since been lost or dispersed.

South Carolina was almost totally bypassed by the archaeological opportunities of the W.P.A. in the 1930's and of the River Basin Surveys of the 1940's and 1950's. The South Carolina Department of Archaeology was created in 1963 to be a research base within the State. By 1967 this Department was transferred to the University of South Carolina and became the Institute of Archaeology and Anthropology. It was an opportune time as new Federal laws were beginning to require archaeology. By the mid 1970's, 30 to 40 archaeologists were doing research within the State; most of whom were based in South Carolina. Many hundreds of projects have been accomplished and the opportunities for the future are limited only by the foresight and initiative of the archaeologists.

STEPONAITIS, Vincas P (SUNY at Binghamton) BURIAL MOUNDS IN THE BIG BLACK RIVER DRAINAGE: SOME NEW INTERPRETATIONS In the late 1920s and early 1930s, James Ford and Moreau Chambers excavated six burial mounds in the Big Black river drainage in central Mississippi. A restudy of their original field notes and collections has resulted in some significant new interpretations. A seriation of the ceramics recovered in the mounds reveals that all the sites were not contemporary, but that they were occupied in different phases over the span from A.D. 1000 to 1500. Furthermore, an analysis of the burial goods suggests that interregional exchange of ornaments and exotic minerals was most intense during the period from A.D. 1000 to 1200, and declined substantially thereafter.

THOMAS, David H, and Larsen, C (American Museum of Natural History) SOME EXTREMELY PRELIMINARY OBSERVATIONS ON THE DISCOVERY AND TESTING OF SANTA CATALINA DE GUALE Roughly four years ago, the American Museum of Natural History set out to locate the remains of Mission Santa Catalina de Guale, perhaps established as early as 1566, probably abandoned in 1680. This paper will discuss the reason why we chose to look for this particular site, the techniques used in the search, and preliminary observations regarding the excavation at the iglesia, and apparent residential structure, and the mission well. The emphasis will be on research methods and objectives rather than concrete findings.

THOMAS, David H (American Museum of Natural History) NINE YEARS OF INTERDISCIPLINARY ANTHROPOLOGY OF ST CATHERINES ISLAND, GEORGIA Study of human skeletal and dental remains recovered from archaeological localities on the Georgia coast has revealed a number of dramatic changes in health and disease concomitant with two important events: the increased dependence on maize agriculture in later prehistory and the arrival of Europeans during the sixteenth century. With respect to the former, a general deterioration in overall health is revealed by an increase in bone infections and dental caries. Moreover, there is a marked decline in stature that most likely reflects a decline in quality of the subsistence base. These changes appear to be more pronounced in females than in males. Over the last year, archaeological crews have been excavating human skeletal

materials from the cemetery at Santa Catalina de Guale. To date, approximately one-third of its contents have been exposed, producing the remains of 100 to 150 individuals. Although the analysis is only beginning, initial findings suggest that there was a continuation of decline in biological quality of life.

THOMAS, Prentice M. (New World Research) INTERPRETING SITE LOCATION AND CULTURE SHANGE AT EGLIN AIR FORCE BASE, FLORIDA In 1982, New World Research, Inc. initiated a multi-phased program of cultural resources investigations at Eglin Air Force Base, Florida. The work was administered by the two phases thus for undertaken included a stratified random sample survey, non-probabilistic survey, the relocation of previously known sites and testing of judgementally-derived high probability areas which were suggested prior to our study. To date, over 500 sites have been identified and a sample of these have been tested through controlled excavations. The project data promise to provide extensive information which will form the basis for the development of a culture sequence for Eglin and enable us to examine culture change in settlement patterns. This paper presents some preliminary suggestions of site location and culture shange that have been examined through data analysis and multi-variate statistics.

TIPPITT, V. Ann (North Carolina-Chapel Hill) THE MIDDLE ARCHAIC PERIOD IN SOUTH CAROLINA The archaeological record in South Carolina is deverse and encompasses a 10,000 year span of human occupation across several geographic provinces, mountains, piedmont, fall line, and coastal plain. An examination of traditional definitions of the Middle Archaic in the Southeast and the archaeological evidence from South Carolina are presented with consideration given to the problems that have guided research. Special attention if given to spatial distribution of sites, raw materials used in tool manufacture, and variation in tool morphology to establish chronology.

TRINKLEY, Michael (S.C. Dept. of Highways and Public Transportation) AN ARCHAEOLOGICAL OVERVIEW OF THE SOUTH CAROLINA WOODLAND PERIOD: IT'S THE SAME OLD RIDDLE The archaeology of South Carolina's Woodland Period is at least two decades old, yet we continue to struggle with many of the same questions concerning culture history, settlement, and subsistence. This paper briefly reviews the recent progress made in understanding South Carolina's prehistory form 1800 B.C. to A.D. 1200. While considerable progress is being made in the development and elaboration of the coastal plain Woodland phases, the Woodland groups of the piedmont are still best known from data contributed by our neighboring states of Georgia and North Carolina. A series of culture history constructs are offered along with suggestions for future research.

WAGNER, Gail E (Washington) RECOVERY AND FLOTATION TECHNIQUES The recovery of archaeological plant remains by hand-, machine-assisted, or chemical flotation has become standard practice at many sites in the Southeastern U.S. Considerations of cost,

time, personnel, research goals, site location, and characteristics of the matrix necessitate individualized systems for each project. The following survey of flotation techniques features a discussion of the basic methodological steps characteristic of every flotation system and how to adapt a system to any particular archaeological situation.

WATSON, Patty Jo (Washington) COMMUNICATION BETWEEN ARCHAEOLOGISTS AND BOTANISTS The issues indicated by the paper title are one part of a single larger issue: communication among various specialists in any multi- or interdisciplinary project. In this paper I describe and discuss what seem to be the most critical communication problems arising in the context of recovery, identification, and interpretation of botanical remains from archaeological sites. Suggestions for ameliorating these problems-- drawn from Old World and New World field and lab experiences-- are presented.

WELCH, Paul D (Michigan) RESEARCH AT A MOUNDVILLE PHASE SUBSIDIARY SITE The White site, 1Ha7,8, is a single-mound subsidiary of Moundville, occupied during the later part of the Moundville III subphase. Preliminary results of this summer's excavation are presented.

WESLER, Kit W (Murray State) SOCIOECONOMIC INDEXING ON NINETEENTH-CENTURY SITES: AN EXPERIMENT THAT FAILED A new socioeconomic analysis proposed by George Miller in 1980 provided a decorative typology and pricing indices for nineteenth-century ceramics, which would allow computation of an index value for archaeological assemblages. One limiting factor of Miller's method is that it must be applied to vessel counts, of which a viable sample often is lacking in surface of test-excavated collections. Experimentally, this author attempted to generalize Miller's scheme to be applicable to sherd counts, and to compare collections from the nineteenth and early twentieth centuries. Preliminary data from western Kentucky reveal that the experimental scheme indexes chronologically rather than by socioeconomic status. A sherd-count version of Miller's method will have to be applied to assemblages of short occupations, as Miller recommended. However, these data suggest that decorative types may be used to extend a dating system, supplementary or parallel to South's mean ceramic formula.

WHYTE, Thomas R. (Tennessee) AN EXPERIMENTAL STUDY OF ACCIDENTAL BURNING OF STONE ARTIFACTS Accidentally thermally altered (burned) lithic artifacts are common in archaeological assemblages. These may result from natural conflagrations and man-made fires (forest and field conflagrations, campfires, structure fires, etc.). Through experimentation it is determined that accidentally burned lithic artifacts may be distinguished from intentionally heat treated ones by signs of thermal damage (incipient potlids, potlids, crenated fracture). Intrasite distributional studies of burned artifacts may help to determine original locations of domestic fires and structure fires, as well as determine where natural conflagrations have occurred.

WILLIAMS, J. Mark (Lamar Institute /Georgia) 1983 EXCAVATIONS AT 9GE4 : A MULTIPLE MOUND SITE OF THE OCONEE PROVINCE IN PIEDMONT GEORGIA As part of a cooperative agreement between the University of Georgia and the U.S. Forest Service, six weeks of excavation followed by two weeks of analysis took place this summer on the Scull Shoals Mound site in Greene County Georgia. This was done as a traditional University field school. The existence of this site has been known for over 100 years through the early reports of C.C. Jones. This season's work was designed to record basic information on the site. A site map with surface contours and detailed contour maps of the two mounds were made. Mound A is about 12 meters high while Mound B is 3 meters high. Post hole tests were put in over the entire bottom to define the limits of the village. The mapping and post hole testing were hampered by the very thick vegetation in this preserved section of U.S. Forest Service land as well as by one meter of upland red clay alluvium which has buried the site in the last 130 years. A total of six 2 meter squares were placed in the village in order to determine its chronological placement. Based upon the analysis of these pits it appears that the site was first occupied in the Late Etowah Period and was occupied through the Savannah and Lamar Periods. No Early Mississippian, Woodland, or Archaic materials were found in tests that reached up to 3.5 meters deep. No excavations were done on the mounds and no features other than a few post molds were found in the village. It appears that extensive cotton farming from about 1800 until 1880 severely damaged the village midden at this the most northerly of the mound sites thought to be associated with the Oconee Province.

WILSON, Jack H (North Carolina) MUNDANE MATTERS, MISSIVE #1: CERAMICS OF THE LATE PREHISTORIC, PROTOHISTORIC, AND HISTORIC PERIODS FROM THE CAROLINA AND VIRGINIA PIEDMONT The results of a study of the available ceramic assemblages from sites of the North Carolina and Virginia Piedmont that date to the Late Prehistoric, Protohistoric, and Historic periods are presented. The temporal, spatial, and cultural relationships exhibited by these ceramics are investigated. The influences of the Pee Dee Focus, the Pisgah and Qualla Phases, and the evolving Indian cultures of the Catawba River on the Piedmont ceramics are examined. Changes in these ceramics reflect the increased interaction between Indian groups of the three physiographic provinces--the Mountains, Piedmont, and the Coastal Plain-- and between Indian groups of the Piedmont after the beginning of the Late Prehistoric period.

WOOD, W Dean (Southeastern Archaeological Services, Inc.) SIMPSON'S FIELD: A SWIFT CREEK/NAPIER SITE IN NORTHWESTERN SOUTH CAROLINA Simpson's Field (38AN8) is a Late Woodland site located along the upper Savannah River in northwestern South Carolina. Excavations in 1981 and 1982 recovered Swift Creek and Napier pottery from what was probably a permanently occupied farmstead dating to the eighth century A.D. The complicated stamped pottery from the site is a regional variant of the Swift Creek

and Napier types of middle Georgia. Sites yielding similar pottery are decidedly rare in the area despite intensive survey efforts in the Savannah River Valley resulting from the Richard B. Russell Project. Several tentative explanations for this phenomenon are entertained.

YARNELL, Richard A (North Carolina-Chapel Hill) PREHISTORIC PLANT FOOD REMAINS FROM SOUTHEASTERN NORTH AMERICA Plant remains of some significance from more than 250 archaeological sites in the Southeast are recorded in at least 120 published and unpublished reports. The collections are highly varied in substance and diversity, and the reports vary greatly in usefulness and accessibility. A large sample of these records furnished the data base for this portrayal of prehistoric plant food utilization from Early Archaic to Protohistoric times. This involves at least eight cultigens and perhaps ten other crop plants, mostly small grains and greens, in addition to nuts, fleshy fruits, legumes, tubers, and other plant products.