MISSISSIPPI ARCHAEOLOGY

Published semiannually by the Mississippi Department of Archives and History in cooperation with the Mississippi Archaeological Association

EDITOR
Patricia Galloway, Department of Archives and History

EDITORIAL BOARD
Jay Johnson, University of Mississippi
Tristram R. Kidder, Tulane University
George Sabo, University of Arkansas
Susan Scott, Hattiesburg, Mississippi
Gregory Waselkov, University of South Alabama

MISSISSIPPI ARCHAELOGY

Volume 28 June, 1993 Number 1

CONTENTS

A Preliminary Analysis of Diet Change Using Small Burial Samples from Three Sites in Mississippi
S. Homes Hogue and William Erwin 1

Locust Beads and Archaic Mounds
John H. Blitz 20

Review: Archaeology: The Science of Once and Future Things
H. Edwin Jackson 44

Frederick L. Briuer 46

Review: Stone Age Spear and Arrow Points of the Midcontinental and Eastern United States
Sam Brookes 49

Review: Gardens of Prehistory: The Archaeology of Settlement Agriculture in Greater Mesoamerica
John H. Blitz 54

Review: Missippian Village Textiles at Wickliffe
Jo Miles-Seely 56

Review: Arkansas Before the Americans
Jay K. Johnson 59

Review: The Ables Creek Site: A Protohistoric Cemetery in Southeast Arkansas
Patricia Galloway 63
A Preliminary Analysis of Diet Change Using Small Burial Samples from Three Sites in Mississippi

S. Homes Hogue and William Erwin

Skeletal remains from three small burial samples from the Middle Archaic, Late Woodland, and Late Mississippian periods are examined to investigate the possibility of reconstructing diet where food remains are unavailable for study.

Introduction

Bioarchaeology has in recent years provided valuable insights into the diet of prehistoric groups through analysis of varying degrees of dental wear, caries, and stature. Most of the studies previously conducted deal with large burial collections, minimizing sampling errors and bias. Unfortunately, large burial samples are not always available for study. Archaeological projects aimed at salvaging already disturbed skeletal remains generally yield small numbers of burials. In some situations, the burials themselves are recovered along with surface scatter with no excavation of the pits or features (Marshall n.d.). Settlement patterns can also influence the number of individuals recovered from a site. For example, Mississippian farmsteads, which may represent single family occupations, normally have few burials (Blakeman 1975; Mistovich 1988; O’Hear et al. 1981; Solis and Walling 1981). The aim of this paper is to investigate the reliability of using small burial samples in reconstructing diet. We are interested in assessing diet change when floral and faunal remains are not recovered. Three burial samples from northeast Mississippi, representing occupations from the Middle Archaic, Late Woodland, and Late Mississippian periods, are used in this study. It is hoped that by using samples belonging to three cultural phases, questions can be answered regarding possible shifts in subsistence strategies experienced by prehistoric populations in Mississippi.
The Sites

The three burial samples included in this study are from the Vaughn Mound (22-Lo-538), Bryan Farm (22-CI-827), and South Farm (22-Ok-534) sites (Figure 1), which represent occupations of the Middle Archaic period, Miller III phase, and Moundville II/III phase respectively. These sites are located in three adjacent counties within the Tombigbee River drainage. For the purpose of this study, it was assumed that the availability of natural food resources (not cultivars) was similar throughout the three periods represented and that the inhabitants of the sites were subjected to similar ecological constraints. A review of research in Mississippi indicates that the natural environments of the Middle Archaic, Woodland, and Mississippian periods were virtually identical; with populations engaging in shellfish collecting, wild plant food collecting, and hunting and fishing (Atkinson 1974:145; Atkinson et al. 1982:11 and 23; Jenkins and Krause 1986). Thus, the effects of the environment on dentition and physical stature probably varied little. Observed differences between burial samples are, therefore, presumed to be culturally related.

The Vaughn Site

The first collection includes six burials recovered from the Vaughn Mound (22-Lo-538). The Vaughn Mound is located about 300 meters from the Tombigbee River, two miles south of Columbus, Mississippi. It was first observed as a circular dome-shaped mound approximately two to two and one-half meters above the surrounding topography, with the mound base extending roughly 76 meters in the north-south direction and 70 meters east-west (Atkinson 1974:115). The area had been cultivated for many years but at the time of excavation it had been fenced to serve as a cattle corral. Knowledge that the site might be affected or destroyed by the proposed channel cutoff led to the initiation of test excavations in 1974 in order to determine the depth and significance of the cultural deposits identified. Work at the site was supervised by Marc Rucker and was done in conjunction with the United States Department of Interior, National Park Service. According to radiocarbon dates, occupation at the site began over 6,000 years ago, during the Middle Archaic period, and ended around A.D. 1100 (Atkinson 1974:115-116). The skeletal remains from two burials produced adjusted radiocarbon dates of 4660 ± 95 B.C. and 3860 ± 85 B.C. placing them within the Middle Archaic period Atkinson 1974:132).

During the Middle Archaic period, groups of hunter-gatherers become less mobile. By 6000 B.C., scattered populations were relying more heavily on the hunting of small mammals, fishing, and harvesting of seasonal foods such as fresh-water mussels, pecans, and hickory nuts. Subsistence refuse recovered from the Middle Archaic occupation at the Vaughn Mound indicates that shellfish was a very important food resource in addition to deer, raccoon, fox, opossum, rabbit, squirrel, beaver, fish, turkey, and turtle. During the Late Archaic freshwater mussels may have become less accessible and the animal population may have decreased, although the Early Woodland period marked the recovery of more extensive shellfish and animal exploitation (Atkinson...
The deep organic midden present at the Vaughn Mound site suggests an intensively occupied base camp (Atkinson et al. 1980:14). Cultural materials associated with food preparation recovered from the Vaughn Mound included grinding stones and nutstone fragments. The presence of these artifacts at the site implies the use of wild seeds and nuts in the diet (Atkinson 1974:142). Ethnobotanical analysis of a number of nearby Middle Archaic sites, carried out in the Midden Mound project (Bense 1987) and for the East Aberdeen site (Rafferty et al. 1980), identified a high percentage of hickory nut shell present in the flotation samples.

Bryan Farm

Six burials from the Bryan Farm site (22-CI-620) were used in this study. The complex is located in the lower Hang Kettle Creek basin, a short distance from Town Creek, in Clay County, Mississippi. This site was first observed as a large midden mound and an adjacent cemetery. Cultivation and deep erosion had caused severe damage to the cemetery area. Several burials were exposed and human bone had been scattered over a moderately large area. Artifacts (grog-tempered pottery) associated with the burials and scattered on the ground represent a Miller III (A.D. 600-1100) occupation (Jenkins and Krause 1986; Marshall n.d.). The recovery of the exposed burials at the Bryan Farm site proceeded as a salvage project and undisturbed features were not excavated. Direct information concerning faunal or floral exploitation is not available from the site.

For this study, information about Miller III occupations is obtained from descriptions of this phase presented by Jenkins and Krause (1986). Populations became more sedentary and larger than in previous phases. Sites associated with the Miller III period are generally characterized as either permanent base camps, occupied during the spring, summer, and fall, or transitory camps inhabited throughout the winter months. Deer was an important resource but smaller mammals, reptiles, and shellfish (referred to as second-line resources) appear to be more important than they were in earlier periods. Nut foods were extremely important in the Miller III diet, with hickory nuts and acorns being the most common. The gathering of wild plant foods remained significant to the diet and may have included wild bean, blackberry, and maypop. Evidence of maize use has also been verified at Miller III sites, although it represents no more than one percent of the total floral matter recovered. Low quantities of maize indicate that it did not constitute a major dietary component and probably did not contribute as a major carbohydrate. It is also important to note that ground stone tools, including those used for grinding, are found infrequently at Miller III occupations in the region (Jenkins and Krause 1986:75-78).

South Farm

The third burial collection comes from South Farm site (22-Ok-534) located in Oktibbeha County. It represents a Mississippian farmstead, probably populated by a single family unit (Hogue 1991). Some surface disturbance was evident at the site, as no midden remained below the plow zone (Blakeman 1975). Of the six burials which were excavated several had been disturbed by plowing. Wood charcoal recovered from features yielded radiocarbon dates placing the occupation of the site at around A.D. 1410 (Hogue and Peacock 1993). This date coincides with the Moundville II/III phase established by Steponaitis (1983) for the Black Warrior River area.

As in the Miller III period, shellfish collecting, wild plant food collecting, and hunting and fishing were practiced by the Mississippian (A.D. 1000-1540). Maize agriculture was undoubtedly the focus of the diet, however, especially later in the period. Not only maize, but a wide variety of plants and seeds were utilized by Mississippian peoples. Wild plant species, such as fruits, seeds, and nuts, continued to be collected, and there remained an important emphasis on deer hunting (Scott 1981; Scott and Jackson 1989; Steponaitis 1983). Carbon isotope analysis of the South Farm skeletons confirmed the presence of maize in the diet, while faunal analysis provided evidence for the continued use of naturally available foods, especially deer (Hogue and Peacock 1993). No grinding stones were recovered from undisturbed contexts, although one was collected on the surface of the site (Blakeman 1975 field notes).

Methodology

Before addressing the research question, the age and sex of each individual was determined using a combination of techniques. The age of subadults, those individuals less than 15 years old at the time of death, was established using stages of dental calcification and eruption (Ubelaker 1989) and long bone length (Johnston 1962). Adult individuals were aged by observing epiphyseal closure of the long bones (Stewart 1979), degenerative changes (Ubelaker 1989), suture closure (Krogman 1978), and, whenever possible, pubic symphysis development (Gilbert and McKern 1973). No attempts were made to
determine the sex of subadults, but several techniques were employed
to determine the sex of adult individuals. These included observations
of morphological differences in the skull and pelvis which are usually
associated with sex. Metrical analysis was also used on the better
preserved cranial and postcranial material to sex individuals (see
procedures in Bass 1987; Giles 1970; Krogman 1978; Steward 1979;
Ubelaker 1989). When preservation permitted, several techniques
were used, improving the accuracy of the determination of age and sex.

Dental attrition or tooth wear has been used successfully in other
studies to investigate diet and dietary change (Cassidy 1984; Miller-
on the effects of diet on dental wear have concluded that in the
Southeast, horticultural dependency, especially a dependence on
maize agriculture, is usually associated with a decrease in dental wear

The degree of dental attrition is determined primarily by the
amount and force of chewing as well as the presence of abrasives in
the food. Several factors are important when considering the specific
effects of a maize diet on dental wear. First, maize is relatively
nonabrasive to the dental enamel, as it is consumed in a refined state
(Powell 1985; Rose et al. 1984), but the tools used to process maize and
other plant foods can indirectly affect dental wear. Stone grinding
tools, for example, produce grit, which consequently becomes mixed
with the food being processed. Ethnohistorical data from the South-
est, however, indicates that in this region during the late prehistoric
period plant foods were being processed in wooden utensils rather than
stone.

The Savage Men never beat their Corn to make Bread; but that
is the Womens Work, especially the Girls, of whom you shall see
four beating with long great Pestils in a narrow wooden Mortar
... (Lawson 1676:216).

Obviously this reference cannot be specifically applied to any of the
three study groups. However, it is tempting to suggest that the South
Farm and possibly the Bryan Farm inhabitants may have used this
technology in light of the absence of stone grinding tools in the
undisturbed contexts at these sites. As stone grinding tools were
recovered from the Vaughn Mound site, dental wear may have been
accelerated. Thus it is expected that dental attrition will be greater in
hunter-gatherer groups who consumed less refined foods and used
technology such as stone grinding tools which can increase grit in the
food. In contrast, agriculturalists who are consuming maize, a less
abrasive food source, and possibly using wooden grinding tools, will
exhibit a decrease in dental wear. Environmental conditions such as
sandy locales can also elevate the amount of grit in the diet, therefore
accelerating tooth wear. Finally, older individuals will exhibit more
dental wear than their younger affiliates. For this study, age is con-
considered when comparing dental wear of the burial samples.

Scott's (1979a, 1979b) dental wear scoring technique provides a
means of rating wear in individuals. This technique involves the visual
inspection and scoring of the occlusal surface of the molar, which is
divided into four quadrants. Each quadrant is then scored on a one-to-
ten scale based on the amount of enamel present. The sum of the scores
provides a measure of wear for a tooth. Lack of observable enamel wear
is scored as one, while extensive dentin exposure is given a ten. Thus
a range of dental wear is provided, with the highest sum for an erupted
molar being forty and the lowest sum four.

Dental caries have also been used to measure differences in diet
(Armelagos and Hill 1990; Larsen 1983; Miller-Shavits and Iscan
1991; Powell 1985, 1988, 1991; Rose et al. 1984, 1991), and caries
frequency is generally low among hunter-gatherers, with an average
of two or three lesions per individual. This number doubles among
agricultural populations (Ortner and Putshar 1981:439). Studies have
demonstrated that populations averaging over two curious lesions per
individual are consuming foods high in carbohydrates (Larsen 1983;
Rose et al. 1984, 1991; Turner 1979). In the prehistoric Southeast,
maize has been identified as a high carbohydrate food source that
increases the number of cavities in an individual. According to some
studies, other foods such as maygrass (Phalaris carolinianus),
chenopod, and knotweed (Polygonum erectum) could also increase the
These plants represent early cultivars in eastern North America, with
maygrass and knotweed being important in some areas as early as
1000 B.C. (Fritz 1992; Smith 1992). Although maygrass has been
reported in Mississippi (Johnson et al. 1983), none of these early
starchy cultivars have been recovered from Woodland or earlier sites
in Mississippi where flotation samples have been analyzed (Rafferty
1993). This supports the notion that prior to maize horticulture,
prehistoric people were hunter-gatherers (Lynott et al. 1986; Steponaitis
1986). It has also been suggested that the absence of these and
other plant remains at the Kellogg site (Atkinson et al. 1980), a
multi-occupational site situated on the Tombigbee River in Missis-
pippi, was due to poor preservation and/or sample bias (Crane 1981:335).
For the purposes of this study, however, it is assumed here that as the
archaeological evidence does not indicate the presence of these additional high carbohydrate plant foods, such plants were not consumed. Finally, an inverse relationship is expected when comparing dental attrition and caries within the burial sample: in hunter-gatherer groups attrition rates will be high and caries incidence low, while in agricultural groups caries incidence will be high and attrition low.

Physical stature has been used by several researchers to measure diet change (Larsen 1984; Larsen and Ruff 1991; Powell 1988, 1991; Ruff 1987; Ruff and Larsen 1990). "Females show a greater decrease in skeletal size and robusticity and stature than males, thus indicating an increase in the percentage of sexual dimorphism in an agricultural group" (Larsen 1984:383). Strontium levels (Hogue 1991) and carbon isotope levels (Hogue and Peacock 1993) in the South Farm burials revealed that males probably enjoyed a diet higher in meat protein than females. This supports the view taken by several researchers that males as hunters in Mississippian society had more access to animals for food (Larsen 1984; Larsen and Ruff 1991; Schoeninger and Peeples 1981). Since maize, a low protein food, was the primary food source for females, proper skeletal development of this sex is affected by diet. In contrast, males, who have access to increased dietary protein, often display greater stature and consequently greater sexual dimorphism is seen in these populations as compared to preagricultural populations (Larsen 1984; Larsen and Ruff 1991; Ruff 1987; Ruff and Larsen 1990). In the earlier groups, where males and females theoretically have similar diets, less differences in their height should be exhibited.

Table 1 provides a summary of the subsistence patterns, relevant tool technology, and expected results for the three burial samples. The use of dental attrition, caries frequency, and physical stature to address questions related to diet and diet change in the three burial samples is at best a preliminary study. Hopefully this endeavor will provide a basis for additional studies in the future.

### Results

Dental remains from the three sites were analyzed according to Scott’s (1979a) dental attrition method, for the first and second maxillary and mandibular molars. The results are presented in Table 2 and Figure 2. Attrition rates are highest for the maxillary first molar only in the Vaughn Mound sample. The Bryan Farm site dentition exhibits the highest degree of wear when the other three molars are compared. In all cases, the burials from the earlier two sites show more attrition than those from the agricultural South Farm site. Age is not considered a major factor contributing to dental wear in this study, as the mean ages of the samples all fall between 30 and 38.6 years (see Table 2). In order to determine whether the attrition differences observed between the sites are significant, Student’s t tests were employed (Table 3). Significant differences occur between mandibular and maxillary wear on all molars from the Bryan Farm and South Farm samples. When the Bryan Farm is compared with the Vaughn Mound, sample variations in molar wear are significant only for the first maxillary molar. Finally, differences in dental attrition between the Vaughn Mound and South Farm site are significant only for the first molars. It appears that the Vaughn Mound and Bryan Farm burial samples are the most similar when dental attrition is compared, while the Bryan Farm and South Farm burials are the least similar.

<table>
<thead>
<tr>
<th>Site</th>
<th>Subsistence Patterns</th>
<th>Recovered Technology</th>
<th>Expectations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bryan Farm</td>
<td>Hunter-gatherer, possibly some maize horticulture. Males may have more meat in diet. No recovered ethnobotanical remains.</td>
<td>none</td>
<td>High to medium attrition. Possible increase in caries. Greater sexual dimorphism.</td>
</tr>
<tr>
<td>South Farm</td>
<td>Maize agriculture/deer hunting. Males had more access to meat protein.</td>
<td>No stone tools for grinding. Possible use of wood grinding tools.</td>
<td>Low attrition. High caries. Greatest sexual dimorphism.</td>
</tr>
</tbody>
</table>
Table 2. Dental attrition scores of first and second molars.

<table>
<thead>
<tr>
<th>Site</th>
<th>M$^1$</th>
<th>M$^2$</th>
<th>M$^1_1$</th>
<th>M$^2_1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaughn Mound</td>
<td>33.3</td>
<td>21.5</td>
<td>28.8</td>
<td>24.8</td>
</tr>
<tr>
<td>standard deviation</td>
<td>(6.2)</td>
<td>(9.6)</td>
<td>(4.8)</td>
<td>(9.1)</td>
</tr>
<tr>
<td>mean age</td>
<td>39.4</td>
<td>36.3</td>
<td>38.0</td>
<td>38.0</td>
</tr>
<tr>
<td>Bryan Farm</td>
<td>27.1</td>
<td>26.1</td>
<td>31.5</td>
<td>27.8</td>
</tr>
<tr>
<td>standard deviation</td>
<td>(5.3)</td>
<td>(6.0)</td>
<td>(4.6)</td>
<td>(4.4)</td>
</tr>
<tr>
<td>mean age</td>
<td>34.0</td>
<td>34.0</td>
<td>38.6</td>
<td>38.6</td>
</tr>
<tr>
<td>South Farm</td>
<td>16.6</td>
<td>13.6</td>
<td>16.3</td>
<td>15.0</td>
</tr>
<tr>
<td>standard deviation</td>
<td>(4.5)</td>
<td>(2.1)</td>
<td>(2.9)</td>
<td>(2.8)</td>
</tr>
<tr>
<td>mean age</td>
<td>35.0</td>
<td>35.0</td>
<td>30.0</td>
<td>30.0</td>
</tr>
</tbody>
</table>

M$^1$ - First maxillary molar
M$^2$ - Second maxillary molar
M$^1_1$ - First mandibular molar
M$^2_1$ - Second mandibular molar

Figure 2. Mean dental attrition scores for the burial samples.

Table 3. Student's t results to test for significance between dental attrition scores in the three burial samples.

<table>
<thead>
<tr>
<th>Sites</th>
<th>Maxillary 1st molar</th>
<th>Maxillary 2nd molar</th>
<th>Mandibular 1st molar</th>
<th>Mandibular 2nd molar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vaughn/Bryan</td>
<td>t=2.16</td>
<td>t=1.05</td>
<td>t=1.13</td>
<td>t=0.87</td>
</tr>
<tr>
<td>df=15</td>
<td>p&lt;.05</td>
<td>df=11</td>
<td>df=15</td>
<td>df=16</td>
</tr>
<tr>
<td>Vaughn/South Farm</td>
<td>t=4.30</td>
<td>t=1.37</td>
<td>t=4.06</td>
<td>t=1.34</td>
</tr>
<tr>
<td>df=11</td>
<td>p&lt;.01</td>
<td>p&lt;.40</td>
<td>df=7</td>
<td>df=8</td>
</tr>
<tr>
<td>Bryan/South Farm</td>
<td>t=3.00</td>
<td>t=3.41</td>
<td>t=5.31</td>
<td>t=3.84</td>
</tr>
<tr>
<td>df=8</td>
<td>p&lt;.02</td>
<td>p&lt;.02</td>
<td>df=12</td>
<td>df=10</td>
</tr>
<tr>
<td></td>
<td>p&lt;.01</td>
<td>p&lt;.001</td>
<td>p&lt;.01</td>
<td></td>
</tr>
</tbody>
</table>

When counting dental caries for each group, it was noted that the South Farm collection possessed the greatest number of caries, at 6.5 per individual. This would be expected with maize-based subsistence. (Figure 3). Bryan Farm specimens had a mean of 1.6 caries per person, which is below the cut-off mean established for maize agriculturists. The 3.0 caries per individual observed in the Vaughn Mound collection, however, was totally unexpected. As starchy seeds, such as maygrass, knotweed, and goosefoot, have not been identified at the Vaughn Mound and other sites that predate the Mississippian period in Mississippi, the number of caries present in the Vaughn Mound sample is perplexing. Although the number of caries per individual at the Vaughn Mound is less than half of the rate observed at the South Farm site, it is unusual that it exceeds the number found in the Bryan Farm sample. It appears that there are some differences in the diets represented by the preagricultural samples, but no explanations are presented at this time.
Due to the fragmentary nature of the postcranial remains from the three samples, stature can only be estimated from femurs. Stature measurements of females from the Vaughn Mound site could not be reconstructed at all, so percent of sexual dimorphism could not be estimated for that site. After measuring the maximum length of femurs, formulas devised by Genoves (1967) were used to estimate stature. The results, presented in Table 4, show that male and female stature increase through time. Data for Bryan Farm and South Farm contradict Larsen's statement regarding increased sexual dimorphism in agricultural groups. Bryan Farm represented a 15.6% difference between males and the single female, while South Farm had only an 8.8% difference. The results of the stature analysis from the Bryan Farm site are totally unexpected if the population is preagricultural. The basis of Larsen's argument is that “women may have had a less mechanically demanding behavioral repertoire than males, hence, a reduction in bone area and skeletal size” (1984:385). Also, since among hunter-gatherer groups women performed most of the activities associated with plant foods, while men did most of the hunting, males had greater access to protein. The stature data presented here may reflect a dissimilar trend of activity patterns or, simply and most probably, errors due to small sample size. Other factors can also influence physical stature. These include genotypes and additional environmental determinants which cannot be isolated in this study.

**Conclusions**

After examining the three burial collections for dental attrition, caries frequency, and physical stature, it was discovered that there may be some validity in using these methods on small populations. Both the data from attrition and dental caries analysis support previous theories concerning diet change. Although there is a good deal of variation in the Vaughn Mound sample, the Vaughn Mound and Bryan Farm samples both had high attrition rates coupled with relatively low caries frequencies, a pattern expected in preagricultural groups. It is suggested here that the Bryan Farm inhabitants probably depended on a hunting-gathering form of subsistence, with maize agriculture not appearing until later. The unexpected caries frequency in the Vaughn Mound site may warrant further investigation into the different foods consumed or food processing technology used in the Archaic and Woodland periods in Mississippi. Information on attrition and caries gathered from the South Farm sample indicated that maize agriculture was important. This was anticipated given the results of carbon isotope analysis of the South Farm sample (Hogue and Peacock 1993). Unfortunately, the attempt to use physical stature and sexual dimorphism as indicators of diet change for small burial collections led to conclusions that were completely opposite of those expected. Since
this is likely due to small sample sizes, such analyses should probably be restricted to large burial samples.

Acknowledgements

The skeletal collections from the Bryan Farm and South Farm sites were made available for analysis by the Cobb Institute of Archaeology, Mississippi State University. Permission to study the materials from the Vaughn Mound was granted by the U.S. Army Corps of Engineers, Mobile District through the Cobb Institute of Archaeology, Mississippi State University. The authors wish to thank Janet E. Rafferty for her helpful suggestions and assistance in providing information on various sites.

S. Homes Hogue is an assistant professor of anthropology at Mississippi State University and William Erwin is a student at Mississippi State University.

References

Armelagos, G.J., and M.C. Hill

Atkinson, J.R.
1974 Test excavations at the Vaughn mound site. Appendix A in Archaeological survey and test excavations in the upper-central Tombigbee River valley. Final report on work done in cooperation with the United States Department of Interior, National Park Service, in fulfillment of contract number CNX00316589.

Atkinson, J.R., J.C. Phillips, and R. Walling
1980 The Kellogg village site investigations, Clay County, Mississippi. A report on work undertaken in cooperation with the U.S. Army Corps of Engineers, Mobile District in fulfillment of Modification Three to Contract Number DACW01-77-C-0015.

Bass, W.M.

Bense, J.A.

Blakeman, C.

1975 Field notes on file at the Cobb Institute of Archaeology, Mississippi State University, Mississippi State Mississippi.

Cassidy, C.M.

Crane, C.J.

Fritz, G.J.

Genoves, S.C.

Gilbert, B.M., and T.W. McKern

Giles, E.

Hogue, S.H.

Hogue, S.H., and C.E. Peacock
1993 Environmental and osteological analysis at the South Farm site (22OK534), A Mississippian farmstead in Oktibbeha County, Mississippi. Ms. on file, Cobb Institute of Archaeology, Mississippi State University, Mississippi State Mississippi.
Jenkins, N.J., and R.A. Krause  

Johnson, J.K., A. Robbins, and A. Shea  

Johnston, F.E.  

Krogman, W.M.  

Larsen, C.S.  


Larsen, C.S., and C.B. Ruff  

Lawson, J.  

Lynott, M.J., T.W. Boush, J.E. Price, and D.E. Nelson  

Report on erosion of Miller III culture burials, Clay County, Mississippi. Ms. on file Cobb Institute of Archaeology, Mississippi State University, Mississippi State, MS.

Miller-Shaivitz, P., and M.Y. Issac  

Mistovich, T.S.  

1981  *Archaeological salvage at the Tissibee creek site (22Lo600) Loudres County, Mississippi.* Final report on excavations undertaken in cooperation with the U.S. Army Corps of Engineers Mobile District in partial fulfillment of Contract Number DACW01-77-C-0015.

Ortna, D.J., and W.G. Putschar  

Powell, M.L.  


1988  *Status and Health in Prehistory: A Case Study of the Moundville Chiefdom.* Smithsonian Institution Press, Washington, D.C.


Rafferty, J.E.  
1993  Settlement patterning as an independent variable: Understanding the similarities in Woodland and Mississippian settlement patterns in the southeast. Ms. on file, Cobb Institute of Archaeology, Mississippi State University, Mississippi State, MS.

Rafferty, J.E., B.L. Baker, and J.D. Elliott, Jr.  
1980  *Archaeological investigations at the East Aberdeen site (22MO819), Tombigbee River multi-resource district, Alabama and Mississippi.* A report undertaken in cooperation with the Heritage Conservation and Recreation Service and the U.S. Army Corps of Engineers-Mobile District in fulfillment of Contract Number C5629(78).
Rose, J.C., M.M. Marks, and L.L. Tieszen

Rose, J.C., B.A. Burnett, M.S. Nassaney, and M.W. Blaueer

Ruff, C.B.

Ruff, C.B., and C.S. Larsen

Scott, E.C.

Scott, S.L.

Scott, S.L., and H.E. Jackson
1989 Aspects of Mississippian subsistence organization: Contrasts in large mammal remains from a homestead and village in the Tombigbee valley. Ms. on file, University of Southern Mississippi, Hattiesburg.

Sims, D.C., M.E. Danforth, J.A. Giliberti, A.M. Montana, and T. McMahon

Smith, B.D.

Solis, C., and R. Walling

Steinbock, R.T.

Steponaitis, V.P.

Stewart, T.D.

Turner, C.G.

Ubelaker, D.H.
Locust Beads and Archaic Mounds

John H. Blitz

The distribution of locust beads has certain affinities with both the distribution of Archaic mound sites and of earth-emergence origin myths. This paper suggests possible connections and their interpretive implications.

It is not uncommon for archaeologists to encounter a distinctive class of artifact that seems designed to subvert all efforts to place them in a temporal and cultural context. Curiosity can only quicken if the artifacts required hours of skilled labor to produce, are composed of raw materials from distant sources, and assume pleasing forms of elegant simplicity. If these objects should also fall within that range of artifacts dispassionately labeled "ideotechnic" by archaeologists and "primitive art" by the general public; if they are zoomorphic representations that once held symbolic meaning in an extinct belief system, then they are sure to attract sustained interest. The ground stone "locust" beads of the Lower Mississippi Valley fit this enigmatic category quite well. And while at present we can do little more than describe their form and distribution, these artifacts pose a host of intriguing possibilities that may yet prove to be either a series of strange coincidences or causally linked.

Locust beads are a distinctive style of zoomorphic ground stone bead with a distribution centered on the Lower Mississippi Valley and the adjacent Gulf Coastal Plain (Figure 1, Table 1). The chronological position of these beads is so poorly documented that they can only be assigned to an interval from 6000 to 3000 B.P. Even when lumped into this long time period, locust beads are one of the first region-wide representational symbols in the Eastern Woodlands.

Although some zoomorphic stone ornaments had been previously referred to as "grasshopper" images (e.g., Ford and Willey 1940:114; Figure 51f), it was Webb (1971) who first defined the class of "locust" beads. He suggested that the beads were representations of the periodical cicada (Magicicada) or southern grasshopper (Schistocerca americana) but perhaps because the beads are stylized, not naturalistic, he applied the covering term "locust." He based his interpretation on a commonly-shared set of morphological attributes: a disc-like projection thought to represent the insect's auditory organ; heads with beak-like ventral mouth parts; curving subdivisions, cross-hatching, or...
Table 1. Locust beads from Louisiana, Mississippi, Arkansas, and Alabama.

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Comments</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Poverty Point, LA</td>
<td>Surface context</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>2. Monte Sano, LA</td>
<td>Conical mound context</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>3. Yell County, AR</td>
<td>Unknown context; provenience uncertain</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>5. Denton, MS</td>
<td>Multiple examples; secondary contexts</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>6. Sinner, LA</td>
<td>Surface context</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>7. Lauderdale County, AL</td>
<td>Burial context?</td>
<td>Jolly 1971</td>
</tr>
<tr>
<td>8. Lamar County, AL</td>
<td>Unknown context</td>
<td>Webb 1971</td>
</tr>
<tr>
<td>9. Calhoun County, MS</td>
<td>Unknown context</td>
<td>Connaway 1977</td>
</tr>
<tr>
<td>10. 22-Mt-503, MS</td>
<td>Unknown context</td>
<td>Connaway 1977</td>
</tr>
<tr>
<td>11. 22-It-551, MS</td>
<td>Unknown context</td>
<td>Connaway 1977</td>
</tr>
<tr>
<td>12. 22-Cb-675, MS</td>
<td>Unknown context</td>
<td>Connaway 1977</td>
</tr>
<tr>
<td>13. Jackson County, MS</td>
<td>Possible shell midden context</td>
<td>This report, Connaway, pers. comm. 1993</td>
</tr>
<tr>
<td>14. Greene County, MS</td>
<td>Surface context</td>
<td>This report</td>
</tr>
<tr>
<td>15. Jackson County, MS</td>
<td>Mound context?</td>
<td>This report</td>
</tr>
</tbody>
</table>

In this paper I will only be concerned with locust beads as defined by Webb. Although they vary biologically and morphologically, I will follow Webb's lead and refer to grasshoppers, cicadas, and locusts similar segmentation of the bead long axis evocative of insect wings, thorax, and abdomen; and a dorsal projection or thinning behind the head that resembles an insect's protothorax (Webb 1971). While individual bead examples may lack some of these attributes, they cluster with sufficient frequency to form a very distinctive artifact class. Nevertheless, the fact that individual beads display considerable variability in size, raw material, and “general appearance” led Webb (1971:113) to conclude that “a spread of a basic concept, rather than manufactured objects, and a more tenuous kind of interaction seem likely.” Webb did not venture an opinion on just what this “basic concept” might be, but he did speculate that “this concept is probably magical, and that the remarkably loud music of the insects is the prime denominator” (Webb 1971:113).

Figure 2. Mansfield bead, Jackson County, Mississippi; Length = 8.4 cm. Drawing by Walter Mansfield.
interchangeably. The beads are too stylized to permit species-specific identification. Readers should note, however, that zoomorphic stone beads which appear more avian or mammalian in form are also found on Archaic sites in the Lower Mississippi Valley. The boundary between Webb's locust bead class and attributes of these other bead forms is not well defined and this variability should be an important focus of research (Connaway, pers. comm., 1993).

Locust Beads from the Pascagoula River Region

Recently, three previously unpublished locust beads from the Pascagoula River region came to my attention. This bead style has not been mentioned in published reports from this area. All three beads are from private collections and the find-spots have not yet been investigated or recorded as sites. These beads illustrate the general stylistic similarity but individual diversity of locust beads.

The first example is now in the collection of Walter Mansfield of Moss Point, Mississippi. It was found eroding from the bank of a bayou near the mouth of the Pascagoula River in Jackson County, Mississippi. The bead (Figure 2) is composed of red jasper. A bannerstone and large projectile point were recovered from the surface in close proximity to the bead (Figure 3). The quartzite bannerstone corresponds to Knoblock's (1939:148) "single-face bottle" form, with a suggested temporal range of 4000 to 2500 B.P. (Kwas 1981:155). The light-tan chert projectile point best conforms to the Kays type, which has a similar morphology and, perhaps, shares the temporal range of the Denton point (Connaway 1977). To repeat, these artifacts are from surface finds, not in association. A bead blank from Lawrence County, Mississippi (Connaway 1981:66-67, Figure 5: category 8) exhibits tabular projections very similar to the Mansfield bead, perhaps representing a different production stage of the same form.

The second locust bead was recorded by Baxter Mann from a private collection. It was discovered in Greene County, Mississippi, near the Pascagoula River (Figure 4). No other information is available at this time. The form of this bead is similar (although not identical) to bead MDAH-1, recovered from the Denton site in the Yazoo Basin (Connaway 1977:101-102; Plate 35-E). The bead was produced from a hard grey stone.

The third locust bead was called to my attention by Dr. Stephen Williams, who located the specimen in the Peabody Museum, Harvard University (Figure 5). In the same lot with the locust bead are 11 ground stone tubular beads that range in length from 8.2 to 1.7 cm. Also included are one diamond-shaped bead (L = 3.1 cm) and one large

Figure 3. Projectile point (top) and bannerstone (bottom) found in proximity to Mansfield bead.
pear-shaped bead \((L = 3.9 \text{ cm}; \text{maximum thickness} = 2.4 \text{ cm})\). At least nine of the fourteen beads in the lot are of red jasper (Connaway, pers. comm., 1993). As is the case with the other two locust beads from the Pascagoula region, the Peabody locust bead has no exact counterpart elsewhere yet shares similar attributes with several specimens (see Webb 1971:107, Figure 1 a, b, c).

![Figure 4. Locust bead, Greene County, Mississippi; Length = 5.4 cm. Drawn from a photograph by Baxter Mann.](image)

The Peabody Museum acquired the beads from the Boston Society of Natural History in 1917. The only provenience information included with the beads stated that they were “from Captain John Grant, Pascagoula, from a mound on his estate.” An article in the Democrat-Star newspaper of Pascagoula, dated August 22, 1874, presents an 1852 description of three mounds on the estate of Captain J. Grant. Two mounds were leveled and artifacts including “clay beads of many colors, etc.” were recovered. The largest mound was described as “about ten or twelve feet high and sixty to seventy feet around.” This location on Yazoo Lake in urban Pascagoula is presently a residential area.

**Locust Beads: Questions about Age and Context**

Almost nothing definite can be said about the age or use of locust beads because excavated specimens from primary contexts are lacking. Initially, Webb (1968) thought locust beads were associated with the Poverty Point interaction sphere but later extended their range to earlier “Late Archaic times” (Webb 1971:106) to include locust beads recovered in surface contexts from sites in Louisiana, Mississippi, and Arkansas that lacked Poverty Point diagnostics. The Denton site in the Yazoo Basin, Mississippi, has produced more locust beads than any other site (Connaway 1977), 23 to date (Connaway, pers. comm., 1993). The major component at Denton was an assemblage of various ground implements and large, crudely-flaked, straight-stemmed projectile points. However, locust beads and Denton points were never recovered in association. Two radiocarbon determinations dated intact midden \((3280 \pm 125 \text{ B.C. and } 3125 \pm 130 \text{ B.C.})\), but neither locust beads nor Denton points were associated with these samples (Connaway 1977:137-138). Most locust or other zoomorphic beads at Denton were restricted to the disturbed southernmost “mound,” unlike other bead types and preforms, which were distributed across the site in no
Table 2. Some possible preceramic earthen mounds in Louisiana and Mississippi (known Poverty Point mounds excluded).

<table>
<thead>
<tr>
<th>Provenience</th>
<th>Comment</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Hornsby, LA (16SH21)</td>
<td>One conical mound, Late Archaic points, radiocarbon samples</td>
<td>Manuel 1981; Gibson and Shenkel 1988:10.</td>
</tr>
<tr>
<td>D. Amite River, LA (16EF3, others)</td>
<td>Conical mounds on sites with Late Archaic artifacts</td>
<td>Gagliano 1963; Gibson and Shenkel 1988:10.</td>
</tr>
<tr>
<td>F. Kieffer, LA</td>
<td>Three conical mounds, radiocarbon samples</td>
<td>Gibson and Shenkel 1980:10.</td>
</tr>
<tr>
<td>H. Vaughn, MS (22-Lo-538)</td>
<td>Small mounds erected over burials, radiocarbon samples</td>
<td>Atkinson 1974; Rucker 1974:114.</td>
</tr>
</tbody>
</table>

discernible pattern (Connaway 1977:117). Possibly, the two Denton site “mounds” were examples of intentional Archaic or preceramic mound construction rather than accretional middens, especially since the two features were recorded as conical mounds in the 1940s (Phillips, Ford, and Griffin 1951:54). Later excavations in the bulldozer-damaged “mounds” were inconclusive in this regard (Connaway 1977:140), but post-Archaic components at the site were minimal. Leveling and spreading of the two “mounds” had occurred prior to excavation.

Interestingly, locust beads share a restricted geographical distribution (possibly due to under-reporting in the literature) that is quite similar to that of reported preceramic mounds (Figure 1, Table 2). Of course, distribution alone cannot serve to correlate the two phenomena. Yet we know that by the Poverty Point era, if not earlier, both earthen mound construction and regional exchange networks of raw materials for personal ornamentation coincide. Let us briefly consider the economic and social dynamics that supported these developments, before returning to a specific interpretation of locust beads.

**Beads and Mounds**

Pan-regional art styles first appear in the Old World Upper Paleolithic (Leroi-Gourhan 1968). This initial expression of representational body ornamentation is thought to correlate with increased social complexity and interaction in hunter-gatherer societies (Conkey 1980). In the Eastern Woodlands, personal ornamentation in the form of ground stone, shell, and bone artifacts first becomes widespread by the late Middle Archaic period (6000-5000 B.P.) (Smith 1986). Conspicuous display of these valued items may signal a greater emphasis on personal prestige and social status expected to accompany the formation of corporate groups. The appearance of larger social groups is consistent with technological and climatic changes that occurred at this time.

In brief, the Middle to Late Archaic periods were characterized by increased use of floodplain/aquatic food sources, which is reflected in evidence of greater sedentism, population growth, and restricted or focused resource territories (Smith 1986; Stepnowais 1986). Once Archaic subsistence economies breached a technological threshold which permitted the tapping of a vast aquatic food source, accelerated economic competition could ensue without threat to the resource base (Hayden 1990). If food surpluses could be amassed, they could be diverted into prestige-building activities and converted into durable
objects of wealth and status. Durable valuables in pre-market societies, whether they function as exchangeable wealth items, serve as emblems of membership in a social group, or otherwise specify a status position, are employed as symbols of social relationships (Weiner 1980; Wiessner 1989; Kahn 1989). The appearance of standardized representational styles of ornamentation in a region implies a widespread sharing or recognition of their symbolic content. In the Lower Mississippi Valley, exchange networks of ground stone objects, including beads or the raw materials to make them, developed ca. 5000 B.P. (Conaway 1977, 1987; Jeter and Williams 1989; Johnson and Brookes 1988) and reached a regional peak with the Poverty Point interaction sphere (ca. 3700-2800 B.P.) (Webb 1977; Morse and Morse 1983; Jeter and Williams 1989). The oldest region-wide representational symbols (anthropomorphic and zoomorphic forms) that can be securely dated are associated with the Poverty Point period. As related previously, it is presently uncertain whether locust beads are Poverty Point or pre-Poverty Point in age.

The Middle and Late Archaic periods also produce the first evidence of substantial cemeteries in the Eastern Woodlands. Drawing on a large corpus of anthropological data, it has long been contended that the formation of formal cemeteries represents the transmission of local rights to territory and resources (Chapman 1981; Saxe 1970). Stated another way, the basic assumption is that “the occurrence of formal cemetery areas is associated with corporate lineal inheritance of crucial and restricted resources” (Charles and Buikstra 1983:117). Although based on ethnographic examples drawn from food-producing societies, Charles and Buikstra (1983) extend the argument to the Middle and Late Archaic periods. They contend that kin group claims to resource territories led to the formation of corporate or descent-based principles that were expressed symbolically by highly-visible cemeteries (or mounds).

In the upper Midwest, this trend resulted in river bluff-edge cemeteries (Charles and Buikstra 1983) and, somewhat later, the knoll-top, mound-like burials of Glacial Kame and Red Ocher ceremonialism (Mason 1981:224). Further south, in the Ohio and Tennessee River drainages, extensive shell middens formed in association with cemeteries. Exchange networks were established, reflecting the escalating demand for nonlocal materials, including personal ornamentation. In the Lower Mississippi Valley and adjacent areas, Middle to Late Archaic cemeteries are less well known. Perhaps this is because they are often obscured by alluviation or other geomorphological processes, but some cemeteries and sites have been investigated (Atkinson 1974; Bense 1987; Morse and Morse 1983:128;

Ramensky 1986). Despite this initial lack of visibility, it was in this region that the intensified production of personal ornaments from nonlocal materials coincided with the oldest evidence of earthen mound construction in the Eastern Woodlands: the Poverty Point phenomenon. Earthen mounds are precociously early in the Lower Mississippi Valley. Even so, we need not consider Archaic mounds extraordinary if we interpret them as expressions of corporate group affiliation and territory claims in this food-rich area.

A limited but growing body of research has raised the possibility that mounds as old as the late Middle Archaic period have been identified in the Lower Mississippi Valley and adjacent areas (Fogelman 1992; Gibson 1992; Gibson and Shenkel 1988; Haag 1992; Neuman and Homburg 1992; Saunders et al. 1992). Nine radiocarbon dates associated with six mounds range from 6200 B.P. to 2400 B.P. (Atkinson 1974; Gibson and Shenkel 1988: Table 1.1, Saunders et al. 1992). To date, limited excavations of suspected pre-Poverty Point mounds have yielded a few flaked and ground stone artifacts of Late Archaic form, organic material for radiocarbon determination, and little else. Form and function remain obscure.

Even if these mounds are proven to be pre-Poverty Point in age, they need not be regarded as anomalies. As monuments or tombs, they are best interpreted as initial, local responses to increased sedentism, territoriality, and corporate group formation. From this perspective, preceramic mounds are merely the precursors of later mound construction that was to appear repeatedly in response to regional florescences of increased social differentiation. If beads and mounds were products of intensified efforts to mark individual and group status, there must be more substantial evidence that connects both to a shared behavioral context. We would not need to pursue the question further, were it not for the fact that the only locust bead recovered in a well-documented primary context was excavated from a preceramic mound.

Haag’s excavations at the Monte Sano mound group support the contention that locust beads and archaic mounds are contemporaneous and, perhaps, linked together in a shared system of meaning. The Monte Sano group consisted of two conical earthen mounds located on an old terrace above the Mississippi River in Baton Rouge, Louisiana. The large mound, about 4 m high and 30 m wide, was excavated in a rapid salvage operation just prior to the site’s destruction in 1967 (Haag 1992; Homburg 1988:51). The larger mound was a single construction episode erected over a low, truncated clay platform. Associated with the clay platform was a single cremation, several Late Archaic projectile points, and tubular stone beads. One of these artifacts was a locust bead of red jasper. The bead is described and
illustrated by Webb (1971:106-108, Figure 1c). Beneath the primary clay platform were two rectangular post mold patterns. A sample of cremated bone produced an uncorrected radiocarbon date of 6200 ± 140 B.P. (Gibson and Shenkel 1988: Table 1.1). Haag (1992) is confident that the associations and radiocarbon determination are securely documented. However, Neuman (1984:27) cautions that “the archaeological deposition at the Monte Sano Mound is complex, and until we are provided with a report detailing the results of the investigations there, the evaluation of this early date would be presumptuous.” Just six kilometers south of Monte Sano are the LSU Campus Mounds. Coring secured carbon for three dates, of which the oldest was an uncorrected determination of 5345 ± 235 B.P., but no artifacts were discovered (Neuman 1988).

Except for the Monte Sano mound example, locust beads are only reported as surface finds or from midden in what is presumably secondary contexts. Assuming that locust beads were rare, valued items charged with symbolism, it is improbable that they would be casually discarded. More likely, locust beads originally entered the archaeological record as burial accompaniments or some other intentional interment (Connaway 1977:117-118). Monte Sano provides the most direct evidence of this. In another case, two locust beads were apparently found eroding from a midden along with human bone (Jolly 1971:134), which suggests a burial association but contextual details are not provided. With exception of Monte Sano, a surface find at Poverty Point, the Peabody bead, and perhaps Denton, the majority of locust beads have been found at sites that apparently lack preceramic mounds. So it is highly likely that the final context of use for locust beads was in both mound and non-mound burials.

Why Locusts?

In the historic period, indigenous southeastern peoples had a special concern for “anomalous” animal species, creatures who combined two or more characteristics of the separate conceptual categories used to classify the natural world (Hudson 1976:139-148). Southeastern “anomalous” animals were laden with symbolic connotations and figure prominently in both oral tradition and art. Because cicadas emerge from the ground, fly, and make an odd noise, it seems probable that they are “anomalous” and thus candidates for visual representation as beads (Morse and Morse 1983:122). The Morses’ suggestion may be elaborated further by noting that southeastern “anomalous” species not only cross boundaries of physical characteristics but also cross the cosmological boundaries of Under World, This World, and Upper World (Hudson 1976:139). Although the cicada as an insect might be expected to be classified with Under World beings, it emerges from the earth to fly and sing. Creatures that defy established emic categories of time are also anomalies (Hudson 1976:141-144). In this regard the cicada is well-qualified as an anomaly, being absent for much of the year only to emerge suddenly with dramatic effect. It would seem that locusts may have served as symbols of emergence and transformation. In the most thorough study of locust beads available, Connaway (1977) concluded that the beads dated from the late Middle Archaic to early Late Archaic periods. After considering the possibility that the beads functioned as symbols of social rank, images of personal tutelars, or clan totems, use of the beads as fetishes was considered the most probable interpretation (Connaway 1977:118-129). However, as Webb noted, regional distribution of such a distinctive iconographic style implies a widely-acknowledged concept, a collective symbolism in sharp contrast to the individualistic power-seeking associated with personal guardians, charms, or fetishes. Also, the rarity of locust beads in the archaeological record implies something other than use as common personal fetishes.

Regrettably, the ability to identify a precise behavioral function other than the fact that they are drilled for suspension and thus were presumably “beads” is handicapped by the lack of adequate contextual evidence. Because the behavioral contexts available for locust beads include the apparent association of a locust bead with a preceramic mound, we must ask if there is a link between locusts as possible symbols of emergence and transformation, and earthen mounds as symbols of corporate groups. Amazingly, such a relationship is found in the emergence-migration myths of the historic Southeast.

Locusts, Mounds, Beads, and Emergence-Migration Myths

Emergence-migration myths are origin or creation stories that relate “the ascent of the inhabitants of the lower world to the earth’s surface and their subsequent settlement and/or migration” (Wheeler-Voegelin and Moore 1957:73). Creation stories that depict emergence from a hole in the earth (either a hill or the symbolic equivalent of earthen mound) have a pan-American distribution, perhaps indicative of great antiquity. In the Eastern Woodlands, they are concentrated in the southeastern culture area, forming a complementary distribution to the northern Earth-diver creation myths (Lankford 1987:109). Emergence-migration stories as myth express multiple meanings. As extensive considerations of emergence-migration myths are available
elsewhere (e.g., Wheeler-Voegelin and Moore 1957; Knight 1981), I wish to stress only a few points: locusts are connected with mounds in at least one well-known southeastern emergence-migration myth; emergence-migration myths unequivocally associate mound construction with corporate group claims of territoriality; and emergence-migration myths explicitly employ mound symbolism to legitimate descent-based principles of corporate group formation.

A direct link between locust representations and mounds as monuments of corporate group territoriality is provided in the emergence-migration myths of the Choctaws (Blitz 1991). To my knowledge, the only other archaeologist who has mentioned a possible connection between locust beads and the Choctaw myth is Gibson (1992). Perhaps the most detailed version is a story told by Louisiana Choctaws in 1910:

Soon after the earth (yahne) was made, men and grasshoppers came to the surface through a long passageway that led from a large cavern, in the interior of the earth, to the summit of a high hill, Nane chaha. There, deep down in the earth, in a great cavern, man and the grasshoppers had been created by Aba, the Great Spirit, having been formed of the yellow clay.

For a time the men and the grasshoppers continued to reach the surface together, and as they emerged from the long passageway they would scatter in all directions, some going north, others south, east, or west.

But at last the mother of the grasshoppers who had remained in the cavern was killed by the men and as a consequence there were no more grasshoppers to reach the surface, and ever after those that lived on the earth were known to the Choctaw as eske ilay, or “mother dead.”

However, men continued to reach the surface of the earth through the long passageway that led to the summit of Nane Chaha, and, as they moved about from place to place, they trampled upon many grasshoppers in the tall grass, killing many and hurting others.

The grasshoppers became alarmed as they feared that all would be killed if men became more numerous and continued to come from the cavern in the earth. They spoke to Aba, who heard them and soon after caused the passageway to be closed and no more men were allowed to reach the surface. But as there were many men remaining in the cavern he changed them to ants and ever since that time the small ants have come forth from holes in the ground (Bushnell 1910:527).

For the Louisiana Choctaws, Nane chaha is a high “hill.” For other Choctaws Nanih Waiya, a large earthen mound that stands today in Winston County, Mississippi, is the focus of traditional emergence-migration beliefs (Halbert 1899, 1901; Swanton 1931). In one version, the Choctaws emerged from the center of the mound, in the words of one Choctaw, just as locusts emerge from the earth to effect a transformation and propagate their kind: “The ancient Choctaw believed that in the beginning of things people came out of the ground at a certain hill and lay about its sides like locusts until they were dried” (Swanton 1931:36). A Creek informant told Swanton that “It is common to find it said that “In the beginning the Indians came pouring out of the earth like ants” ” (Swanton 1928:65). Knight (1989:282) draws our attention to the parallel between the Tukabatchee story in which people emerge “like ants” and Bushnell’s Choctaw myth in which men are turned into ants.

It is common for emergence at a specific location to be linked with a migration from or to a sacred place (Wheeler-Voegelin and Moore 1957:67). In one Choctaw version, the people arrive at the sacred place bearing the bones of their ancestors, construct Nanih Waiya mound, inter the ancestors’ bones, and thus claim their homeland. Whether the ancestors are placed in the mound or come out of the mound, a people are “born” as a social entity and establish a territorial identity. Mounds as symbols are “metaphorical mountains, ant hills, navel, or womb-like ‘earth mother’ representations” (Knight 1989:283). Southeastern mounds were also referred to in terms that may be glossed as “earth dwelling” (Knight 1989:280), a metaphor with widespread parallels in indigenous America (DeBoer 1991). Perhaps by recreating myth through ritual, construction of a burial mound actively expressed these concepts and became a symbol of the earth home from which the ancestors sprang and into which their dead descendents returned. In the nonliterate societies of the Southeast, the corporate group’s mythic history and legitimate claim to the land was objectified in an enduring symbol that all might see, an earthen mound.

Southeastern emergence-migration myths explicitly account for the creation of corporate descent groups such as clans and lineages (Swanton 1928:108-111). For example, in various versions of Southeastern emergence-migration myths people emerge from a cave, mound, or primordial darkness with animals, name themselves for animals they encounter or have animal names bestowed on them at emergence, and thus initiate a totemic relationship (Swanton 1928:111). Even today, Muskogean peoples refer to this episode in creation stories as “the origin of the clans” (Vessey 1988:223). Not just locusts but a variety of animals are associated with emergence-migra-
tion myths and clan names. We might expect multiple effigy forms to appear as clans proliferated.

Additional linkages with aboriginal belief systems are suggested by the notion that beads may have had a role in Southeastern emergence-migration myths. It is well established that for native Southeastern and other Eastern Woodlands peoples, beads are closely identified with divination and communication with the supernatural (Hudson 1976:355-356; Hamell 1983). But in a key passage Milford (1956:34-45,160) tells us that Creek elders used strings of beads as mnemonic devices while relating the origin story of the tribe. It is thus possible that such practices were part of an ancient ceremonial tradition centered on communication with ancestors. If so, it suggests that zoomorphic beads of totemic images may have been manipulated to gain access to the ancestors.

Conclusion

The inferential steps for the social and symbolic interpretations offered here may be summarized as follows:

(1) A well-established body of anthropological theory suggests that mounds as monuments or tombs mark the development of territoriality and suprafamilial corporate identity;

(2) the intensification of personal ornamentation and regional styles accompanies this social differentiation;

(3) archaic mounds and locust beads share a similar time-space distribution;

(4) the Monte Sano site excavation appears to document the association of an archaic mound and locust bead;

(5) locusts, mounds, and the formation of corporate groups are linked in some Southeastern emergence-migration myths, myths that function as corporate group statements of land claims and descent principles;

(6) for some peoples in the historic Southeast, beads served as mnemonic devices in recounting emergence-migration stories;

(7) by implication, locust beads may have been emblematic of a corporate group and its descent-sanctioned rights, perhaps functioning as a totemic symbol.

These links are sufficiently intriguing to warrant discussion, but I am hardly in a position to object to protests that such correlations are fortuitous. Perhaps the beads do not represent locusts. Maybe the Monte Sano bead was somehow intrusive to the mound. Certainly it is not unreasonable to object to an attempt to connect locust beads to oral traditions separated by a minimum of three thousand years. For could not the cyclic emergence of cicadas and grasshoppers be sufficiently dramatic to attract people’s attention at various times and places, without insisting on deep historical connections? Perhaps that is how one should react when Hall (1989:269) points out the inexplicable parallel which exists between the Choctaw emergence-migration myth and that of the Aztecs: “Chapultepec (Aztec chapultepetl, ‘Grasshopper Hill’) in modern Mexico City was the termination point for a period of migrations of the Aztecs. On this hill was an opening ‘which led one mysteriously into inner caverns’ (Brundage 1979:140).” In 1785, an 18-inch long stone image of a grasshopper, ground from red carnelian, was recovered from the hill (Brown 1992:30).

In suggesting that Archaic locust beads may be interpreted with the aid of historic Southeastern myths, I do not endorse a claim that native traditions are static or unchanging. I merely point out, as many scholars have, that in various societies it is possible to detect a cultural leitmotiv, elemental logic, or enduring metaphor that translates into specific representations (Kroeber 1944; Lévi-Strauss 1963; Turner 1974). Such concepts might be expected to have considerable temporal durability in nonliterate traditions, even if subject to multiple reinterpretations. For an Eastern Woodlands example, Hall’s (1977) connection of ancient atlatls to historic smoking pipes comes to mind.

If one symbol were to endure, surely it would be a symbol central to creation myths that express a society’s most deeply-encoded image of itself (sensu Durkheim 1954). In many kin-based, nonliterate societies, perpetuation of the creation myth through ritual is deemed critical to cultural survival, and as such, subject of intensive efforts to memorize, consecrate, and transmit this message across generations. Such cultural reproductions generate visual symbols. Because elders so often attempt to control sacred knowledge to reinforce their influence in kin-based societies, it is these authority figures who are most closely associated with symbols connected to descent principles, and therefore these who are candidates to commemorate through burial in the group’s monumental mound.
I think locust beads represent this kind of symbol, but I claim no privileged insight into the minds of prehistoric peoples. Certainly it is within archaeology’s retrieval capabilities to discover locust beads in contexts that clarify or eliminate some of the functional, chronological, and social questions raised here. But despite the arsenal of theory and method available for an interrogation of the past, the explicit meaning of symbols in extinct nonliterate societies is one question whose answer archaeologists will ultimately be denied.

Acknowledgements

I thank the following individuals for providing access to locust beads or information about them: Dr. Stephen Williams, Peabody Museum, Harvard University; Mr. Baxter Mann, Heritage Preservation Consortium Inc., Bay St. Louis, Mississippi; and Mr. Walter Mansfield, Moss Point, Mississippi. John Connaway of the Mississippi Department of Archives and History, who has been recording zomorphic beads for many years, was kind enough to offer detailed comments on the original draft of this paper; the views expressed here, however, are my own.

John H. Blitz is an assistant professor of anthropology at Bowdoin College.

References

Atkinson, James R.
1974 Test excavations at the Vaughn mound site. Appendix A in Archaeological survey and test excavations in the upper-central Tombigbee River valley. Final report on work done in cooperation with the United States Department of Interior, National Park Service, in fulfillment of contract number CX500031539.

Bense, Judith

Blitz, John H.

Brookes, Samuel O., and Byron Inmon

Brown, D.M., (ed.)

Brown, Ian W., and Nancy Lambert-Brown

Brundage, Burr C.

Bushnell, David I., Jr.

Charles, D.K., and J.E. Bulkstra

Chapman, Robert

Connaway, John M.


Conkey, Margaret

DeBoer, Warren R.

Durkheim, Emile

Fogleman, James
Ford, James A., and Gordon Willey

Gagliano, Sherwood M.
1967 Occupation sequence at Avery Island. *Louisiana State University Studies, Coastal Studies Series 22*.

Gibson, Jon L.

Gibson, Jon L., and J. Richard Shenkel

Haag, William G.

Halbert, Henry S.

Hall, Robert L.

Hamell, G.

Hayden, Brian

Homburg, Jeffrey Allan

Hudson, Charles

Jeter, Marvin D., and G. Ishmael Williams, Jr.

Johnson, Jay K., and Samuel O. Brookes

Jolly, Fletcher, III
1971 Poverty Point zoomorphic beads from the Pickwick basin in northwest Alabama. *Journal of Alabama Archaeology* 17:2.

Kan, Sergei

Knight, Vernon James, Jr.


Knoblock, Byron W.
1939 *Banner-stones of the North American Indian*. Privately Published. LaGrange, Illinois.

Kroeber, A.L.

Kwas, Mary L.

Lankford, George E.
1987 *Native American legends, Southeasten legends: Tales from the Natchez, Caddo, Biloxi, Chickasaw, and other nations*. August House, Little Rock, Arkansas.

Leroi-Gourhan, André

Lévi-Strauss, Claude
Milfort, Louis LeClerc de

Morse, Dan F., and Phyllis Morse

Neuman, Robert W.
1984  An Introduction to Louisiana Archaeology. Louisiana State University Press, Baton Rouge.

Neuman, Robert W., and Jeffrey Hamburg

Phillips, Philip, James A. Ford, and James B. Griffin

Ramenofsky, Ann F.

Rucker, Mark D.
1974  Archaeological Survey and Test Excavations in the Upper-Central Tombigbee River Valley: Aliceville-Columbus Lock and Dam and Impoundment Areas, Alabama and Mississippi. Submitted to the National Park Service by the Department of Anthropology, Mississippi State University.

Saunders, Joe, Thurman Allen, and Roger T. Saucier

Saxe, Arthur A.

Smith, Bruce D.

Steponaitis, Vincas P.

Swanton, John R.

Turner, Victor

Vesey, Christopher

Webb, Clarence H.
1977  The Poverty Point culture. Geoscientific Models and Man 17. Louisiana State University, Baton Rouge.

Weiner, A.

Weissner, P.

Wheeler-Voegelin, Erminie, and Remedios W. Moore

H. Edwin Jackson

Although billed as an introductory text, Brian Hayden's *Archaeology: The Science of Once and Future Things* does not fit the conventional mold. Most introductory archaeology texts fall into one of two general categories: overviews of the nuts and bolts of archaeological inquiry—stratigraphy, dating methods, artifact analysis, and interpretative framework; or else they are compendia of world prehistory—the archaeologically documented cultural sequences for each continent, illustrated by snippets of information about important sites. Hayden's book is neither of these. It is not about what archaeologists do; there is little in the way of discussion of fieldwork, sampling, or site grids (stratigraphy is presented in a sidebar). For instance, Hayden's presentation of dating methods consists of a list of available techniques and a sidebar describing radiocarbon dating. Neither is the book particularly rich in archaeological examples. The entire Lower Paleolithic is represented by a discussion of Olduvai Gorge (Terra Amata is mentioned only as having produced an early wooden bowl). Later prehistory, particularly that encompassing chiefdom and state level systems, is better illustrated, but always in a selective manner.

Instead, what Hayden presents is how to think about the past. His book aims to put anthropological flesh on the archaeological skeleton of past cultures, challenging the reader to go beyond stones and potsherds. What results is a personal view of prehistory and how archaeologists arrive at such views. It is a collection of essays presenting an individual's perspective on how the fundamental issues of human prehistory might best be conceptualized. As such, the presentation reflects a clear bias: Hayden is an unapologetic processualist, organizing and examining the archaeological record within a neoevolutionary framework. To be sure, he represents a mainstream of thought in the archaeological community.

The book is organized into three sections. In the first, "Becoming an Adept," Hayden introduces the rationale underlying archaeological inquiry. In Chapter 1, he argues that archaeology has a scientific basis and is governed by the rules and common sense that govern all branches of science. Thus as Hayden notes, archaeology is to be distinguished from "philosophical speculation, mystic empathy [and] artistic interpretation" (32). Chapter 2 introduces the notion of symbol, and examines the systems by which archaeologists give meaning to artifacts and other aspects of the archaeological record. In Chapter 3 theory and its relation to observation and hypothesis are introduced, and Chapter 4 presents alternative theoretical perspectives on the nature of culture change and also how such theories are related to the archaeologically represented past through ethnoarchaeology and ethnographic analogy.

The second section, "Scrying with the Mirror," examines prehistory. Its aim is not to provide an exhaustive account of what we know about the past, but rather to develop for the reader anthropologically informed conceptual models for assigning meaning to the archaeological record. To this end the emphasis is on ethnography, with archaeological examples mentioned to demonstrate the relevance of ethnographic examples. Chapters 5 and 6 encounter early human history, characterized by hunting and gathering economies. The development of food production and the transition to a Neolithic way of life are the subjects of Chapter 7. Chapter 8 examines the rise of social and political inequality and Chapter 9 presents ideas regarding the expansion of Indo-European and later cultures in western Europe, within the context of an examination of megalithic tombs. The rise of civilization and the nature of state level organization are the subjects of Chapters 10 and 11.

The final section, "Crossing the Abyss," Hayden draws on his contention that archaeology is the science of not only once but also future things. What lessons does archaeology, as the study of long term processes of change, have for contemporary culture and for the course of the human future?

This string of essays forms a complex whole that may be likened to an intellectual journey, one that often follows a twisting path. The path sometimes becomes dim and is occasionally obscured by tangential obstacles. Forays off the beaten track sometimes hinder progress toward the ultimate destination. Nonetheless, the careful and thoughtful reader can always pick up the trail and at the end of the traveller feels better for having made the trip.
It is the power of the journey that recommends this book to the archaeological enthusiast—both professional and avocational. I would recommend the book as a text for upper division archaeological theory courses and even for graduate seminars, where it could be supplemented with additional readings. Whether it will supplant other more traditional texts in lower division introductory classes is less clear. In my experience, students are more interested in information and argumentation and may thus be less willing to take the journey this book demands.

H. Edwin Jackson is an associate professor of anthropology at the University of Southern Mississippi.


Frederick L. Bruier

Geophysical prospecting methods developed for military and other geological purposes, such as seismic investigations and mineral exploration, offer great promise in terms of both efficiency and cost effectiveness. It is also no small consideration that such methods are not only nondestructive but are highly resourceful information acquisition tools for archaeological site investigation. Heimmer has produced a manual describing various geophysical investigation methods with archaeological utility.

The author offers guidelines for geophysical investigations at archaeological sites and attempts to acquaint archaeologists with geophysical surveying equipment and techniques in relationship to interpretational procedures, quality assurances and reference materials. A wide variety of geophysical investigative techniques is covered, including both terrestrial and underwater methods. Heimmer provides a comprehensive review of the topic by systematically discussing advantages as well as disadvantages, constraints and limitations of each specific geophysical investigative technique, including a variety of less well known techniques to give archaeologists a better understanding of their limited yet potentially important application.

Included in this manual is an excellent bibliography of archeogeophysical investigations, the scope of which is seldom matched in articles dealing with the subject. Heimmer's appendices also include a most welcome glossary of archeogeophysical terms to give aid and comfort to archaeologists unfamiliar with the nuances of proper scientific terminology or the mysteries of geophysical jargon. Readers interested in considering these techniques for their own work or who have had some experience working with geophysicists should find the information included in these appendices especially helpful. For example, one appendix graphically describes specific equipment, while another includes specific examples of geophysical interpretation using this equipment.

Heimmer makes no claim to have produced a definitive work in theoretical geophysics. On the contrary, his stated intentions are quite modest, i.e., "to familiarize archaeologists with geophysical techniques potentially useful for locating structures, artifacts and defining sites." This particular goal would probably be met best by using the manual as a supplementary text for a comprehensive course dealing with geophysical prospecting. Perhaps this is exactly why the National Park Service Interagency Archaeological Services has promoted its publication. The manual will also be welcomed by those who appreciate a reference work for archaeologists who have already invested some effort in grappling with the basic geophysical principles and have themselves developed research commitments involving geophysical applications to archaeological problems.

The manual is likely to be of rather limited use to the archaeologist who wants a basic understanding of the geophysical principles involved in each of the methods evaluated by the author. It seems to be premised on the implication that archaeologists don't really need to know all this theoretical background. As far as I am aware, a definitive work that critically examines and describes the geophysics of these methods for purposes of communicating this information to archaeologists has never been written.

The manual will be especially helpful to those archaeologists who are seriously interested in working with geophysicists. It would be a fundamental error to assume that the suite of sophisticated technologies comprehensively described in this manual can be incorporated into archaeological projects like simple metal detecting or...
dBASE IV. Heimmer makes a cogent case for the complexities of the formidable geophysics involved. Let's face it, few archaeologists are trained to do this kind of investigation. The manual is not intended to make instant archeogeophysicists.

But that is not to say that geophysical investigations in the service of archaeology are the exclusive domain of geophysicists. Just as most archaeologists are ill-equipped as physicists, geophysicists are equally unlikely to have the training to do professional archaeological research. The more each of us knows and understands about the other's discipline the greater the likelihood of successful research collaboration.

It is the archaeologist's responsibility to ask the research questions for which geophysical information is needed. Heimmer is quite correct when he explicitly charges the archaeologist to provide an absolutely clear understanding of the desired results from the geophysical perspective. To do otherwise is to expect something for nothing. If the archaeologist does not understand the basic physics involved, how would they ever know which questions to ask or when geophysical interpretations are unfounded or insupportable? To successfully integrate research crosscutting these two very demanding disciplines requires either an archaeologist well grounded in geophysics or a geophysicist well grounded in archaeological research or, better yet, a team that is strong all around.

From the perspective of an archaeologist working with geophysicists on archaeological and cultural resource management problems, Heimmer's concluding remarks regarding his concept of an ideal survey are especially interesting. In addition to the archaeologist biting the bullet and providing the sense of problem, Heimmer suggests that the site under investigation should have easy access, low noise, and high contrast targets. He also suggests that the survey should have the option to excavate all anomalies and allow sufficient time and resources to analyze all data consequences, plus two weeks. Heimmer is the first to admit that these recommendations are rarely if ever met on any archaeological project.

These final recommendations stimulate some thoughts about the most intriguing question raised in Heimmer's manual, i.e., why have geophysical investigations not been employed more often in archaeological investigations? Is it the archaeologists' basic ignorance of the physics that hinders the formulation of appropriate research questions? Are archaeologists reluctant to use more efficient and non-destructive technologies of site investigation because they represent a threat to our conventional stock in trade? After all, is it not in the interest of some of our archaeologist colleagues to excavate more rather than less? Are the costs considered so expensive as to preclude appropriate investment in the basic research necessary to convincingly demonstrate the utility of archeogeophysical investigations? Is there a tendency to play it safe and put our limited resources into tried and true archaeological procedures and avoid both the expense and uncertainty of geophysical investigations that might appear "unproven" to those who do not really understand their application? Why allocate our scarce financial resources on geophysical investigations when the same resources can be put into conventional testing, mitigation etc.?

The real challenge for those seriously interested in applying the geophysical techniques that Heimmer so capably describes is how to find cost effective and efficient ways to convincingly demonstrate how geophysical research can be successfully incorporated into archaeology and cultural resource management. It is relatively easy to design an expensive archaeological project that incorporates state-of-the-art technology following Heimmer's recommendations for the perfect survey. It is far more difficult to design and execute an archaeological research project that establishes realistic priorities and exploits appropriate methods and theories at acceptable cost.

Frederick L. Briuer is a research archaeologist with the U.S. Army Corps of Engineers, Waterways Experiment Station, Vicksburg, Mississippi.


Sam Brookes

Noel Justice has written an intriguing book for amateurs and professionals alike. The most unusual aspect of the book is its format, i.e., types are defined and then grouped into clusters. Clusters were first employed in the Southeast in the first volume of the Normandy report by Charles H. Faulkner and Major C.R. McCullough in 1973. Use of projectile point clusters is an ideal way to handle projectile
points, especially when one is dealing with large numbers of artifacts from a wide area. I once heard a flintknapper criticize professional archaeologists because “they give the same point type several different names.” He was referring of course to archaeologists in different states naming points that are similar to previously named points in other areas. No better examples can be given than the Middle Woodland period. Lowe cluster points variously called Bakers Creek, Bradford, Lowe, Steuben, and Chesser; or the Dalton cluster with all of its members. The flintknapper’s point is well taken: there are a lot of names floating around. I don’t doubt that some of these artifacts can be sorted on morphological attributes or perhaps on material, but the point is that they look more alike than they differ. By using a cluster an entire group of points can be described with regional variants noted.

Justice recognizes several kinds of clusters. He lists Dalton as the first kin, “a basic form” with other forms having “characteristics embodied within the cluster.” A second kind of cluster consists of “one broadly defined type plus named types which represent variation of the type.” It appears to me that his first two kinds of clusters are one and the same. His other three kinds of clusters hang together well and need not be discussed here except to say that a cluster can be different things to different people, and like Justice one writer can have several kinds of clusters. This is important when we look at his overall definition of a cluster. Justice states that “morphological overlap between types is reflected within the technological attributes of overall form, characteristics of manufacture, and resharpening processes. Because of this, types within a cluster often share the same temporal period, may represent part of an evolutionary trend or may be within the same cultural tradition or manufacturing technology” (9). This is well and good, but what is left unsaid is extremely important. Types placed in a cluster because of morphological attributes may not share the same temporal period, may not be part of an evolutionary trend, and may not be part of the same cultural tradition. As to the manufacturing technology, in the Southeast most of it is pretty similar. Justice used morphological characteristics to define clusters, with the result that some clusters contain points that in my opinion do not belong, while other clusters should be combined.

Another problem with clusters is that, theoretically, a tradition of points could span several thousand years. In reality most clusters contain points with a span of several hundred years. Types within a cluster are similar to varieties within a type, but a much greater time span is contained within a cluster. Willey and Phillips define tradition as a “primarily temporal continuity represented by persistent configurations in single technologies or other systems of related forms” (1958:37). A projectile point tradition can be represented by a cluster. Clusters can also represent horizons, defined by Willey and Phillips as “a primarily spatial continuity represented by cultural traits and assemblages whose nature and mode of occurrence permit the assumption of a broad and rapid spread” (ibid. 33). So we see that proper clusters can be used to denote temporal and spatial units. While the points in these clusters may seem to be the same and not worthy of a separate type name (remember our flintknapper’s comments), we must guard against assuming that people who made points alike over a wide area lived very similar lifestyles. Such is not the case, and no better example can be given than Jay Johnson’s review of the 1989 Mid-South Archaeological Conference Report (1993:68-69).

Justice lists 50 clusters, most containing several types. I will discuss several of these clusters that in my opinion have some bearing on Mississippi:

Clovis Cluster: Five point types are placed in this cluster by Justice. All five (Clovis, Ross County, Debert, Holcombe, and Redstone) are well known fluted types. Debert and Holcombe points are later in time than Clovis (9000 as opposed to 11,000 B.C.). Justice cites early dates from Meadowcroft Rockshelter in Pennsylvania but acknowledges that not everyone accepts the early dates from that site. Somewhat disturbing is the fact that since he mentions this site under this cluster one might assume Clovis points have been found there, and such is not the case.

Cumberland Cluster: Contains one type—Cumberland.

Dalton Cluster: Contains five types—Dalton, Quad, Beaver Lake, Greenbrier, and Hardaway Side-notched. This is an interesting grouping. Dalton and the side-notched forms have been found in association at several well-known sites in the Southeast. The association with Dalton demands a placement within the cluster, yet morphological attributes suggest otherwise. To make matters worse, the Quad and Beaver Lake types are closer to Dalton morphologically, but their relationship to Dalton is questionable. This cluster is a bit too inclusive for my tastes. I would prefer a Mid Paleo Cluster of Quad, Beaver Lake, Hinds, Coldwater, Pelican, Arkabutla, Simpson, and Suwanee. For the Dalton Cluster I would like Dalton, San Patrice, and Hardaway.

Scottsbluff Cluster: Contains two types—Eden and Scottsbluff. The cluster should be expanded to contain Hardin and Lost Lake.
Hardin Barbed Cluster: Contains four types—Thebes, St. Charles, Lost Lake, and Calf Creek. I have already stated I do not feel Lost Lake belongs here and I feel uneasy about lumping Calf Creek into this group. A Thebes cluster containing Thebes and St. Charles and possibly Plevna would be better.

Large Side Notched Cluster: Contains five types—Big Sandy, Graham Cave Side Notched, Kessell, Raddatz, and Osceola. This cluster is a perfect example of the pitfalls of morphology. The first three types are Early Archaic points. Justice mentions Cache River as a “morphological correlate.” But I would argue for its being a valid type included in this cluster along with Taylor and Rowan points. I would further drop Raddatz and Osceola and include them plus Godar, Hemphill, and Hickory Ridge in a separate cluster called “Middle to Late Archaic Side Notched Cluster.” The original Big Sandy points are Middle Archaic. What is now known throughout the Southeast as Big Sandy are Early Archaic forms and should be renamed (Tuck 1974).

Kirk Corner Notched Cluster: Contains six types—Kirk, Stilwell, Palmer, Charleston, Pine Tree, and Decatur. I think Palmer, Kirk and Possibly Pine Tree represent a tradition of point-making lasting nearly 1000 years. Charleston points probably do fit into Kirk. Decatur points are morphologically distinct and should not be here, even though they are coeval with Kirk. Stilwell points fit perfectly from a morphological standpoint. However, some evidence suggests that they occur late in the Early Archaic period and may be associated with Scottsbluff.

There are several other clusters relating to point types found in Mississippi that I will mercifully omit. While I disagree with placement of individual types within clusters and even with some clusters, this is an important statement on projectile point classification. Justice goes far beyond the first southeastern application of the cluster concept in the Normandy report. His clusters group types, rather than individual points, and denote (in some instances) time and space relationships. Occasionally, in my opinion, some types are incorrectly placed within clusters because of morphological attributes. It is also important to note that some clusters stand alone because the temporal/spatial data indicate that certain types have no connection even though they may be similar morphologically (i.e., Lanceolate Plano Cluster versus Nebo Hill Cluster). Clusters can be made more meaningful with data that go beyond morphological or metrical analysis. Justice uses metrics, distribution, resharpening, excavated data and associations to bolster the validity of this clusters. Sometimes he pulls it off and sometimes he doesn't.

I am not sure who the target audience is for this volume: I would assume professionals and knowledgeable amateurs. It is certainly not for beginners. In that respect the title is somewhat misleading. It suggests to me that this is an identification guidebook rather than a major attempt to synthesize the data on projectile points for a major portion of the Eastern United States. To his credit, Justice is the first archaeologist to list his types/clusters chronologically rather than alphabetically. The color photographs are neat—you get to see all those different cherts you always read about. The drawings are excellent and the maps are very helpful.

This is the first thought-provoking book on projectile points I have ever seen. I will be re-reading this for years to come and scribbling notes in the margins. My only real complaint is the price. Not everyone wants to shell out thirty-eight bucks for a book on projectile points, but this is a case where you should approach your local library to buy a copy.

Sam Brookes is an archaeologist with the U.S.D.A. Forest Service.

References

Faulkner, Charles H., and Major C.R. McCullough

Johnson, Jay K.

Tuck, James A.

Willey, Gordon R., and Philip Phillips
In recent years the University of Alabama Press has undertaken an expanding program of publishing attractive and inexpensive books on archaeological subjects. *Gardens of Prehistory* is one of the latest offerings. Editor Thomas W. Killon has assembled the refined products of a symposium on prehistoric agricultural systems presented at the fifty-second annual meeting of the Society for American Archaeology held in Toronto in 1987.

The volume is composed of ten chapters, beginning with an introduction by Killon to the theme of "settlement agriculture," defined as the impact of agriculture on settlement, land use, and the archaeological record. Each chapter is a case study of archaeological research on prehistoric agriculture, with a focus on gardens and fields adjacent to domestic dwellings. The regional agriculture systems covered here are diverse: gravel-mulched fields of northern New Mexico (Maxwell and Anschuetz, chapter 3), garden terraces in Sonora (Doolittle, chapter 4), Aztec maguey production (Evans, chapter 5), Olmec land use in Veracruz (Stanley, chapter 7), even gardens buried by volcanic ash in El Salvador (Zier, chapter 9). Summaries by Turner and by Sanders serve to bring the issues into sharp focus by identifying strengths and weaknesses in each case study. *Gardens of Prehistory* is abundantly illustrated with instructive maps, figures, and tables that are clearly presented and easily interpreted. Archaeologists, ethnoarchaeologists, geographers, and others with an interest in traditional agricultural systems of Mesoamerica and the Southwestern United States should have this fine book in their library.

Because readers of this journal will want to know how *Gardens of Prehistory* relates to Southeastern studies, it seems appropriate to consider this connection closely, while keeping in mind that this volume has an entirely different purpose. Those who wish to clarify the relationship of agriculture to settlement in the prehistoric Southeast should examine the innovative methodological approaches. But as one might expect, the ability to transfer these techniques to the Southeast is quite limited. For example, visible surface remains of architecture, agricultural plots, raised fields, marked boundaries, and other improvements serve as a point of departure for several of the case studies. In the Eastern Woodlands, clearly demarcated plots are only rarely encountered (the buried agricultural field at Macon Plateau in the 1930s) or are restricted to only a few localities (the upper Midwest, possibly southern Florida).

Those case studies that utilize artifact distributions (Killon, chapter 6; Stanley, chapter 7; McAnany, chapter 8) and soil chemical characterization (Ball and Kelsey, chapter 10) are more directly applicable to the requirements of Southeastern archaeologists. A case in point is McAnany's study of chipped stone hoe wear patterns, hoe fragments and maintenance debitage, and the distribution of these artifacts around house sites as a measure of cultivation activities. Under favorable circumstances, similar studies might be pursued in the heartland of prehistoric stone hoe use centered on the central Mississippi Valley and its tributaries, although even there hoe chips and fragments may not be sufficiently common to monitor the spatial intensity of agricultural activities. Across much of the lower Southeast, stone agricultural implements are rare or absent. Bone and mussel-shell hoes were used instead (artifacts that have received almost no sustained attention by archaeologists).

As Ball and Kelsey demonstrate, the use of soil phosphate analysis has considerable promise as a tool to examine prehistoric land-use patterns around and between residential structures. Using chemical evidence together with artifact and feature distributions, Ball and Kelsey constructed a detailed (almost intimate) profile of spatial changes in soil phosphate values to identify house-lot gardens, work areas, and possibly even "ancient human and/or canine urinary activity" (249). Of course Southeastern archaeologists have sometimes used soil chemical tests to identify buried surfaces or help define site boundaries, but modern agricultural practices may complicate matters.

As is so often the case in archaeology, the methodological tools available to researchers are far more robust than the interpretive structure used to evaluate results. Various authors in *Gardens of Prehistory* interpret patterns of artifact disposal and soil chemical signatures through arguments based on analogy with modern ethnoarchaeological studies. Killon's (chapter 6) excellent house-lot model is contingent upon agreement with an archaeological record shaped by highly specific cultural, historical, and environmental factors. In other words, the usefulness of such models to archaeologists working outside of these particular circumstances (even elsewhere in lowland Mesoamerica) is questionable. The great variety of prehistoric
agricultural systems documented so well in this book serves to remind researchers that if they wish to attempt similar studies, they will have to develop technical methods and interpretive models suitable to their own particular research areas.

There is little comfort here for Southeastern archaeologists, who frequently evoke direct historical analogies to interpret their finds but lack the detailed modern ethnoarchaeological observations of where people discard their tools, dispose of garbage, organize house-lot garden space, and other linking arguments that strengthen the interpretations in Gardens of Prehistory. And, as Sanders points out, the short-term time perspective of Killion's ethnoarchaeological model is not easily fitted to the diachronic realities of an archaeological record so often formed by multiple occupations and shifting activity areas.

Gardens of Prehistory is an informative source about prehistoric and traditional agricultural systems in Mesoamerica. The volume's contributions set a high standard of research that is sure to be widely emulated in Mesoamerica. It will serve to inspire those in other regions to pursue similar goals. After closing the covers of this book, the reader will not fail to be impressed with the ingenuity, skill, and sheer tenacity that traditional farmers have brought to bear in their centuries-old struggle to transform the land.

John H. Blitz is an assistant professor of anthropology at Bowdoin College.


Jo Miles-Seely

The underlying premise of this book is that textiles were an important component of culture in the prehistoric Southeast. Because textiles are made from perishable materials, extremely few have survived archaeologically. However, textile information does survive on fabric impressed ceramics such as Mississippian "saltpans." Using this source, in conjunction with a survey of surviving southeastern textiles, Drooker attempts to analyze the Mississippian textile industry.

Drooker accomplishes her goal by reconstructing the textile industry at Wickliffe Mound, a Mississippian mound center in western Kentucky occupied between A.D. 1000-1350. A modeling clay impression was made of each sherd selected for the study. Several attributes were recorded in order to ascertain the use and function of Wickliffe textiles. These attributes included fabric structure, twining twist direction and angle, yarn ply, warp and weft elements per centimeter, structural design, edge finishes, fabric condition, and joins or overlaps. Other information was computed from the raw data, including three versions of a textile complexity index. The Wickliffe results were compared to the limited data available from contemporaneous settlements to discover regional differences and similarities and to place the textiles within the larger framework of Mississippian life.

The results of the analysis supported Drooker's hypothesis that "fabrics impressed on pottery at Wickliffe originally were constructed for other purposes than simply to serve as aids in pottery-making." The probable function of the textiles in producing saltpans was to line the earthen molds to aid in lifting the finished vessel. Fabrics also may have been used to facilitate a slow, even drying process to prevent cracking. Drooker maintains that, if the fabrics were produced specifically for these purposes they should display a narrow range of attributes. We would expect them to have simple structures and strength but be fairly quick to produce. Wickliffe fabrics, as represented on saltpans, show a wide range of attributes. Due to the diversity and complexity of the observed textile attributes, Drooker concluded that the textiles were made for other purposes and used secondarily for saltpan production. However, those fabrics selected were relatively large, worn pieces of cloth that originally served as skirts, mantles, and/or blankets. In other words, only a portion of Wickliffe textiles was selected for saltpan production.

Data from Wickliffe textile impressed sherds and extant textiles were compared with regional data. As is often the case, the sample size was too small and incomplete to make any definite conclusions, but some common characteristics as well as regional and temporal variations were noted. Mississippian textiles are commonly made from vegetal fiber yarns with a final "S"-twist. A spindle was probably used to spin the finer yarns. Fabrics were made by twining, knotting, and interlacing (weaving), but the most common fabric structure is "S"-twisted twining. Among the textiles produced were bags, blankets, everyday and ceremonial garments, cane matting, and knotted hunting and fishing nets. Although a weighted or fixed warp may have been
used in making the textiles, Drooker postulates that some of the twining techniques are most easily produced by weaving on free hanging warps, supported only at one end. Structurally decorated textiles are more common in the northern part of the Middle Mississippi region. As might be expected, the finest and most complex fabrics come from the elite mortuary contexts at Spiro and Etowah. Weft-faced fabrics appear to be more typical of the Early Mississippian period, while structurally decorated textiles are more common later.

As a final comparison, the author ventures to interpret the economic and social importance of Mississippian textiles. For example, she cites evidence from the first Spanish expeditions that textiles such as shawls were stockpiled and available to people in authority to give as presents to foreigners. Also, complex ritual textiles may have been part of the elite exchange network along with other exotic goods. Even though the data are not complete enough to understand fully the role of textiles, Drooker has made it clear that the Mississippian people had a sophisticated and diverse textile tradition.

The book is well organized and relatively easy to follow for an in-depth study. A summary of Mississippian subsistence, settlement patterns, and regional interactions is included, which is convenient for those who might not be familiar with the basics. Most of the sections that deal with detailed information are summarized, although more could have been done. There are many maps, graphs, and photographs to illustrate the descriptions. Fortunately, the photos of the textile impression molds are clear, allowing the reader to follow Drooker’s discussion. A glossary is included for those not familiar with the terminology.

Although she is not the first to use fabric impressed pottery to ascertain textile information, Drooker has made a significant contribution to our understanding of Mississippian textile production and use. This will be a necessary reference for anyone wishing to study North American prehistoric textiles.

Jo Miles-Seely is collections registrar for the Mississippi Department of Archives and History Old Capitol Museum and an accomplished weaver.


Jay K. Johnson

Sometimes I think Pat sends me things to review that she thinks I should read. The central theme of this collection of essays commemorating the 300th anniversary of the founding of the Arkansas Post is the Quapaw paradox. Sounds like an Arkansas problem, so why should I worry about it? This monograph makes it clear that the debate over the ethnogenesis of the Quapaw is directly relevant to understanding the late prehistory and protohistory of Mississippi. Moreover and more importantly, these eight papers by prominent archaeologists, historians, and ethnohistorians demonstrate the broader relevance of the problem to any anthropologist working at the boundary between prehistory and history.

The paradox is that it is difficult to reconcile the ethnographical data on the Quapaw with the archaeological data from northeast Arkansas. As Michael Hoffman has shown here and elsewhere, the Quapaw, by almost any measure, appear to have been a late arrival in Arkansas. In his contribution to this volume, Hoffman reviews the ethnographical data on architecture and amply documents a large, oblong, bark-covered structure as the basic house form. This stands in contrast with the square and rectangular daub-covered houses found in the archaeological and ethnohistorical record of the Midsouth. Hoffman cites numerous parallels in the Midwest and Eastern Plains. The distribution of similar house forms overlaps the historic distribution of other speakers of Dhegiha Siouan, to which language family Quapaw belongs. Patrilineal clans also set the Quapaw apart from their neighbors in Arkansas and Mississippi.

In fact, there is no comprehensive ethnohistory of the Quapaw, and George Sabo had to rely on data from other Siouan peoples, particularly the Omaha, in order to reconstruct the social and ritual context of French-Quapaw interaction. His success in clarifying events which were obviously incomprehensible to the Frenchmen who recorded them serves as an additional measure of the fundamentally Siouan nature of the Quapaw. This paper also underscores one of the basic principles of ethnohistory. Each of the participants in an event brings to his own cultural perspective as well as personal goals and biases.
The historical record must be adjusted for these factors before it can be used by the ethnohistorian. Sabo does a good job of demonstrating that the Quapaw were really different from the French. Language wasn't the only barrier to communication.

Pat Galloway explores the other side of the interaction. As members of the western cultural tradition, it is much easier for us to make the mistake of failing to consider differences in the European perspective. French, English, and Spaniards all had different agendas in the Colonial Southeast which changed through time and varied with individual. One of the Frenchmen stationed at Arkansas Post defected to the Carolinas and led an English expedition to the Quapaw at the beginning of the 18th century. Galloway marshals a variety of documentary evidence and uses this incident to cast light on a complex set of national and personal motivations during this dynamic period.

Morris Arnold, in his introduction to this volume, notes that "Galloway demonstrates how a mature and experienced historian can use her sense of the possible to reach revealing conclusions from relatively little direct evidence" (4). In fact, this is the kind of an introduction that makes it hard to write an original review; he does such a good job of overviewing the papers which follow. Arnold also wrote a chapter in which he uses primary documents to dismiss the likelihood that German colonists had been settled on the Arkansas River before moving to the Mississippi River just north of New Orleans. He documents the origin of this myth and traces its transmission through a sequence of Arkansas histories. This provides a sobering lesson for archaeologists who are learning to use the data of history.

Another theme which Arnold raises in his introduction and article is the relative neglect of the colonial period by Arkansas historians. Part of the problem, and this comes through in most of the papers in this volume, is that nearly all of the colonial documents are French and the region which was to become Arkansas was relatively unimportant to the French. Samuel Dickinson discusses one aspect of this neglect. Although the Arkansas Post was the first European settlement in the Lower Mississippi Valley, the effort to bring Christianity to the Quapaw was sporadic at best. Dickinson as well as Sabo outline what is known about Quapaw religion, and much of it was similar to that of other Siouan tribes. It was the native religion rather than Christianity that the Quapaw took with them to Oklahoma in 1826.

If the ethnographic data, including the Quapaw migration myths, were all we had to go on, there would be no problem. The Quapaw entered the area around the mouth of the Arkansas River relatively late in the prehistoric or early the protohistoric period. However, the paradox arises when the archaeological data are consulted. The protohistoric ceramics from the region where the Quapaw were located historically are very much like contemporaneous ceramics from a much broader area of the alluvial valley. What's more, they are the culmination of the ceramic tradition which is firmly rooted in the prehistory of the region. There is no detectable evidence of an intrusion of foreign ceramic elements from the Siouan heartland to the north. Dan Morse reviews the archaeological data and argues that the province of Pacaha which Soto visited in 1541 was likely the Quapaw. He goes on to conclude that the Quapaw represent a coalition of the survivors of the breakup and decimation of this and other Lower Valley chiefdoms following the Soto entrada. Given our current understanding of Quapaw phase ceramics, this is the only reasonable conclusion.

However, John House's paper shows that we have a good deal more to learn about this ceramic complex. House combines data derived from his study of private collections from the region around the Menard-Hodges site with published and archival data. Menard-Hodges has a long history of research going back to C.B. Moore and James Ford. Ford believed it was the location of the Quapaw village of Osoつ, which was occupied at the time of the founding of the Arkansas Post. Perhaps the most important conclusion which House reaches is that the Quapaw phase, as Ford and his co-workers defined it, covers a much longer span of time than originally thought. In a detailed description of mortuary vessels, some of which are reported for the first time, House documents a basic Mississippian complex with elements which are reminiscent of Caddo, Natchez, and Tunica pottery.

The Tunica motifs raise another vexing aspect of the Quapaw paradox. Even if you disregard the remarkable ethnohistorical differences between the Quapaw and all of their neighbors and conclude, on the basis of the archaeology, that they are indigenous to the region at the mouth of the Arkansas River, you still have to derive the Tunica from the same general region. Current evidence suggests that the Tunica crossed into the northern Yazoo Basin of northwest Mississippi late in prehistory. How can this same ceramic tradition give rise to two very different ethnic groups? It appears that archaeology has failed us. It is not from lack of work. This portion of the Lower Valley has been the focus of an inordinate amount of archaeological research during the 20th century. Ceramics have been an obsession; the region abounds with phases, subphases, types and varieties. However, the primary goal in these studies has been chronology with a secondary attempt to differentiate regional patterns. It should come as no
surprise that categories designed to measure space-time systematics fail to distinguish ethnic groups.

While the question of Tunica origins serves to underscore the shortcomings of the traditional approach, it also points the way to a likely resolution. Jeffrey Brain (Tunica Archaeology, Peabody Papers 78) has spent the last twenty years tracing the Tunica through documents and archaeology. Beginning with known Tunica sites, he has documented the evolution of the relatively minor ceramic design elements which distinguish Tunica pottery within the general ceramic tradition of the Lower Valley. As House, Hoffman, and others have suggested, Quapaw archaeology should begin with sites that are known to be Quapaw on the basis of ethnohistorical data, pinpoint those factors that are Quapaw, and work backward. Brain brings up another aspect of the Quapaw paradox that is not covered by any of the papers in this volume. There is a distinct tool assemblage, the Oliver lithic complex, which shows up on a late protohistoric time level and appears to correspond with the historic location of the Quapaw and other Dhegha Siouan speakers to the north. Ceramic continuity and lithic "intrusion," that's interesting. As Brain points out, there are also possible functional/ecological explanations.

There is then, a methodological message here, particularly for those of us in Mississippi where Chickasaw, Choctaw, and Natchez ceramics are the end product of geographically separate ceramic traditions and easy to distinguish. The correlation between material culture and ethnic divisions is not always as clear as archaeologists would like. Traditional analytical approaches were designed to answer traditional questions and may not be up to the task of differentiating historic tribes. We will need to refine our techniques if we hope to take advantage of the remarkable opportunity for anthropological research which is provided by the protohistoric and early contact period. On a more immediate note, we'll never be able to figure out what was going on during this time period in the northern Yazoo Basin without reference to the archaeology, since the early historical documents pay little attention to the region. And we'll never be able to figure out the archaeology without reference to the Quapaw paradox. I can think of no better place to start than this volume.

Jay K. Johnson is a professor of anthropology and Associate Director of the Center for Archaeological Research at the University of Mississippi.

The Ables Creek Site: A Protohistoric Cemetery in Southeast Arkansas, by H. Edwin Jackson. Fayetteville: Arkansas Archeological Survey Research Series No. 47, x, 126 pp., figures, plates, bibliography, index. $12.00 paper.

Patricia Galloway

Ed Jackson's report on the Ables Creek protohistoric cemetery site will appear in two volumes; the present one is the first, reporting data collected in the field and chronological and structural interpretation, while the second will contain bioarchaeological analyses.

To get the carping out of the way first, the volume suffers from the by now familiar production quality problems that stem from the Survey's apparently compulsory use of the Arkansas Department of Corrections print shop, although one wonders why the design of the volume could not have been altered to use less white space, leading to fewer pages, the saving on which could have been spent on better quality printing. It is just a shame that the good work coming from the Survey has to be clothed so poorly. It would be nice to find fewer typographical errors, too.

That said, I find this to be otherwise an excellent volume because it panders to my current needs for detailed studies of Southeastern burial practice. The report describes the excavation of just over half the surface area of a Tillar complex cemetery in southeast Arkansas that was uncovered during an episode of land-planing in 1986. In three weekends large crews of volunteers—including professional archaeologists—uncovered 169 square meters and excavated more than 133 burials, judged to represent perhaps 75% of the total number on the site. (Parenthetically, one would hope that this kind of destruction is now under better control than it was seven years ago.)

And lo and behold, in chapter 3 Jackson has actually provided a detailed description of each individual burial, including provenience, depth, skeleton number, position, estimated age, orientation, condition, artifact associations, and additional comments. Drawings are even provided where the burial was intact enough to make their presentation worthwhile. In addition, Jackson has synthesized the data to provide as thorough an analysis of burial program as is possible based upon field assessment of skeletal data. Unless you have tried to carry out comparative study of mortuary ritual in the late prehistoric
Southeast you are probably assuming that a report with these features is routine, but you are wrong; it is a relative rarity.

Chapter 4 treats pottery, and although the pottery on this site was relatively sparse—partly due to the disturbed conditions, partly due to the fact that many burials were unaccompanied—there is a complete LMS-style treatment of the pottery types and varieties found to be present, together with detailed description of the eighteen reconstrucible vessels found (although the text refers to 17 on p. 75), followed by a synthetic description of the ceramic complex at Ables Creek. Drawing upon unpublished data from the region as well as from this site, and making the effort of Hally, Rolingson, Jeter, and Kidder in this and neighboring regions, Jackson proposes six new named varieties of recognized types to fill in for the relative neglect of the region's local types in published typologies. Jackson chose this strategy rather than stretching the definition of existing varieties on the assumption that there would be advantage in the explicit delimitation of variability that might prove to correlate with prehistoric ethnicity.

The assemblage dovetails with neighboring protohistoric collections, and Jackson dates the use of the cemetery to the whole of the sixteenth century on the basis of the distribution and proportion of types represented, pointing to the possible identification of an early Tillar phase. No historic European artifacts were found (shell beads, a gorget, pendants, and ear plugs were present), but Jackson thinks that the site was being used throughout the sixteenth century. In the penultimate chapter he offers some interesting analyses of horizontal distributions of pottery types and correlations between pottery chronology and burial orientation that seem to confirm the pottery sequence suggested. The trends revealed in the data allow the suggestion that later burials had a greater tendency to contain multiple burials and to be more densely placed, thus perhaps allowing the conclusion that the late sixteenth century population at Ables Creek was undergoing demographic stress. This is a neat example of conservative use of fragmentary data that will provide clearly-defined hypotheses for testing when the analysis of the skeletal remains is carried out.

The final chapter of conclusions continues the analysis of mortuary patterns into a useful discussion of the degree to which variability in mortuary program as recovered archaeologically may reflect intermediate as well as final stages in mortuary processing. This consideration, too, leads to the conclusion that the temporal distribution of bundle burials at the Ables Creek site provides evidence of demographic disruption. Finally, Jackson agrees generally with

Jeter's "maximum Tunica hypothesis" in arguing that the Tillar phase as represented at Ables Creek seems to show ample connections with both Tunica assemblages to the east and Koroa assemblages to the south.

Mathematicians like to refer to theses that are clearly and parsimoniously argued as "elegant," and though the present work is limited by prior damage to the site and is dressed by K-Mart, it is as far as I am concerned a model of presentation of mortuary data, and a fine example of what can be done with it to address important processual and historical questions. Under the new dispensation in mortuary studies that takes the concerns of native people into account, it is studies like this that can speak to those concerns.

Patricia Galloway is Special Projects Officer with the Mississippi Department of Archives and history.