Mississippi Archaeology

Contents

Comments from the Editor
Patricia Galloway

A Case of Mistaken Identity
Samuel O. McGee

Observations on Thermal Treatment of Citronelle Gravel from Louisiana and Mississippi: An Archaeological Assessment
Wilkie J. Collins

Prehistoric Settlement in the Upper Yocona Drainage, North Central Mississippi
Jay K. Johnson

An Engraved Bottle from the Nubmer Site, Northern Yazoo Basin, Mississippi
John Connaway

The Dorothy Lowe Cache
Jean S. Hartfield

19th Century Choctaw Indian Reservation Sites in Lowndes County, Mississippi
Rufus Ward

Everyman's Guide to Projectile Points: Part IV
Samuel O. Brookes

The De Soto Entrada into the Lower Mississippi Valley
Jeffrey P. Brain

Technical Origins for Chickasaw Combed Ceramics: An Ethnohistorical Hypothesis
Patricia Galloway

Review: Pre-Columbian Shell Engraving from the Craig Mound at Spiro
John Connaway

Mississippi Highway Department
Archaeological Reports
Robert Hyatt

Archaeological Investigations Reported on by the Center for Archaeological Research, University of Mississippi
Robert M. Thorne

Correction
72
COMMENT FROM THE EDITOR
Patricia C. Gallaway

Once again, I am glad to say, we have a gracious plenty of papers for you to read. I am especially pleased by the contributions from amateurs in this issue; let other members of the MAA who have been reticent about writing up their work be encouraged by this fine showing. We are steadily working to complete a listing of all archaeological reports produced in the state about the archaeology of Mississippi, and I thank the Mississippi Highway Department and the Center for Archaeological Research for moving us several steps further toward this goal. This issue is still strong on lithics, but ceramics are gaining with a little editorial assistance.

There is a need for more information in general on ceramics, particularly outside the Mississippi Valley. Perhaps someone would undertake to write a review article summarizing current research on ceramics in another region of the state?

As you will not be receiving this issue before Christmas, you may despair of seeing your copy of Anthology of Mississippi Archaeology before Easter. Never fear. Mississippi Archaeology is going to be late this time because we are working on both at the same time. If all goes well, the Anthology will go to the printer by the first week in January and can then be in the mail to you at the end of the month. I hope those of you who joined the MAA for the Anthology will stay for 1975 and beyond, as we have some fine papers promised and a lot of Association activity planned.

I have been trying, as I think most readers will have noticed, to move toward making Mississippi Archaeology the journal of record for archaeological activity in the state. This cannot be done if Mississippi research results are published in other journals, yet there is often good reason why they should be. So, one request: if you will be publishing elsewhere on a Mississippi topic, please write a two- or three-page summary of your findings for Mississippi Archaeology, with reference to the complete publication. Remember the students, who have no affordable means of keeping in touch with the latest findings unless we can manage to make Mississippi Archaeology the journal of record.

The past two years there has been less and less funding available for archaeological research as large federal projects waned, but in the period of even tighter funding that we are doubtless facing, there is much that can be done to consolidate the vast gains in data that were made during the peak years. Several of the projects reported in these pages over the past few years have shown that the crucial element in stretching small funding to its maximum is focused research design. The effectiveness of such a research design can be increased still further, and its contribution to archaeological research in general made greater, if it is developed in the context of regional research goals. Efforts toward a regionally-oriented state plan for archaeology have been made in the past, with partial success because the fast pace of contract research made it hard to find the time to develop a plan in as much detail as is required for effectiveness. Conditions have changed; it would seem that we now find ourselves with adequate time for the task.

On another note, many of you may have heard that I am leaving NDAH. This is not the case; during 1975 I will be working at NDAH one day a week and continuing to edit Mississippi Archaeology and the Newsletter. Both will continue to be mailed from Jackson, and anyone with contributions for either may write to me at the same address.

A CASE OF MISTAKEN IDENTITY
Samuel D. McGahey

ABSTRACT

It is proposed that bifaces which have been called Morrow Mountain points in west central Mississippi are actually preforms for the Late Archaic Shumla point.

In an article in Mississippi Archaeology in 1975, I presented a problem with so-called Morrow Mountain points in central Mississippi (McGahey 1975:2) in which I questioned their position in the Middle Archaic and suggested that they were Late Archaic in central Mississippi. This article was followed by a response from John Conaway and Dan Brookes (Brookes and Conaway 1975:5), which took issue with my thoughts on the subject. The recent discovery of other such points has reawakened my interest in the problem.

Figure 1 illustrates eleven Morrow Mountain points from two sites in Yazoo County (Y 622 and Y 696) on a stage four wonder belt of the Mississippi River. Saucler dates this wonder belt at 4700-2800 years ago (Saucier 1974:22), much too young a surface for the dates usually assigned to Morrow Mountain which should date between 6000-8500 years ago (Perino 1971:64). The surface associations at this site are predominantly Late Archaic, although later material is also present. The Late Archaic surface associations are Pontchartrain, Shumla, and points similar in form to both. There are no Middle or Early Archaic points present with the possible exception of the Morrow Mountain forms. The sites, which are on the same eroding bluff, are approximately three miles of the valley escarpment to the east. Early artifacts are occasionally found on the surface of this geologically young area, presumably current with the recent inhabitants. It is therefore possible that the Morrow Mountain points are there for this reason. I consider this unlikely, however, since most occurrences of early points in these late contexts are few in number on any one site.

There are good indications that the local Morrow Mountain form is a stage in the reduction of Shumla points or closely related forms. Several observed facts support this conclusion: the entire sequence of projectile point manufacture is present on these two sites. The blanks are large and are in various stages of being reduced to preforms. There are narrower, thicker ones which seem destined for eventual working into Pontchartrain or Knife points, and there are those more broadly proportioned ones which seem destined to become Shumla points. The Shumla points in west central Mississippi are of a good to excellent quality of craftsmanship for the Late Archaic Period. They are thinner proportionally to width than any other Late Archaic Point type in the area. This is also a feature of the local Morrow Mountain points.

Table 1 lists the measurements in millimeters of the length, width, and thickness of the recorded Morrow Mountain and Shumla specimens from the two previously mentioned sites. As indicated by specimens A, B, C, and E of Figure 2, most Shumla points considered in this paper have been pressure retouched and/or reharpened along the blade margins thus reducing their width and probably also their length in the process. The retouching does not significantly affect their thickness, however, since it is primarily confined to the edges of the blades. This is reflected in the statistics, the average thickness being 7.86 mm for Morrow Mountain and 7.62 mm for
Table 1. Metric Data in mm

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Shumla. The average dimensions for the two types are also very close in width and length with the Morro Mountain specimens being slightly wider and slightly longer at 41.9:36.9 and 58.4:54.9 mm. The smaller dimensions would be expected in a situation where an advanced stage preform is being reduced into a finished biface.

The apparent degree of completion of the Morro Mountain specimens varies widely from examples such as Figure 1E through K, which have been completely decorticated, to specimens such as Figure 1A, B, and C, which exhibit considerable cortex.

The fact that twelve of the twenty-one Morro Mountain specimens are broken (52.4%) is an interesting contrast to the lower ratio of seven of nineteen broken Shumlas (36.8%). This represents a high rate of transverse fracture, which is a frequent occurrence in the reduction process on advanced stage preforms, especially those with high width to thickness ratios. The W/T ratio of the Morro Mountains in this study averaged 5.33. It is 4.84 for the Shumlas. This difference is probably the result of edge reharpening or pressure retouching.

Finally, it is apparent from the outlines of the illustrated specimens in Figures 1 and 2 that an essentially diamond shaped preform could have very easily led to the Shumla shape.

In conclusion, it seems quite likely that most or perhaps all of the Morro Mountain points in the west central Mississippi area are Late...
Archaeal advanced stage conforms for points such as Shumla. There should be an attempt made to correlate surface associations of these types. Excavations are also needed of sites of that period where hopefully stratigraphic position and C-14 dates would contribute to a solution of the problem.

Acknowledgements

The collections from sites 22-Ys-622 and 22-Ys-696 were loaned by Steve Little and James House, two dedicated amateur archaeologists from Jackson. Their contribution to this effort is greatly appreciated.

Samuel O. McGeehey is Chief Archaeologist with the Mississippi Department of Archives and History.

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Ferino, Gregory

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OBSERVATIONS ON THERMAL TREATMENT OF CITRONELLE GRAVELS FROM LOUISIANA AND MISSISSIPPI: AN ARCHAEOLOGICAL ASSESSMENT

Willy J. Collins

ABSTRACT

This paper will present a general overview of the occurrence of some lithic materials from the Citronelle Formation of southern Mississippi and Louisiana and will examine some of the requirements and peculiarities associated with intentional thermal alteration of these gravels by the aboriginal inhabitants of the area. Technological and archaeological likelihoods will be discussed and will be based on research, archaeological observations, and experiments in lithic procurement and reproduction as they pertain to the local environment of the Citronelle Belt. This paper is by no means a complete treatise on the subjects, but may serve to familiarize interested individuals with some of the more obvious aspects and speculative possibilities of the aboriginal thermal alteration of these locally abundant lithic materials.

Some time during the Pleistocene and Pliocene epochs of geologic history large quantities of alluvium were deposited in an area that extends across the north coastal plain of the Gulf of Mexico. These deposits occur as a series of tilted depositional plains and are composed of ferruginous sands, clays, and gravels of various sizes. In the Mississippi Valley area
these deposits are collectively known as the Citronelle Formation. The coarse gravels of the Citronelle are predominantly of Paleozoic marine origin, and consist of chert and other siliceous remnants of rocks formed in what are today the Mississippi River system basins and adjacent uplands. Areas in the Citronelle Belt that have been subject to significant uplift and erosion often contain exposures of relic riverbeds that consist predominantly of gravel up to eight inches in diameter, and it is in these abrasion-resistant gravels that have been used by the aboriginal inhabitants of the region as a source of raw material for the manufacture of chipped stone tools and projectile points. For time to time and in circumstances of special need materials were imported into the area, but the majority of the lithic industries of southern Mississippi and Louisianas have been based on the use of chert from the local Citronelle deposits.

Typical high-grade examples of Citronelle chert are tan to brown in color, with some denser materials ranging into translucent grey and grey-brown. Though tan, brown, and grays predominate, a large variety of materials are present in limited quantities, ranging from pure white chalcedony to dense black cherts that may grade into flint. Under magnification, most examples exhibit some translucence. Prominent in samples of Citronelle chert are fossiliferous specimens that include replacements, casts, and voids in the form of crinoid stems, mollusks, foraminifera and bryozoans. In many of the more translucent pieces the fossiliferous character is less discernable, and under magnification the appearance is that of a transparent amorphous material that contains clouds, spots, and specks of an opaque nature.

It is to be noted to the lithic technologist that despite the relative density of the Citronelle cherts, examples of a homogeneous nature suitable for advanced flint-knapping techniques are rare in large pieces. Thermal alteration has been used to some extent by many of the aboriginal cultures of the Citronelle Belt to facilitate the use of this abundant local material.

Thermal alteration begins to take place at temperatures of around 200 degrees centigrade, but for best results Citronelle gravel should be subjected to 300 to 400 degrees centigrade for several hours. To prevent destruction of the material, heating and cooling should be very gradual and a 400 degree maximum should never be exceeded. A 45 degree per hour rise or fall in temperature can generally be considered a safe maximum. With these requirements in mind we can expect that the best treating process will take a minimum of 24 to 48 hours if a maximum beneficial alteration is desired. Under the conditions in which aboriginal heat treating processes would occur, considerable effort would be required to fulfill these requirements, so much care would probably be exercised in the selection of raw material.

The form of occurrence of Citronelle gravels necessitates certain special effort in procurement and initial reduction in order to obtain material usable in either a natural or thermally altered state. Imperfections in raw material take several forms which include variations in grain size and degree of silitification, cracks, and alterations of the cortex layer. These imperfections affect the usability of unaltered materials, but are of particular importance when thermal alteration is intended. The high temperatures necessary for thermal alteration will destroy a varying percentage of the blanks, spalls, and preforms that are subjected to the process. Accordingly, aboriginals would probably seek to heat Citronelle gravels in such a form as would insure the lowest

Figure 1. Citronelle Formation Exposures in Mississippi (After Geologic Map of Mississippi, Mississippi Geological Survey, 1976)
percentage of destroyed material.

Natural pebbles and cobbles completely encased by cortex are particularly susceptible to destruction upon heating. This may be due to varying rates of expansion between the cortex and the outermost altered interiors or it may be due to the higher incidence of cracks hidden by the cortex. For this reason, some decortication and primary reduction of the core would be desirable in the preparation of material to be heated. Natural Citronelle chert cores are much harder to thin than the thermally altered end product, so when heat treatment was being contemplated, extensive thinning prior to heat treatment would be inefficient and unnecessary. It seems therefore that Citronelle chert prepared for heat treatment should have enough cortex removed to lessen the effects of varying coefficients of expansion and to ascertain that the interior is homogenous and crack-free. Any work beyond this point is much easier if delayed until after firing. Lithic technologies that would best facilitate this process would include some decortication and primary reduction of small cores or a spall manufacture process (as described by Waldorf 1979) for larger pieces of raw material.

Archaeological evidence for this process should consist of deposits of large quantities of natural chert decortication and thinning flakes at the quarry sites, along with broken rocks and discard spalls that are the residue of the spall manufacturing process. In southern Mississippi and Louisiana, these primary reduction sites will most often be situated on stream gravel bars and in other areas of close proximity to natural exposures of washed gravel. As a result, residue from these operations may quite often quickly become part of the active bed load of the streams that originally exposed the gravel. Once spalls and preforms are transported to the thermal alteration site, the nature of the lithic debris should change somewhat. Some natural decortication and thinning flakes may occur along with quantities of large thermally altered decortication and thinning flakes. Also present on these sites should be those pieces of partially worked gravel that did not survive the heating process. These fire-cracked rocks will be characterized by crazed fractures and "potlids" but should retain some surfaces that were percussion flaked prior to firing. Cracks formed during firing generally lack the bulk of percussion and associated ripple marks that characterize intentionally flaked specimens (Purdy and Brooks 1971). Even these fire-cracked rocks probably do not indicate the intentional thermal alteration, considerable quantities of waste rock should be generated where this process takes place. Altered waste rock in association with thermally altered decortication flakes is probably indicative of nearby thermal alteration sites.

The most obvious clue to the thermally altered condition of a Citronelle chert artifact is a reddish color. Though this is not a definitive indicator either way, most heat treated Citronelle chert will show a pink, light red, or dark red color, or mottinging somewhere on its surface. The naturally altered cortex layer of Citronelle gravel generally reddens upon firing to a deeper color than the freshly flaked interior surfaces. In Citronelle gravel the general pattern of color change is indicated by this chart:

| opaque brown | opaque, red, maroon |
| white | pinkish cream, pink |
| mottled grey | mottled pink and red |
| grey | grey, purple |

Fossil inclusions seem to be more color stable than their matrix material, especially if they are originally light in color.

Glossiness of the flake scars of an artifact is perhaps the most useful indicator of heat treatment of Citronelle material and most other lithic material (Simpson and Gysbers 1975a). Only rarely will a natural chert specimen show the degree of luster associated with the marks typical of thermally altered examples. In general, the denser the material, the glossier will be the flake scars after proper heating. Surfaces exposed to the elements during firing will appear conspicuously dull next to flake scars struck after alteration. This is another good indicator of heat treatment. Though it may be difficult to recognize on some specimens. Occasionally remnants of this fire scale can provide clues to the pre-firing shape of a preform or spall that has been worked into an artifact. Glossiness of flake scars is evidence of the textural alteration that is the purpose of the thermal treatment process. The increased homogeneity indicated by glossy flake scars frequently occurs prior to interior reddening of Citronelle chert, but the association of these two traits in thermally altered material is not consistent. Reddening appears to be a function related to the presence of iron compounds in the material, while glossiness of flake scars may be due to physical rather than chemical changes induced by heating (Purdy and Brooks 1971). Gray varieties of Citronelle chert often show little or no color change when heated except in the cortex layer that has absorbed iron from the ferruginous environment of the Citronelle formation. The only indications of thermal alteration in such specimens may be increased brittleness and the increased luster of fresh flake scars. Similarly, pure white chalcedony often exhibits color changes only along cracks that have provided a path for dissolved iron compounds.

Recognition of thermally altered Citronelle material may sometimes be difficult, but when a piece of lithic debris is noted as a "reddish" flake and also exhibits glossy flake scars, the likelihood is great that this artifact was thermally altered. Reddish or pink color, glossy flake scars, and remnants of the fire scale together will indicate with relative certainty that an artifact of Citronelle chert has been heat treated. Lamplight inspection of the surface of the piece will help to retain its natural color. Glossiness in these examples may or may not be pronounced and the fire scale may not extend far into the interior of the stone. An advantage to this process would be that the strength of the blade and stem of the artifact would be greater than an identical piece that had been subjected to higher temperatures and more complete alteration. The increased brittleness associated with more complete thermal alteration allows finer thinning, sharpening, and pressure flaking, but adversely affects the durability of the artifact (Ritchie and Chappell 1983). The practice of incomplete alteration should not necessarily be considered a sign of non-proficiency in the technician, for the stronger blade and brittle edges of these artifacts would be ideally suited to many projectile point styles that were typically well made and often resharpened and reused. A recognition trait of incomplete thermal alteration on Citronelle chert artifacts may be a reddened distal end or a specimen with a more natural body color. Manufacturing the largest possible point from a given spall or blank will very frequently unintentionally result in the distal end showing the red coloration often seen on Dalton style points and in the intercultures of the Citronelle Belt. This same effect can sometimes be seen on artifacts that have been exposed to higher temperatures. Extreme reddening of the cortex layer often means that to manufacture the largest
blade from a given spall, the distal end and possibly the base or surfaces will automatically fall into the more deeply colored areas of the stone. A more definitive indicator of marginal alteration will be a thin reddish layer remaining on the exterior of the artifact that has been partially removed by the reduction process and exposes natural coloration at a shallow depth. The reddish color on these examples may cover only a small portion of the surface of the artifact. Since complete alteration of Citronelle cherts usually takes place only in the narrow temperature range between 360 and 400 degrees centigrade, consistent use of completely altered material by an aboriginal culture is an indicator of an impressive degree of control over the thermal alteration process.

An overview of recent research publications will reveal that lithic materials from the Citronelle Formation in southern Mississippi and Louisiana react to thermal alteration processes in much the same way as other siliceous materials from across the southern United States. Bibliographical references to this report are part of a larger body of research into lithic technology that has served to reconstruct techniques in widespread use for thousands of years that were nearly lost in the last 300 years of history. This new awareness of lithic procurement patterns and technologies is very helpful in the effort to appreciate the actualities of prehistoric America.

Additional Reading

Ahler, Stanley A.

Patterson, L. W.

Ray, Jack R.

Rick, John W.

Experiments in procurement and reduction of Citronelle lithic materials and in the thermal alteration of these materials have been conducted using samples from Perch Creek, St. Catherine Creek, Steele's Creek, and the Bonomito River in southwestern Mississippi. Samples for experimentation from Louisiana were obtained in the drainage of Thomspon Creek, Bayou Sara, and the Amite River in the southeastern part of the state. Little variation is noticeable in the composition of gravels from all these sources.

The St. Catherine Creek deposit, though some distance removed from Citronelle source beds are composed of gravel that most likely is Citronelle in origin.

Acknowledgements

Thanks are extended to John Commay of the MDH for research and editorial assistance. Whitney Austin of the Louisiana Geological Survey, Baton Rouge, aided in providing information and update on the latest research into Citronelle depositional sequences.

Wiltie J. Collins is an accomplished flint-knapper from Woodville.

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PREHISTORIC SETTLEMENT IN THE UPPER YOCONA DRAINAGE, NORTH CENTRAL MISSISSIPPI

Jey K. Johnson

ABSTRACT

The results of a small scale survey of the tributaries of the Upper Yocona River in Lafayette and Pontotoc Counties are presented. Although the analysis is based entirely on surface collections from relatively small sites, little is known about the area and suggestive patterning in the distribution of ceramic and, particularly, lithic artifacts is described.

Fieldwork in the Upper Yocona River project began on March 8, 1983 and concluded on April 9, 1983. During that time, 37.8 km (23.5 mi.) of tributary channels with a 30 m (100 ft.) right-of-way and 4.4 km (2.75 mi.) of proposed levee locations were surveyed for cultural resources. The work was funded by the Soil Conservation Service as one of the environmental impact studies for a flood control project (Johnson and Sparks 1984).

Seventeen previously unrecorded prehistoric sites were discovered during the course of the survey. One recorded site was relocated and collected. The sites were generally small and the surface collections were correspondingly small. A total of only 613 artifacts was recovered. However, because of the relatively small part amount of research which has been done in the North Central Hills and because the survey area is situated in a region which is intermediate to the major lithic raw material sources in Mississippi, there is some value in presenting the results of this research.

Environment

The Upper Yocona River drainage originates in southwestern Pontotoc County and includes most of the south half of Lafayette County. The western limit of the survey area falls just east of the community of Yocona and continues upstream to a point just beyond Toccopola. Since the majority of the survey area is located in Lafayette County and since a comprehensive geology of Pontotoc County has not been published, the following discussion will rest primarily on the Lafayette County geological report (Attaya 1951). The headwaters of the Yocona begin...
at the western edge of the surface exposure of the Porter Creek Formation. In the Yocona drainage, this formation is represented by micaceous sands. Porter Creek is overlain by the sands and clays of the Ackerman Formation. The uppermost water-borne sediments in the survey area are the sands of the Meridian Formation. They are mapped as occurring along the tops of the ridges in the eastern portions of Lafayette County. This material is overlain by the sands and clays of the Tullahatta Formation. The uppermost exposures are generally thin and discontinuous, occurring as they do 70 km from the bluffs of the Mississippi Valley where the major loess deposits are found. All of these sediments have been reworked to form the valley fill in the stream bottoms of the Yocona drainage.

Although pebbles are reported to be found at the base of the Meridian Formation (Attaya 1951:25), there is no indication that these ever reach gravel size. Hence, the immediate survey area lacks stone of sufficient size or quality to have been used in making stone tools. The nearest sources for any stone large enough to be used in tool production are the quartz boulders found at the tops of the Tullahatta Formation (Attaya 1951:22), and the quartz sandstone clasts and boulders which mark the base of the Koncifulo formation in some places (Attaya 1951:34). This formation occurs in western Lafayette County, a minimum of 25 km from the survey area. The nearest source of chert suitable for tool manufacture is the Citronelle gravel beds which underlie the thick, loess deposits along the bluffs of the Mississippi Alluvial Valley. The nearest likely location for these gravel beds is 30 km to the west of the survey area.

The sands and clays of the deposits which make up the survey area have resulted in narrow ridges and steep ravines with broad, flat flood plains in the major stream bottoms. This landscape is typical of the North Central Hills. Local relief does not usually exceed 30 m in difference between stream bottom and adjacent ridge top. There are, however, a few places in western Lafayette County where the sandstone at the base of the Koncifulo Formation has resisted erosion and produced unusually high elevations.

The major prehistoric upland forest cover in the North Central Hills was oak-pine (Love 1913; Kochler 1964). Stream bottoms in this area were oak-hickory-elm. A comparative survey of the food resources of two zones (Ford 1980) has suggested that the upland forest contained a relatively poorer inventory of food during practically all seasons of the year.

Previous work in the area

Archaeological research in the North Central Hills of Mississippi has been limited. Two major excavations yielded the bulk of the data from the area. The Monack Mound, located on the Skuna drainage in Talobahna County, was reported by Kochler (1966). Ford (1980, 1981) reviewed the Monack ceramic data and reconciled them with his own data from the Slaughter site (Ford 1977) which is located on the Yocona River immediately below the lower end of the survey area in Lafayette County. Two other projects concentrated on the upper Yocona. The main channel of the Yocona was surveyed by Potts in 1976 under contract with the Soil Conservation Service. Five sites were located in the 36.6 km (24 mi.) of channel which was surveyed (Potts 1976). Earlier, Landreth (1966) recorded and surface collected four sites in the upper Yocona near its junction with Toccopolee Creek. One of the sites reported by Landreth (La59) was revisited during this survey.
Four lithic sources were utilized prehistorically in the upper Yocona, and the proportion of flakes from each of these is a good measure of their importance. The only locally available material is the ferruginous sandstone which is found throughout Lafayette County. However, the sand is generally poorly consolidated and this material does not flake well. This characteristic is reflected in the small number of flakes found in the Yocona assemblage, slightly more than 75.

The next most convenient lithic resource is the Konclusko quartzite which is found downstream from the survey area in western Lafayette County. The Konclusko Formation is shown (Attaya 1951) to occur a minimum of 25 km from the survey area. Once again, however, this material is rather coarse grained and, although it is more durable than the sandstone, it was still not much used prehistorically. Only 8% of the flakes in the Yocona collection are made of Konclusko quartzite.

The Citronelle gravels which generally occur at the base of the thick loess deposits which mark the eastern edge of the Mississippi Alluvial Valley are next in order of proximity (50 km) to the survey area. These are relatively good quality cherts whose only drawback is the small size of the gravels, which rarely exceed 8 cm. Citronelle gravel accounts for 37% of the flakes in the study collection.

The most distant raw material which was identified in the sample is Fort Payne chert. This generally high quality material is found in bedrock deposits in extreme northeastern Mississippi and worked as large gravels and cobbles in the Tuscaloosa formation short distances to the south and west of the bedrock. Although Fort Payne occurs a minimum of 130 km from the survey area, this is the majority chert type in the flake collection, accounting for nearly half, 48%, of the total collection.

The relationship between distance from lithic resource and proportion is exactly inverse. Clearly, in this resource-poor environment, relative quality is more important than distance. Put another way, if it is necessary to travel or trade for raw material anyway, quality is the primary factor which controls selection.

Flakes were subdivided into twelve categories in hopes of deriving additional data. A flake paradigm developed to analyze gravel-based material from western Mississippi (Johnson and Raspet 1980) was used (Table 1). The classification relies on the distribution of cortex and the configuration of the flake platform. Two things need to be emphasized at this point. First, a fair number of the Fort Payne flakes show cortex. This indicates that worked material from the Tuscaloosa Formation was probably the source for most of the Fort Payne. Second, none of the Konclusko flakes show cortex. This is consistent with current data on this raw material. Kosciusko (McCahey, personal communication) occurs in large boulders and is reduced by beginning with large flakes, many of which would not show cortex. The lack of cortex on the Kosciusko collapses the twelve-part classification into three categories: flakes with missing platforms, flakes with two or fewer platform facets, and flakes with three or more platform facets. Clearly, any analysis which deals with a large number of Kosciusko flakes will have to use a different system of classification.

Table 1. Flake classification.

<table>
<thead>
<tr>
<th>Platform Configuration</th>
<th>&gt;75%</th>
<th>≤75%</th>
<th>No Cortex</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>DB1</td>
<td>DB2</td>
<td>DB3</td>
</tr>
<tr>
<td>MISSINC</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SS</td>
<td>0</td>
<td>0</td>
<td>3</td>
</tr>
<tr>
<td>K</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>C</td>
<td>3</td>
<td>0</td>
<td>9</td>
</tr>
<tr>
<td>FF</td>
<td>1</td>
<td>1</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>DB4</td>
<td>DB5</td>
<td>DB6</td>
</tr>
<tr>
<td>Cortex</td>
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<td>C</td>
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<tr>
<td>FF</td>
<td>0</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>DB7</td>
<td>DB8</td>
<td>DB9</td>
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<tr>
<td>≤2</td>
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<td>C</td>
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<td>6</td>
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<tr>
<td>FF</td>
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<td>4</td>
<td>27</td>
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<td></td>
<td>DB10</td>
<td>DB11</td>
<td>DB12</td>
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<td>&gt;2</td>
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<td>1</td>
</tr>
<tr>
<td>C</td>
<td>0</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>FF</td>
<td>0</td>
<td>0</td>
<td>17</td>
</tr>
</tbody>
</table>

Table 2. Proportion of early stage debitage in six regional samples from Mississippi.

<table>
<thead>
<tr>
<th>Sample</th>
<th>Minimum Distance of From Source (km)</th>
<th>Number of Flakes</th>
<th>Proportion of Early Stage Debitage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Notches Bluffs</td>
<td>0</td>
<td>1737</td>
<td>0.674</td>
</tr>
<tr>
<td>Little Tollahatchie River</td>
<td>0</td>
<td>160</td>
<td>0.625</td>
</tr>
<tr>
<td>Lightline Lake</td>
<td>5</td>
<td>952</td>
<td>0.539</td>
</tr>
<tr>
<td>Opposum Bayou</td>
<td>22</td>
<td>484</td>
<td>0.638</td>
</tr>
<tr>
<td>Line Creek</td>
<td>24</td>
<td>486</td>
<td>0.335</td>
</tr>
<tr>
<td>Upper Yocona River</td>
<td>130</td>
<td>56</td>
<td>0.485</td>
</tr>
<tr>
<td>Sandstone</td>
<td>0</td>
<td>9</td>
<td>0.555</td>
</tr>
<tr>
<td>Kosciusko</td>
<td>25</td>
<td>8</td>
<td>0.000</td>
</tr>
<tr>
<td>Citronelle</td>
<td>50</td>
<td>59</td>
<td>0.397</td>
</tr>
<tr>
<td>Fort Payne</td>
<td>130</td>
<td>56</td>
<td>0.185</td>
</tr>
</tbody>
</table>

In earlier studies of gravel-based industries (Johnson and Raspet 1980; Johnson, Robbins, and Sparks 1983; Johnson 1983), it has been useful to divide the flakes with platforms into two groups, early stage and late stage. This has been done by considering categories DB4-DB8 to be early and DB9-DB12 to be late. Categories DB1 through DB3 are not used, since their lack of platforms makes placement within a production trajectory equivocal. Table 2 shows there to be a general inverse relationship between the proportion of early stage debitage and the distance from the source in Mississippi. The two exceptions are the Opposum Bayou sample and the Kosciusko flakes from upper Yocona. The problems in using the flake paradigm with Kosciusko quartzite have already been discussed. The
The same production trajectory as the other bifaces. That is, stemmed bifaces with distal points and sharp edges do not appear to have been the intended end product for the sandstone technology.

First, it should be noted that if the raw materials used in biface manufacture in the upper Yocona are arranged in order of frequency, the flake frequency order is duplicated. That is: Fort Payne debitage in primarily late stage flakes and the number of flakes per biface should, therefore, be smaller.

Likewise, the number of unfinished Fort Payne bifaces should be relatively small. Once again (Table 3) there is a nice correspondence between distances from the source and proportion of finished bifaces in the sample.

Since most of the upper Yocona sites contain mixed deposits, bifaces provide the only data which can be used to examine changes in use of raw material through time. Table 4 shows some patterning. All but one of the eleven bifaces which were classified as Archaic or Archaic/Woodland transitional types are made of Fort Payne chert. The proportion of Fort Payne begins to decline during the Woodland and Fort Payne is a minority material for Late Woodland/Mississippian types.

Recalling the Table 2 data, two assemblages, Opposum Bayou and Line Creek, are both located at about equal distance from similar chert sources. While the biface assemblages are similar (Table 3), the flakes are not. Opposum Bayou contains considerably more early stage debitage. The
primary difference between the two assemblages in chronological. Opposum Bayou assemblages being primarily Late Archaic/Early Woodland while Line Creek assemblages are mostly Late Woodland/Mississippian. It has been suggested (Johnson 1983) that the differences between the two regions relate to differences in mobility. The Woodland and later inhabitants may have been more sedentary and, therefore, had less access to exotic cherts. More local chert was used.

One final aspect of the upper Yocana data is worth mentioning. Since the main channel in the survey area runs east to west, the sites can conveniently be divided into an eastern group and a western group. The Konklusko and Citronelle source areas are to the west of the survey area, while the Fort Payne source area is situated to the east. If there is a relationship between distance and access, there should be more Citronelle and Konklusko in the eastern sites and the reverse for Fort Payne. Actually on the basis of flakes (Table 5), the predicted pattern holds for Konklusko only. The relative amounts of Citronelle and Fort Payne are about the same in each half of the survey area. There is no interpretable pattern in the distribution of bifaces. However, it should be emphasized that the survey area is relatively short, measuring only 11 km east to west. It appears that the Konklusko pattern is evident only because of a relatively rapid drop-off in utilization moving away from the source area.

Table 5. Chipped stone artifacts crosstabulated by type, raw material and location.

<table>
<thead>
<tr>
<th></th>
<th>Eastern Sites</th>
<th>Western Sites</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=9</td>
<td>n=9</td>
</tr>
<tr>
<td>Flakes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Konklusko</td>
<td>16</td>
<td>1</td>
</tr>
<tr>
<td>Citronelle</td>
<td>57</td>
<td>16</td>
</tr>
<tr>
<td>Fort Payne</td>
<td>76</td>
<td>19</td>
</tr>
<tr>
<td>Bifaces</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Konklusko</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>Citronelle</td>
<td>10</td>
<td>1</td>
</tr>
<tr>
<td>Fort Payne</td>
<td>24</td>
<td>13</td>
</tr>
</tbody>
</table>

Conclusions

Summarizing, although it is the most distant of the sources, Fort Payne chert is the major raw material type in both the flake and tool assemblages from the upper Yocana. The fact that it is a distant source is revealed when production trajectory models are employed. Fort Payne artifacts show the least evidence for tool production. They appear to have been brought into the region in nearly completed form. At the other end of the scale there is the Konklusko quartzite which, it seems likely, was only used in the immediate area of the source. There are some indications of chronological patterning, with Fort Payne chert being much more common during the Archaic and Early Woodland and more local sources becoming important thereafter.

Although the collection is small, the Yocana material comes from an area where local lithic raw material is unavailable, and therefore patterns of procurement are relatively clear. Three points should be emphasized. First, the further from the source, the less early stage production activity. This is evident in the survey area as a whole and in the characteristics of the different raw material assemblages. Secondly, transport distance appears to be related to three factors: (1) quality of the material (Fort Payne was preferred over Citronelle over Konklusko); (2) availability of local resources (the Little Tallahatchie survey area is not much farther than the upper Yocana yet is falls within the Citronelle resource area and Fort Payne chart was not used (Johnson 1979)); (3) the mobility of the group may have been a factor, since resource utilisation changes through time. Finally, the Early Woodland appears to be the period of decreasing mobility in Mississippi, with exotic cherts being more common earlier and local cherts being more common thereafter.

Acknowledgements

John Sparks, then a graduate student at the University of Mississippi, accompanied me on the fieldwork phase of this project. We spent a lot of time wading beaver ponds and he consistently saw more snakes than I did. I have never decided whether or not to take comfort in that. At any rate, I appreciate the many hours of hard work which he contributed. Lawrence Howe served as the agency representative for the project and, as always, made the work a cooperative venture. Finally, I thank Janet Ford and Bob Thorne at the University of Mississippi for their advice and discussion.

Jay K. Johnson is an Associate Professor of Anthropology and the Associate Director of the Center for Archaeological Research at the University of Mississippi.

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Potts, T.D.

USDA

AN ENGRAVED BOTTLE FROM THE HUMBER SITE, NORTHERN YAZOO BASIN, MISSISSIPPI

John Connaway

ABSTRACT

This paper presents a detailed description of an engraved bottle from the Humber-McWilliams site, together with a discussion of the southeastern ceremonial complex motifs in the engraving.

During 1974-1975, the Cottonlandia Educational and Recreational Foundation of Greenwood, Mississippi, sponsored excavations at the Humber-McWilliams site (22-Co-601) in Coahoma County (see Tesar and Fichtner 1974 and Tesar 1976). Excavations at the site, a Late Mississippian village and burial ground, yielded house patterns and numerous refuse and burial pits. Associated with one of the burials was an engraved water bottle (Figure 1) which is herein described.

The vessel was deposited with Burial 7, which Tesar (1976:10) describes as

a bundle containing the remains of three individuals oriented from slightly east of south to slightly west of north. The primary individual is an adult male (ca. 30 years). Traumatic arthritis and spinia bifida are present, and the latter might have resulted in death. The remains of a child (ca. 10 years), presumably male, were mixed in the bundle. The fragmented remains of the skull of an older male were located on top of the bundle pile. It is possible, but not certain, that this latter might have been a trophy skull as no related infraskeletal remains are present. A single vessel is located to the immediate east of the skull of the primary individual.

The position of this burial relative to the other excavated features, at the 35, 35, 65, and 55 cm levels, is shown in successive unnumbered figures in Tesar's report (1976:23-26). The vessel is a bottle form with flared rim, beveled lip, and flat base (Figure 1). The exterior surface is smoothed, with an unpolished matte finish. As Tesar (1976:10) points out, it has a "poor quality Bell Paste, but under present classification will have to be designated as Walls Engraved." Tempering is of finely crushed shell, much of which is leached out. Shell particles range in size up to 2.4 mm, which is not characteristic of Bell paste, but the average is ca. 0.5 to 1.0 mm or smaller, thus being more consistent with Bell. Walls Engraved vessels usually have a more lustrous surface finish as well. The basis exterior
color is very pale brown (10YR7/4), with splatches of fire clouding around the body shading to gray (5YR5/1), dark gray (7.5YR4/0), and dark grayish brown (10YR4/2). Color designations are in accord with the Munsell Soil Color Charts, 1954 Edition. The core ranges in color from the same basic pale brown mentioned above to the dark gray of the clouded areas.

Vessel dimensions are as follows:

- Vessel height: 21.1 cm
- Lip diameter: 5.3 cm
- Upper neck diameter: 3.9 cm
- Lower neck diameter: 4.9 cm
- Body diameter: 17.8 cm
- Flat base diameter: 7.1 cm
- Neck length: 8.0 cm
- Wall thickness: ca. 4.0 mm

On one side of the vessel body is an engraved human head displaying certain motifs associated with the so-called "Southern Cult" or "Southeastern Ceremonial Complex." The design of this engraving is depicted in the rubbings in Figure 2. The most conspicuous motif utilized which is "Southern Cult" related is the 3-pronged forked eye surround (note that the eye itself is not forked). Elements of costume depicted included the double-headed forelock, the ear plug or spool, three lines down the side of the face, and what may be either a shell head necklace or a beaded hair lock. These motifs and elements, in various forms, are consistently seen on copper plates and engraved shell and pottery from Etowah, Moundville, the Walls-Pecan Point area, Spiro, and many other sites with 'Cult' manifestations.

According to Waring and Holder (1968:10), the forked eye motif is "characterized by a circumcircular marking which may be bi-forked, tri-forked, or even with the zigzag lines down the face..." The latter has been interpreted as tears (MacCurdy 1917:73), the flashing eye of the thunderbird (Wietenberg 1922), and apparently with more consensus of opinion, the eye markings of various Falconidae (Waring & Holder 1968:10, Howard 1968:37; Watson 1950; Byers 1962:213). Howard (1968:37) suggests that the duck hawk or peregrine falcon is the most likely candidate for imitation. He points out that elements of hawk man (commonly referred to as the "Eagle Being") costumes with human and avian characteristics have been observed from Spiro and Etowah, "evidence that humans did costume themselves in imitation of hawks" (1968:37). Howard further suggests that

the hawks and hawk men of the Southeastern Ceremonial Complex probably represent the mythical giant sharpness hawk rather than the eagle. We interpret it, on the basis of both internal evidence and the various tribal myths, as being a symbol of war, though it probably functioned, because of its great importance, in the white or peaceful ceremonies of the Bush as well (1968:45).

The "Forked Eye-Surround" motif, according to Phillips and Brown (1978:151), is "easily the most firmly established motif in Southeastern iconography—and the least precise in point of nomenclature. The eye is not forked, but rather the 'surround.' And...it is forked in seven different ways..." The motif is closely associated with the "Eagle Being"
or the "Bird Serpent Composite" (Waring and Holder 1968:10) in the Southeast. In a study of some 1100 Walls-Pecan Point pottery vessels, Rands (1956:155-186) found that the forked eye surround was rarely present, only ten examples being observed, five of which were associated with serpent effigies on vessel rims. It appears to be much more common on copper plates and engravings from other sites. At Spiro, the less common 3-pronged forked eye surround, like that seen on the Humber vessel, was observed in only seven occurrences in Phillips and Brown's 1978 study. It appears on two heads, one on a snake, and an animal with a snakelike head, and on one that could have been a bird or snake (1978:152).

A number of examples of the forked eye surround motif may be seen throughout the pictorials in Fundaburk and Foreman (1957) depicting various objects from sites in Tennessee, Mississippi, Arkansas, Georgia, and Oklahoma. The 3-pronged motif is shown on a shell gorget from Brakefeller Mound, Tennessee (Plate 157); a head effigy vessel from Campbell Site, Mississippi (Plate 125); and a shell gorget from Moundville, Alabama (Plate 64). In comparison to the Humber character, the last is of interest because it combines two of the costume elements found on the Humber engravings, the three lines from the mouth down the side of the face and the ear plug, with the eye motif. Such triple lines are also featured on some of the Spiro engravings (Phillips and Brown 1978), and are fairly common on certain Walls-Pecan Point pottery, where 19 of 28 serpent vessels studied by Rands (1956:186) displayed this treatment. Louis Tesar, in his sketch for a museum display of the Humber vessel (Figure 3), interpreted the three facial lines as representing painted lines. Speculatively, they might also have been tattoos, or representative of feline characteristics, since many of the serpent effigies have distinctly feline characteristics.

Two other costume elements which are quite common and widespread among "Southern Cult" sites are the double beaded forelock and the ear plug or spur. These are both especially prevalent at Spiro, Moundville, and Elnathan, and numerous examples are depicted by Waring and Holder (1968). Waring (1968a, 1968b), Fundaburk and Foreman (1957), and Phillips and Brown (1978, 1984). Tesar interpreted the forelock on the Humber vessel as a pendant with feather-like dangle (Figure 3), but it appears more like a beaded lock of hair suspended from the forehead. This seems to be gathered like a pony-tail and held together by two round beads and a triangular object. Feathers or tassels are generally depicted in more curvilinear form or with interior subdividing lines. The forelock is present on a large majority of human head representations throughout the "Cult" area, some having only two beads, while others include the triangular object as well.

The earplug or earspool, somewhat more simplified than usual on the Humber specimen, is obvious and may be seen suspended from the earlobe of practically every human head representation associated with the "Southern Cult." Quite often, this object will have beads and dangles attached to it like earrings. It is also often shown with a depression or perforation in the center, indicating a spool shape, most likely made of copper.

Occasionally, beaded locks of hair similar to the forelock are depicted on the side of the head, dangling in front of or behind the ear. A good example from Spiro, showing this as well as the forelock, earspool, facial lines, and forked eye surround, is shown on Plate 53 in Phillips and Brown (1978). Also, in some cases, a beaded pigtail hangs from the back of the head, although the usual treatment is a hair bun filled with various ornaments. Two examples of such a pigtail from Etowah, Georgia, are depicted on Plate 30 in Fundaburk and Foreman (1957) and again by Waring (1968a:42). These are representations on copper plates of hawk man dancers, both having twisted pigtales held together with ornamental objects behind the ear. An apparent beaded lock of hair on the back of the head, along with the forelock on the front, is also depicted on a stone tablet.
from Cabokia, Illinois (Peet 1901; Varing 1968b:89). There are also several examples of engraved shells from Spiro, Oklahoma, showing beaded pigtails at the back of the head (Phillips and Brown 1984: Plates 130, 154, 155, 161).

The reason for mentioning these beaded pigtails is that on the Nunder vessel there are three circular objects, presumably beads, shown around the neck of the effigy. Tesar interpreted these as a shell bead necklace (Figure 3). However, it should be noted in the rubbing (Figure 2) that there is a triangular or bell-shaped object adjoining the front bead, with what appears to be another bead of hair protruding from it and curving upward in front of the mouth. The rear bead is connected to the hair line at the end opposite the forehead. By comparison with the aforementioned pigtails, and with the forehead and its accoutrements, it is suggested that the Nunder example represents a similar beaded hairstyle, rather than a necklace. It was curved across the shoulder and up in front of the mouth in order to fit it onto the vessel.

Although its execution appears somewhat artistically inept, the overall style and combination of motifs and costume elements on the Nunder vessel presents a definite "Southern Cult" association. Since "Cult" motifs are not abundant at the Nunder Site, this might be explained as a local attempt to copy similar figures from elsewhere, seen during trading visits. Minor occurrences of such motifs at settlements in surrounding areas indicate that at least certain inherent "Cult" ideas and possibly some ceremonial practices were indulged in the northern Yazoo Basin during late Mississippian times. Since a definition of "Southern Cult" appears to remain somewhat indeterminate at present, no attempt will be made here to advance any further speculation on the subject. Suffice it to say that the similarity of the Nunder effigy design to widespread and commonly seen "Cult" motifs suggests at least a shared interest in the subject on the part of its manufacturer, whatever the reasoning behind it.

John Conaway is an archaeologist with the Mississippi Department of Archives and History.

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THE DOROTHY LOVE CACHE
Jean S. Hartfield

ABSTRACT

This paper serves to report and record a rare cache of 41 lithic bifaces and projectile points from Marion County.

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Early in September, 1983, two women from the village of Banterville, Mississippi were happily pursuing their favorite pastime of collecting Indian artifacts. The clearcut area they had chosen to survey is the property of a paper company. The small trees and brush had been wind-rowed, resulting in some surface disturbance and exposing sub-soil strata in a few places. A heavy rain the previous night assured these ladies that conditions should be just about perfect for "hunting arrowheads," but neither imagined that they would discover one of the few caches of Lithic material known in this area.

Mrs. Dorothy Lovel, examining the expanse between two of the wind-rows, found a loose cluster containing six "points." Her exclamation of surprise brought her friend, Mrs. Blondell Smith, to see what caused the excitement. The rarity of finding so many artifacts in one place caused both women to wonder if more might be present, and indeed, many more came to light as they dug in the loose sandy soil with their fingers and the long handled cooking forks they used to "flip" chips.

From an area approximately 16 inches in diameter and 8 to 10 inches deep, came forty-one pieces of lithic material. Some of the points were
deposited in the soil at an angle to the surface and some were apparently arranged in small groups. These were aligned on their lateral edges and lay tipped in a domino effect.

Six of the artifacts were broken, presumably by the re-flooding procedure. The broken pieces were subsequently matched and repaired, leaving one proximal end missing its distal portion.

MRA Pearl River County Chapter members Bennie and Wayne Rayborn, also from Baxterville, are to be credited with bringing this rare find to the attention of our State Archaeologists, and Mrs. Smith and Mrs. Lowe are to be commended for keeping this material separate. Unaware of the practice of cataloging artifacts, fortunately each woman kept her share of the cache completely segregated from the rest of her collection.

On August 29, 1986, MDAH Staff Archaeologist Geoffrey Lehmann and I were privileged to examine this fascinating find. Measuring and preliminary drawings were done by Geoff, who encouraged me to attempt this report.

Site 22-Ma-542 lies along the southern edge of a small, unnamed stream that is part of a system that eventually converges approximately one mile from Lower Little Creek, into which it drains. Lower Little Creek, in turn, empties into the Pearl River, the major basin in southeastern Mississippi. Shown as an intermittent stream on the Baxterville SW USGS Quad, the clear, cold water probably emanates from springs and has never been dry, according to local lore.

Named the Banana site by Mrs. Smith and Mrs. Lowe, it must have proven equally providential to prehistoric man. Noted on the site were three varieties of oak, buckthorn, persimmon, hickory, masurca, muscadine grape, blackberry, deerstraw (Trillium adonisisxal), reputed as a flavoring agent used by pioneers, and arrowhead (Pogostemon latifolius). The area is a favorite haunt of contemporary hunters; tracks of deer, raccoon, turkey and rabbit were observed in the logging road which provides access to the site. About 3/4 mile to the south lies a range of hills which rise one hundred feet over the Banana site. These are known as the "Red Hills." Covered with pine and hardwoods, this area would have expanded the foraging area and added variety to the habitat. About 1/4 mile northeast is an outcropping of gravel, presumably the Citronelle Formation.

A small surface collection was made during September by Mrs. Smith, Mrs. Lowe, Ann Patterson, and myself. Though the surface is heavily overgrown, the perimeter of the site was established. Debitage was found in an area roughly 150' parallel with the stream, and reaching about 100' south. This area encompasses three distinct elevation levels. Artifact distribution occurred most heavily on the first terrace, where the soil is much sandier than that of the higher levels. The soil from the higher strata has eroded, exposing heavy red clay pan in several places. It was in one of these areas that Mrs. Lowe made the initial find. No soil discoloration or concentration of organic material can be seen at this location.

Lithics in the surface collection are 27 flakes and one distal end from a crude preform. None of the flakes show any alteration from use or deliberate retouch. All are local chert. There are forty ceramic sherds. Twenty-six are clay tempered, evidently the sides of large containers. One clay tempered sherd shows an angular curve, commonly seen above the base of large vessels that expand to a circular form from a squared base. Eleven of the sherds are shell
tempered. Leaching, which is prevalent in acid pine land soil, has
dissolved the shell, leaving porous, light weight remnants.

The clay tempered body sherds range from 3.5 mm to 7.5 mm in thickness.
Rims from three clay tempered vessels are present. One is from an incurved
vessel with a slightly flattened lip. Two are from slightly outcurved
vessels. One has a slight depression in the outer lip edge which has been
sufficiently rounded. A heavy incised line below a 1.5 mm wide rim with
a rounded lip is present on rim No. 3. One shell tempered rim sherd is from
a vessel with straight sides. It has a tapering rim and rounded lip.
Shell tempered sherd range from 4 mm to 5.5 mm thick and average 4.8 mm.
Clay tempered sherds average 5.06 mm. Three thick tempered sherds,
probably a vessel base, measure 8 mm, 9 mm, and 12 mm. This assemblage of
pottery represents Early Woodland and Mississippian periods. (C. Baxter
Mann, personal communication)

The Dorothy Low Cache consists of ten finished projectile points, and
thirty-one roughly diamond shaped advanced preforms or blanks. Four of the
finished points (Figure 4, I and J; Figure 3, H, Figure 4, A, J) are heavy,
stemmed dart points, resembling Pontchartrain or Kent varieties, but
missing the ripple flaking common in the Pontchartrain group and more
carefully shaped than the Kent type. (Perino 1968:20; Lehmann 1982:18; Caggiano and Webb 1970:60-61; Webb 1971:57). Shaping was accomplished
basically by wide, random flaking. Only two of these points exhibit small
pressure flakes removed at irregular intervals. They have straight to
contracting stems. Stem bases are pointed on three, straight on one.
Shoulders are barbed, slightly expanded in the area of the barbs. Blade
dges are excoruate. One point, Figure 1, I, is made from some type of
granite. This material is relatively common on sites in the Pearl River
Basin and can be found in pebble form. The other points in this category
are made from yellowish to tan local chert. Ten blanks are longer in
proportion and seem to be shaped for finishing into dart points such as are
described above (Figure 1, A, B, D, F; Figure 2, A, B, C; Figure 3, A, B,
C).

Six finished artifacts fit the description of Shumla points (Bell
1960:86; Lehmann 1982:25). They, too, have been shaped by removal of large,
shallow random flakes. Few small pressure flake scars are evident. These
points are wide, with slightly recurved blade edges ending in wide barbs.
Three points have barbs almost as long as the stems. Stem bases are
pointed. Example E, Figure 3, exhibits a "twist" or sort of beveling that
seems to have been accomplished during shaping of the preform. Blanks B
and D, Figure 1; E, Figure 2; and B, Figure 3, also show this attribute.
The remainder of the cache, twenty-one "Morrow Mountain" shaped blanks,
have also been fashioned by random shallow flaking. Eleven have cortex on
the extremities, usually on the shoulders. Only two of the finished Shumla
points retain cortex material. Figure 1, D, has cortex on the stem base
and Figure 3, F, shows some cortex on the blade face. This is probably due
to the size of the available chert pebbles and not a deliberate inclusion.
Only two artifacts show traces of the red coloration usually attributed to
heat treating. All are made from the local chert. Figure 2, D shows an area of retouch on the proximal end. This may represent a blank that
was broken and reworked to be used as a scraping tool.

Summary
Evidence from surface collections and the Dorothy Low Cache indicates
that site 22-MO-342 was probably used seasonally by prehistoric man during,

at least, three chronological eras, Late Archaic, Early Woodland and
Mississippi. Though some artifacts were "lost" or not catalogued,
significant information has been recovered by their discovery. Although
average finished point size is considerably larger than the average
advanced blank, one can plainly see that this cache represents various
stages of two distinct Late Archaic point types—a large, stemmed dart
point and a broader Shumla type point.

The fact that these two points are contemporaneous is interesting in
itself, but the presence of two types of blanks, evidently prepared for the
above mentioned points, should be conclusive evidence that the so-called
Morrow Mountain points found in this area, usually in association with Late
Archaic artifacts, are not the Round Based Morrow Mountain points found on
Early Archaic horizons in Alabama (Cochran and Hulse 1975:90).

In fact, these "finished" Shumla points may not yet have been subjected
to much resharpening, as most examples observed from the Pearl River basin
have shorter, narrower barbs and reduced blade length.

| Table 1. The Dorothy Low Cache: Average Measurements in Centimeters |
|------------------------|---------|---------------------|
| Length | 6.43 cm | 3.722 cm |
| Thickness | 0.758 cm | |
| 30 specimens | 31 specimens | 31 specimens |
| Projectile Points |
| Length | 7.19 cm | 3.96 cm |
| Thickness | 0.79 cm | |
| 10 Specimens | 10 Specimens | 10 Specimens |

| Table 2. The Dorothy Low Collection (measurements in centimeters) |
|------------------------|---------|---------------------|
| Length | 7.1 | 3.8 |
| Width | 4.0 |
| Thickness | 0.7 |
| 6.2 | 4.4 |
| 6.7 | 3.5 |
| 6.4 | 3.8 |
| 7.1 | 3.5 |
| 6.6 | 3.4 |
| 6.1 | 3.6 |
| 6.7 | 3.4 |
| 6.2 | 4.2 |
| 8.4 | 3.6 |
| 6.8 | 3.8 |
| 6.7 | 4.8 |
| 6.4 | 4.5 |
| 5.3 | 3.7 |
| 6.3 | 3.9 |
| 6.2 | 2.8 |
| 6.5 | 2.5 |
| 6.7 | 3.3 |
| Projectile Points |
| Length | 7.9 |
| Width | 3.6 |
| Thickness | 0.9 |
| 7.5 | 4.7 |
| 7.4 | 3.2 |
Personal preference by the prehistoric flintknapper who left these objects behind probably accounts for the discrepancy in the difference one would expect in the average sizes of the blanks and the finished product. It is the opinion of this writer that he or she (the flint knapper) simply chose the biggest and best first.

Table 3. The Blondell Smith Collection 22-Ma-542 (measurements in centimeters)

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**Projectile Points**

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**Acknowledgements**

Special thanks to Archeologist Geoffrey Lehmann for his help and encouragement, also James Lauro, Dr. Patricia Calloway, Baxter Mann and Sam McGahey who also encouraged me to attempt this report. Thanks to friends Ann Patterson, and of course, Mrs. Lowe and Mrs. Smith, who welcomed me into their home, and their husbands, who had a very late supper when we visited the site.

Jean Hattaway is president of the Pearl River Chapter, Mississippi Archaeological Association.

**REFERENCES**


under cultivation and based upon their living in a dwelling house. Using these records, it is often possible to determine the approximate number of acres of land that these Chocow families would have had in cultivation in 1830. Records contained in county courthouses in Mississippi provide the names of the Chocows who were granted reservations and the number of acres contained in each reservation. Additional information may be found in the Chancery Court records, which contain estate files of all individuals who died and whose estates were probated.

In Lowndes County, three Chocow-related persons who died in the mid-1830s had their estates probated through the Chancery Court: Tisha Hens, Middleton Mackey, and John Pitchlyon. These estate records are of immense value because they often contain an itemized list of all personal property owned by the individual who had died. In Lowndes County, Pitchlyon's estate and also the Tisha Hens estate contain this personal property inventory. Other items which may be included in the estate file are copies of the accounts that were used when the individual died. These accounts list goods purchased, when they were purchased, and who they were purchased from. Such items help provide not only information about the personal life of the individual, but provide some documentation of artifacts that would be recovered from the habitation site.

Once an examination of the county deed records has revealed the reservation site locations, a surface survey would then be used to try to pinpoint the habitation site within the reservation boundaries. Once an individual site is located and a controlled surface collection made, other standard archaeological procedures would come into play as to whether or not the site should be excavated or how it should be handled. Since these late Chocow sites were inhabited at the same time as white occupation in nearby areas of the State, the analysis of the artifacts from the site provides an opportunity to compare the Chocows with the white settlers who were living in Mississippi at the same time. Also, by the use of historic archaeology guides and antique publications, it is often possible to determine the manufacturer and the date of manufacture of articles or artifacts found on the site. After the artifacts from the sites are identified, they can then be compared with artifacts that are coming from white settler sites in adjoining regions. The local Historical Society and elderly persons from the sites should also be contacted for historical documentation and oral traditions.

As a case study for the procedures that I have outlined, I will use the examples of Hotana and Yokatubbee, two Chocow who lived in Lowndes County in 1830.

**Notanai Reservation**

The Notana Reservation, which contained 82.88 acres, was located in Township 18, Range 16 East, in Lowndes County, Mississippi. The original U.S. field notes and survey map show that a road from the Mayhew Mission to the Robinson Road passed through the reservation site in 1832. The map also shows a large field about one mile southeast of the reservation (Figure 1). The reservation site is presently cultivated as a soybean field and exhibits dark stains in the northern portion. Surface collections in that area revealed Early Archaic, Miller II, Late Mississippian, Historic Choctaw, and European artifacts (Table 1). The presence of the historic Choctaw pottery type Chickachee (Marshall 1978), European trade beads (Quimby 1966:89-90), creamware ceramics (Noel Hume 1976:129-131), blue and black transfer printed whiteware (Noel Hume 1976), and a broken bottle neck (Sonderman, personal communication 1976), indicate...
a historic Choctaw occupation. Another historic Choctaw occupation is indicated in the southeast corner of the reservation, where a surface collection had produced Chickasaw Combed pottery and transfer printed white wares (Table 4 and Figures 5 and 6). This second occupation site is adjacent to the Yocubbee site, which is described below.

Yocubbee Reservation

This reservation adjoined the Hotana reservation and was located in Township 19, Range 16 East, in Loundoun County, Mississippi. It contained 82.88 acres. The 1832 U.S. Survey shows the Mayhew Mission-Rowe Road running about 200 yards west of the reservation and a field about three quarters of a mile southeast of the reservation (Figure 1). This reservation is also in a soybean field. The southwest corner of the reservation contained a site from which a surface collection was made (Table 5 and Figures 7 and 8). The artifacts that were found included shell tempered Indian pottery sherds that are similar to the historic native made ceramic types, Wilson Plain and Oktibbeha Plain (Sondorman, personal communication 1976). A Madison point made of white chert was also found. European artifacts included sherds of blue monochrome pearlware ceramics, ca. 1815-1835, transfer printed white ware ceramics, ca. 1830-1870, green sprigware white ware ceramics, ca. 1830-1845, blue shelled decorated wares with a bud type motif, ca. 1820-1840s, and blue enbossed edge-decorated pearlware white wares, ca. early 1820s-early 1840s (Sondorman, personal communication 1976). A maker's mark on one sherd is identifiable as Enoch Wood and Sons of England, a firm which operated between 1818 and 1846 (Golden 1976:686). Brown and olive colored glass bottle fragments typical of glass bottles used during the first quarter of the 19th century were also found. Historic Choctaw occupation was confirmed by the presence of Chickasaw Combed pottery sherds. The artifacts indicate that the site was probably occupied during the first and second quarter of the 19th century.

Table 1. Surface collection from the northern site and the reservation of Hotana

I. Aboriginal Made Artifacts

A. Ceramics

1. Shell Tempered Plain 38
2. Barton Incised 3
3. Other Shell Tempered Incised 3
4. Shell Tempered Stamped 1
5. Sand Tempered Plain 33
6. Chickasaw Combed 28
7. Chickasaw Plain 16

B. Littic

1. Flakes (heat treated) 84
2. Proforms 1
3. Drill 1
4. Madison Points 3
5. Unspecified Woodland Points 2
6. Flinttrock Points 2
7. Dalton-like Points 2
8. Shell Beads 66

II. Non-Aboriginal Made Artifacts

A. Ceramics

1. Earthenware Saltglaze Exterior Albany-alp Interior 16
2. Undecorated Whiteware 11
3. Polychrome Whiteware 2
4. Blue Monochrome Whiteware 2
5. Blue Transfer printed Earthenware 2
6. Black Transfer printed Whiteware 2
7. Undecorated Marble 1

B. Glazes

1. Applied Glass 2
2. Molded Base 1
3. Bottle Fragments 14

C. Metal

1. Nail
   (a) Cut with Machine Cut Head 6
   (b) Cut with Wrought Head 1
   (c) Cut Shaft Fragments 3
2. Brass Thimble 1
3. White Metal Button 1

D. Trade beads

1. Glass
   (a) Clear 2
   (b) Blue 1
   (c) White with Red and Green Stripes 1

Table 2. Surface collection from the southern site on the reservation of Hotana

I. Aboriginal Made Artifacts

A. Ceramics

1. Shell Tempered Plain 2
2. Chickasaw Combed 2
3. Chickasaw Plain 1

B. Littic

1. Flakes (heat treated) 1

II. Non-Aboriginal Made Artifacts

A. Ceramics

1. Whitewares including Pearlware
   (a) Blue Shell Edge 4
   (b) Green Shell Edge 4
   (c) Blue Transfer Printed 4
   (d) Brown Transfer Printed 4
   (e) Slip Painted 4
   (f) Finger Trilead 4
   (g) Flax Blue 4
   (h) Blue Monochrome 4
   (i) Polychrome 4
   (j) Green Spongeware 4
   (k) White Enbossed Decorated 4
   (l) Undecorated Whitewares 4
2. Coarse Earthenwares
   (a) Gray Salt Glaze with Blue Decoration
   (b) Gray Salt Glaze
   (c) Lead Glaze
   (d) Yellow with Blue Decoration
3. Stoneware
   (a) Gray Salt Glaze
   (b) Alkaline Glaze
B. Glass
   (a) Applied Lip
   (b) Molded Lip
   (c) Molded Base
   (d) Kick
   (e) Base with Pontil
   (f) Miscellaneous Fragments
   (g) Blue Glass Tread Head
C. Gunflint
   (a) Pistol Flint
D. Metal
   1. Brass Keyhole Escutcheon on Iron Shield Shaped Plate
   2. Silver Spoon
   3. Unidentified Iron Objects

Table 3. Surface collections from the reservation site of Yokatubbee

<table>
<thead>
<tr>
<th>Category</th>
<th>Quantity</th>
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<tr>
<td>A. Ceramics</td>
<td></td>
</tr>
<tr>
<td>1. Shell Tempered Plain</td>
<td>35</td>
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<tr>
<td>2. Shell Tempered Pinched</td>
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</tr>
<tr>
<td>3. Chickasaw Combed</td>
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</tr>
<tr>
<td>4. Chickasaw Plain</td>
<td></td>
</tr>
<tr>
<td>B. Lithics</td>
<td>107</td>
</tr>
<tr>
<td>1. Madison Points</td>
<td></td>
</tr>
<tr>
<td>2. Collins Points</td>
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<tr>
<td>3. Dalton Points</td>
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</tr>
<tr>
<td>4. Flakes (heat treated)</td>
<td>1</td>
</tr>
<tr>
<td>5. Hammerstone</td>
<td></td>
</tr>
<tr>
<td>II. Non-Aboriginal Made Artifacts</td>
<td>31</td>
</tr>
<tr>
<td>A. Ceramics</td>
<td></td>
</tr>
<tr>
<td>1. Whitewares including Pearlwares</td>
<td>310</td>
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<tr>
<td>a. Edge Decorated</td>
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<tr>
<td>(1) Blue Shell Edge</td>
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<tr>
<td>(2) Green Shell Edge</td>
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</tr>
<tr>
<td>(3) Blue Dot and Leaf</td>
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</tr>
<tr>
<td>(4) Blue Embossed Clew's Pattern</td>
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</tr>
<tr>
<td>(5) Other Blue Embossed</td>
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<td>(6) Yellow Embossed Rope</td>
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<td>b. Transfer Printed</td>
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<td>(1) Light Blue</td>
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<td>(2) Dark Blue</td>
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<td>(3) Black</td>
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<td>(6) Red</td>
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<tr>
<td>(7) Purple</td>
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</table>

Rufus Ward is president of the Tombigbee Chapter, Mississippi Archaeological Association, and an attorney in West Point.

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ABSTRACT

This installment presents a general overview of the main point traditions of the Middle Archaic in Mississippi.

Middle Archaic Points

Points of the Middle Archaic period are easy to distinguish. They are, as a rule, cruder than earlier points and larger than later ones. Stepped and corner-notched forms predominate, though side-notched and basal-notched forms are present.

Flaking is nowhere near the quality of Paleo-Indian and Early Archaic forms. While Middle Archaic points may be asymmetrical in shape, they tend to be symmetrical in cross section. Flake scars are generally of the primary and secondary type. Little pressure flaking was done in the Middle Archaic. Serration and alternate bevelling of blades are therefore absent as both are done by pressure flaking. Basal grinding is also quite rare during this period.

Local gravel chert was the favored material over most of Mississippi. In the eastern part of the state Tallahatta Quartzite was a favored material. Fort Payne chert was quarried in Tishomingo County and was traded or exchanged over much of the northeast part of the state.

Earlier points of this period (ca. 5500-4000 B.C.) tend to be small, similar in size to Early Archaic points. After 4000 B.C. large points predominate and remain popular with the end of the period ca. 2500 B.C. Larger points have stem widths greater than 16 mm, often averaging around 20 mm or larger.

Finally, four major groups of Middle Archaic points can be sorted and placed on a distribution map (Figure 2). In northeast Mississippi the Sykes-Benton point tradition is the dominant Middle Archaic form. Points of this tradition are medium to large stepped forms. Basal are often bevelled. Favored material is Fort Payne chert, especially the "classic" blue-gray variety.

The Yazoo Basin and Natchez Bluffs regions of western Mississippi are home to the Denton tradition. Points of this tradition are usually stepped but side and corner-notched forms do occur. Materials are usually local gravel.

Southwest Mississippi and the adjacent coast of Louisiana are home to the notched blade point tradition. The two major forms are called Kirk var. St. Tammany and St. Helena. At present all specimens noted are made of local gravel.

Eastern Mississippi and the Gulf Coast are the least known areas of the state. A broad Middle Archaic form occurs in this area. Both stepped and corner-notched forms are present. Most examples are made from Tallahatta Quartzite, but local gravels were also used.

Figure 1. Projectile point examples. A, Sykes; B, Denton (Benton tradition); C, Denton; D, Williams; E, Castricville (Denton tradition); F, Kirk var. St. Tammany; G, St. Helena (Notched Blade tradition); H, Broad Point (Southeast Mississippi tradition).

Figure 2. Map showing distribution of traditions. B=Benton; D=Denton; N=Notched Blade; S=Southeast Mississippi Broad Points.

Samuel O. Brookes is an archaeologist with the Mississippi Department of Archives and History.
THE DE SOTO ENTRADA INTO THE LOWER MISSISSIPPI VALLEY
Jeffrey F. Brain

ABSTRACT
This paper reevaluates the author's previous work on the De Soto route across northwestern Mississippi and suggests new directions that research might take to investigate the possible consequences of the expedition.

The De Soto entrada into the southeastern United States is a privileged view of the native American Indians before they were overwhelmed by intensive European contact. For those who are interested in the Mississippi Valley it affords a single unique glimpse of some of the great native developments which archaeology now confirms had occurred, but which much later recorders could not see. Certainly, some liberties were taken in the reportage, Garcilaso being the most notorious example. But the De Soto narratives can no longer be summarily dismissed as flagrant exaggerations. Having regained credibility, they are vital documents. And if they can be specifically related to the archaeological record, they offer untold opportunity for reconstructing the identified contexts. Furthermore, the more secure the archaeological identifications, the more certain may be the possibilities of ethnographic analogies with later groups. Then may we come realistically to an assessment of the impact and consequences of the expedition, and the processes of culture change which may have occurred in the interim.

But, as is the case everywhere else with the De Soto expedition, there are considerable problems in reconciling the historical and archaeological data. This lack of coincidence is not surprising, really, when the scale of the expedition is compared to the vast geography that it traversed. We are confronted with a "needle-in-a-haystack" problem, but while we have the needle, we do not know exactly where it was in the haystack. As Garcilasso notes several times, the army apparently marched without the benefit of precise "navigational" fixes, although there were sailors among them. Thus the chroniclers themselves had little idea where they were at any one time. The actual geographic references in the unknown land are impossibly vague. Compounding the problem is the fact that the objectives of the expedition were appreciably different from ours. They were not as interested in where they were, or had been, as where they were going, because they were not as interested in what they had (nothing!) as in what they still hoped to get. Their directions, when given, were generally large segments of the compass rose. The result of all this is that while historical interest has raised expectations, the hope of tangible archaeological recovery approaches the forlorn. Not the impossible, however.

More than forty years ago, the U.S. De Soto Expedition Commission was formed under the distinguished ethnologist and historian John R. Swanton. The Commission made the first major comprehensive attempt to define the entire route of the expedition and to place it in specific native contexts. Their report, issued in 1939 (the quadrcentennial of the landing of the army) was perhaps the best they could muster with the evidence at hand. To be fair, Swanton was conscious of deficiencies in many of the reconstructions along the route. Time and again, the evidence simply was not sufficient to come to grips with the puzzle. Swanton recognized this, and left the door ajar for archaeology (e.g., 1939:295).

Archaeologists have been reluctant to keep these problems in

Figure 1. Generalized route of the De Soto expedition and approximate locations of the "provinces" located in the Mississippi Valley.
mind. In many instances, the De Soto Commission’s identifications of sites which were probably contemporary with De Soto have been discarded, and many parts of the Commission’s "authenticated" route have now been discredited. As a corollary, new archaeological data have provided positive evidence for major revisions. An example is the entrada into the Mississippi Valley.

The Entraña

Some years ago, we proposed a route for the expedition’s entrance into, and through, the Mississippi Valley which, in our opinion, is in many respects from the Commission’s conclusions (Brain, Toth, and Rodriguez-Buckingham, 1974). Our hypothesis—for it must be remembered that all De Soto studies to date are hypothetical, devoid of proof—is not likely to be correct in every last detail, and it is quite receptive to alternatives in the search for definitive identifications. In the main, however, I believe that our proposal still best satisfies all known lines of evidence, especially the archaeological. Since our conclusions and the evidence for them have been published (Brain et al., 1974), it is not necessary to repeat the detail here. A brief recap, however, is in order (Figure 1).

We believe that the army left Chicosa, located in northeastern Mississippi south of Tupelo, in late April 1540 and traveled west. The north direction is a red herring offered by Garcia de luero (1551:422), who was remarkably unreliable in matters statistical. Elvas does mention going northeast to nearby Atalhau, but is silent on the main course to the river, although in his summary of the entire route a general western direction may be inferred (Bourne 1904:1:221).

And only we satisfactorily describe the entries in the long arduous journey through an unpopulated region, a rough wilderness full of swamps and pond places, i.e., the Yazoo Basin. De Soto was not without advance intelligence. Throughout, he sought information about possible routes, and this leg of the journey surely was no exception. He knew his destination, and his choice of the rough way reveals his determination to reach the "Great River" as directly as possible. It may be speculated that he had already recognized his expedition’s failure, and was ready to escape by means of the river he knew (or suspected, but later events reveal the knowledge) led to the Gulf. Or, perhaps, he had been enticed by descriptions of the great “provinces” concentrated on the banks of the Mississippi. In any case, they were desperately short of food and, even with the many wounded from Chicosa and Atalhau who would have fared better if they could have taken a rest, they forced a march by the most direct way to the river.

They first found their destination in the territory of Quizquiz, which we identify with the vicinity of Clarkdale, Mississippi. They quickly

* In this case of confusion, he has either continued the motion and direction of the Mauila to Chicosa leg of the journey, or he bypassed the Aquixo to Chicosa segment described by Elvas (Bourne 1904:1:117). Taken together, and mindful of the intermediate dogleg, the direction is generally northwest. Actually, if Lankford’s (1977) more southerly route into Mississippi from Alabama is accepted, it allows a slightly northwest course to the river for those who still wish to keep faith with Garcia de luero. But it also requires that Chicosa be removed to a location far south of its traditional placement. The question must remain open. For now since there are no new data to bear upon it.
ethnic identification which can be made with reasonable certainty, it is
the province of Quigualtun, whose inhabitants were the ancestors of the
Natchez. And yet, frankly, the evidence really is not better. The reason
for our confidence, in fact, is that in this part of the valley the great
demographic changes which occurred farther north did not happen on the
game massive scale (Brainerd 1932; Brainerd et al. n.d.). There was great in situ
continuity for the ensuing century and a half, although the scene changed
dramatically. This point is very important for the consideration of impact
and contact between the Apalachees and the Spanish. The splendid barrels of their once splendid horses (e.g., Bourne 1964
(11):130). The remaining goods were carefully hoarded, and even the many
dead probably were stripped of all usable items (thereby denying
archaeology one of its most important potential forms of evidence,
and giving the lie to the internecine accounts of "De Soto" burial
discovered over the years).

Despite this rather gloomy assessment of the potential for retrieving
archaeological evidence of the expedition, there is one ray of hope.
Apparently, a few expendable trinkets survived into the second, even third,
year of the expedition and provide some evidence of the presence, if not
actual route of the army (e.g., Elkins 1975:77-78); Foremost among
these relics seems to be the Clarksdale bell (Brainerd 1975; Brown 1979).
The bells, numbering in the dozens, have been found from Florida to Arkansas.
Some, on the eastern side of the distribution, might be attributed to later
expeditions, as Smith (1976) has indicated. I am not
uncomfortable with the idea, for there is no reason to believe that these
artifacts were available to De Soto alone. But I am stung by their
apparent continuing absence at coastal sites, except perhaps for the Bann's
Creek (Florida) bell. Aside from this possible exception, all the bells
are found far in the interior. It may be that the Alabama examples, even
the Tennessee, could be ascribed to the De Luna or Pardo expeditions: again
the timing is close enough so that it is reasonable to expect that these
expeditions had artifacts comparable to De Soto's in their store (and the
associated glass beads reinforce this possibility, as again demonstrated by
Smith). But farther west we really must consider the bells a probable
artifact of De Soto. And in fact they parallel the general path of the
route closely, although certainly not precisely, and this accords with the
caveat already given. The known provenances of the Clarksdale bells are
shown in Figure 2. A number of examples have recently been recognized from
the Lower Mississippi Valley, most of which were found well within
the range of the entrada.**

There is some evidence that such items may have been taken out of
circulation by the Indians fairly quickly, thus having a restrictive effect
on distributions (Smith 1976:28).

To be fair, there is some problem with our theory of the route if we
consider the Campeche site in the bootheel of Missouri, which appears to
have produced some Clarksdale bells. They are Clarksdale bells, certainly,
but they were found under less than professional circumstances. But then
so have most of the others, which have been accepted readily because they
fit the route closely enough. To do these perhaps was that scouting
party sent north from Capaha. Some of the last trinkets might have been
lavished in seeking the lost hope. A simplistic explanation, but perhaps
no less so than the idea of contemporaneous wandering of such portable
artifacts by the Indians, themselves, or even (injecting time) heirloom
among the recipients. So those items are not infallible proof of De Soto
footsteps, by any means, but they are becoming increasingly good indicators
of his general presence.*

By the time the conquistadores arrived at the Mississippi, they were
very few on diagnostic artifacts. Supplies and equipment were greatly
depleted by the wear and tear of two years of wandering without
replenishment, and particularly by the twin disasters at Nauvoo and
Chicaha. Even the rich and famous among them were reduced to rags and
skins, and some of their survivors were of their once splendid horses (e.g., Bourne 1964
(11):130). The remaining goods were carefully hoarded, and even the many
dead probably were stripped of all usable items (thereby denying
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no less so than the idea of contemporaneous wandering of such portable
artifacts by the Indians, themselves, or even (injecting time) heirloom
All together, the bells, and other associated artifacts as they are found and identified, provide us with artificial clues to the route. They may not be precise indicators, but to date they are the most reliable evidence of the De Soto presence. Given the widely varying theories for the path of the army’s march across the vast map of the southeastern United States, an archaeologically verified datum which can at least define general zones of contact must be considered a significant advance toward our ultimate goal. We may yet be unable to pinpoint specific sites of interaction, but we are coming close enough in many instances so that reasonable hypotheses may be generated concerning the consequences of a widely impacting phenomenon as possibly revealed in the broad archaeological record. The Lower Mississippi Valley is a case in point.

The Consequences

If what has been outlined above approximates the route of De Soto and his army, then what can we say about the consequences of the expedition? We come now to the really salient point of these studies. The most important reason to trace the route of our errant friend is not the mere adventure, nor hearty antiquarianism, nor the titillation of sacred footstops, nor the discovery of this or crossing of that. For us, the interest lies in where the events in the narratives occurred so that we can relate the meager ethnohistoric information contained therein to specific archaeological sites and to specific contexts within those sites, so that we then can get about the job of more fully reconstructing those contexts.

And, finally, we have the opportunity of correlating those contexts to others before and after in time so that we can begin to evaluate the impact of this first, most dramatic, contact between the European and the Indian in the eastern United States. We have yet to satisfy the first requirement of adequately documenting archaeologically the presence of De Soto at a specific site in the Lower Mississippi Valley, although we can reasonably identify some of the sites mentioned in the narratives, such as Quiqualcing. Yet in the gross fabric of the archaeological record we can see changes to which the event of the entrada may well have contributed. There is a definite unraveling of the fabric—not just a change in the weave.

The impact of the entrada must have been considerable. But its consequences must have been myriad. It was surely a scourge of God, but like such plagues its effects must have differed considerably from place to place. In the Valley, the sixteenth-century Spanish descriptions of the great native population contrast sharply with the later archaeological and historical records. Clearly there was dramatic change, especially a drastic loss of population (pestilence is a reasonable and often cited explanation, although we do not yet have the evidence). But there was not a sudden collapse. Some local florescences seem to have continued, even if at a reduced scale: for example, the Arneson phase in the north (Williams 1980), deep lake in the Yazoo (Williams and Brant 1983), and Emerald in the Natchez region (Brain, Brown, and Steponaitis n.d.). By the time of the French, however, even these had disappeared. The St. Francis and Yazoo pieces which have been found in space as well as time. This latter possibility does mesh with the conclusion of Chapman and Anderson (1953) that Campbell post-dated De Soto and had its closest cultural affinities to the north with the Nompic archaeological subarea (Phillips, Ford, and Griffin 1951). Thus these might have been people who, along with others we know of, moved north after the severe depopulations had cleared the way for mass migrations.
Mississippi Archaeology, Vol. 19, No. 2

Basin were almost completely depopulated, with only small groups, obviously composed of remnant tribes, clinging to the margins of these regions. The Natchez survived only a little better (perhaps, in part, because they had avoided intimate contact?).

The remnant tribes discovered by the French generally lived away from the Mississippi, almost as though they were in hiding, unlike the mighty hosts of Capano and Quiaquilma who disputed its use by the usual interlopers. The archaeology confirms this orientation away from the river in both the Yamacraw and Natchez regions (Brain 1978; Brown and Brain 1984), and the Quapaw seem to follow generally the same pattern in Arkansas. But the archaeology also indicates that the trend was already in progress prehistorically (Brain n.d.), so we would be wrong to assign this shift solely to fear of another De Soto. Yet perhaps he was a catalyst. It is the only hypothesis, aside from the obvious depopulation, that presently relates the archaeology and the event.

The basic problem confronting studies of culture change in the Lower Mississippi Valley during the prehistoric-historic periods is the difficulty of establishing ethnic continuity. There were a few strong continuities, of course, for example the Natchez and the Tunica. But the demographic changes were so severe, the population declination and displacements so catastrophic, that lines of continuity in most cases become almost impossible to discern with conviction. While we can feel confident in tracing the descent of the Natchez from Quiaquilma (Brain 1976; Brain, Brown, and Steponaitis n.d.) and venturing the same for Quiaquilma and the Tunica (Brain 1977, 1979), this is but a shadow of the truth. Even granting some genetic continuity in both cases, we cannot overlook the fact that both were already divided groups harboring other remnant tribes in their midst. Thus continuities in many cultural spheres must have been stretched mighty thin, even to the point where under the circumstances certain identifications seem well nigh impossible. But given the opportunity of such studies we must try. We have the singular advantage of archaeology, and we must capitalize on it. We must get beyond the grand leaps of simple analogy, the principal failure of all past efforts. We must, as we have been doing with the Tunica (Brain 1977, 1979), develop archaeological points in time during the entire period of European contact and subsequent change. These highly detailed units then become related documents which can be compared with each other to document the changes which have occurred. And then we can begin to address the ultimate goal of interpreting the processes involved.

In order to pursue such studies, we must also develop more sophisticated theoretical models of culture change. The anthropological and archaeological literature is full of evolutionary theories focused on developmental change in growth toward more complex systems. But the literature is not as well endowed with theories concerning the deterioration or breakdown of complex systems, which is obviously as important a consideration. We must know the whole cycle: evolution in complexity is equally important, and what better arena to attempt an understanding of some of its processes than during the historic contact period, beginning with De Soto? The dramatic consequences occurred within a set temporal framework and are even partially illuminated by written documents. But first we must achieve the as yet largely elusive goal of accurately relating the archaeology to the documents, and to do that we must continue the archaeological refinements discussed above.

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This note suggests two hypotheses about Chickasaw Combed ceramics: that the tool used to produce the design elements was in fact a European trade comb and that the technique of combing may have been invented and transmitted by the Tensa.

Chickasaw Combed ceramics were identified as the diagnostic type for historic Choctaw sites by Henry B. Collins in 1927 (Figure 1). Since Collins wrote and collected, the type has become recognized for what he said it was on a number of sites in east central Mississippi (Chambers 1932–35; Ford 1936; Phillips 1970; Atkinson and Blegen 1975; Tennon 1977, 1978; Ward 1983; Blitz n.d.) and has been formally described by Ring.

Examinations have been carried out recently at the French Fort Tombigbee, which was established on the Tombigbee near the present Epes, Alabama, in 1736 to provide trade and diplomatic links with the Choctaw. No Chickasaw Combed sherds were found on this site in securely sealed French-period deposits (Parker 1981), and this evidence first suggested unequivocally that the type was not characteristic of the French period, at least not in the eastern Choctaw region. Further work carried out by John Blitz in Kemper County demonstrated that Chickasaw Combed was indeed a minority ware in that area, and the European items found in conjunction with it were quite clearly to be dated no earlier than the late eighteenth or early nineteenth century (Blitz n.d.). We know that the type continued in use in Mississippi around the time of Removal (Ward 1981) and was even made by Choctaws in Oklahoma later in the nineteenth century (Williams 1981). The nearest thing to the type which we have from the
French period is the Bayou Goula Incised type (Figure 1) from the eponymous site excavated by Quimbly (1957). I would like to suggest here that the type is of relatively recent date in the Choctaw heartland, and that its execution technique came from the west. The first step in arguing this view is the suggestion of a technical hypothesis: ceramics with combed decoration had their decorative motifs executed using a broken piece of a European trade comb. As gratuitous as this remark may seem on the surface, I think there are sound arguments in its favor.

1) The absence of combing as a decorative technique, in the context of the astonishing variety of decorative techniques employed on late Woodland and Mississippian ceramics, suggests that there was no natural floral or faunal material which enabled almost perfectly parallel, evenly spaced combed lines to be executed in an obvious way. Combed decorative techniques observed on types other than Chickasah Combed, especially the misleadingly named Bayou Goula Incised (Quimbly 1957), occurs only on sites known to have had contact with Europeans and producing ample evidence of this contact in French trade goods.

2) Very few combs have been found on aboriginal sites in eastern North America. Those that are known are of a type that would not fit the requirement of closely-spaced teeth needed for the historic combed ceramics (Figure 2), nor is it easy to see how such combs could be made without metal tools (Galloway and Newcomer 1981). Existing combs of certain native origin without European influence come only from sites with a Woodland period component.

3) Lists of French trade goods from the earliest period always include grass after grass of boxwood combs (Rowland and Sanders 1929:154); the French distributed combs to all their allies. The Choctaw, who were known among the southern tribes for wearing their hair long (Swanton 1931:57), presumably were eager to acquire such combs. But there was another more basic reason for the attraction of combs as trade items: their use in the eradication of fleas and lice. Certainly the demand for them seems to have been continuous, since they appear on the trade lists down to the end of the French period (Rowland, Sanders, and Galloway 1984:231). And Romans, remarking on the skill of a Choctaw craftsman he observed (Romans 1961:56), reports having seen one made in the 1770s. In other words, native groups had acquired these combs and were using them at the same time that combed ceramics appeared.

4) A wooden comb is made in such a way that the grain of the wood runs in the lengthwise direction of the teeth, for the very good reason that if it is not, the teeth will break off almost immediately in use. When one of these combs breaks, then, it breaks along the vertical axis in such a way that a piece having some small number of intact teeth may be broken off. Wooden combs would have been especially prone to this kind of breakage when exposed to extremes of heat and moisture, normal in the Southeast. The same type of comb was issued to the French soldiers at the rate of two per year (Rowland and Sanders 1937:124); this does not argue for extreme durability. A drawing of the type of comb in question and a suggestion of normal breakage patterns is shown in Figure 3.

Figure 2. Sketch of two combs from Fort Ancient aspect sites, Cramer (left) and Faut (above).

Figure 3. The type of the standard French trade comb. These combs were made of boxwood, with the grain running vertically with reference to this drawing. Likely breakage lines are shown with dotted lines.

What we have, in short, is an object whose broken pieces are not very useful for its primary function. The object was in the right place at the right time and the adoption of necessary techniques for its manufacture by the aboriginal population ensured that it would continue to be available. What explains the apparent lateness of the appearance of combed ceramics decoration among the Choctaw? To tackle this problem we will look at the spatial distribution of Chickasah Combed and similar ceramic types (Figure 4). First, however, we should examine the latest evidence on the Choctaw ceramic complex. John Flitz, in his recent thesis, reanalyzed all collections of Choctaw pottery now available, including his own samples from a Kemper County survey, and has reclassified the ceramics as follows:
Type  Temper
Mississippi Plain   \textit{conch shell}
Bell Plain   \textit{fine shell}
Addis Plain   \textit{fine grog + fine sand and/or shell}
Kemper Combed   \textit{fine grog + fine sand and/or shell}
Fatherland Incised   \textit{fine grog + fine sand and/or shell}
Unclassified Plain   \textit{fine sand}
Chickasaw Combed   \textit{fine sand}

Blitz has separated the incised pottery from the comb, instead ofsubsuming it in others he has done, has separated the combed pottery on thebasis of paste, and has demonstrated that combed pottery is associated withlate British/American trade objects (Blitz n.d.).

Yet it is clear that elsewhere combing has earlier associations. Thevery similar Bayou Goula "Incised", from a site on the west side of theMississippi River south of Baton Rouge, is clearly associated with Frenchtrade materials and Fatherland Incised ceramics (Quiquy 1957), while a typeidentified as Chickasaw Combed is found extensively in the eastern part ofthe Mobile River delta, also in association with French trade goods (Stowe,personal communication 1984). We know that the Bayou Goula site wasabandoned by 1724; cartographic evidence suggests that the Mobile delta siteswere inhabited into the British period. The key to a comparison lies inidentifying the inhabitants, and there is a possible link.

The French met the Bayou Goula as early as Iberville's firstexpedition in 1699 (McWilliams 1981:58-64), although La Salle in 1682 doesnot mention them. The fortunate fact that Tonti left a letter for La Sallewith the Quinipissa in 1686 allowed Iberville to learn that the Bayou Goulawas newcomers to the site and that they had absorbed the remnants of agroup identified as Mapacaha, who were somehow related to the Quinipissas.But by 1706 the Bayou Goula were replaced by the Taensa, a tribe that hadbeen found and traded with rather extensively by La Salle on Lake St.Joseph in 1682; Tonti saw and traded with them again in the same locationin 1686 and 1699.

The Taensa spent ten years at the Bayou Goula site. In 1715 theyrequested of Iberville that he allow them to resettle on the easertip of theMobile River Delta (Rowland and Sanders 1932:183), which had beendepopulated by Choctaw-related groups due to English-sponsored slave raidsby the Alabama around the turn of the century. There they remained,giving their name to the eastern branch of the Mobile River. A few Taensa,however, apparently crossed the Mississippi to settle at Manchac.

It is possible that the peripatetic Taensa hold the clue to thetransmission of combing as a technique for the execution of "Natchezan"decorative motifs. Little is known of Taensa pottery from their originalhome of 1682 (Williams 1975), but the circumstantial evidence cited above does permit us to attribute combed ceramics, identical but for temper, tothem in two other locations:

1) At the Bayou Goula site, Bayou Goula "Incised" and Fatherland Incised ceramics are found together with French trade goods as the latestcomponent on the site. We know that the Taensa were the last to inhabit thesite and that they affected a mass removal eastwards, thusjustifying a large discard of damaged pottery. The paste of Bayou Goulaincised" is apparently Addis: "Very fine particles of grit,clay, shell, and unidentified organic matter..." (Quiquy 1947:126).

2) The Taensa, according to several French sources, spoke the samelanguage as the Natchez (a language very different from that of anyother group west of the Mississippi) and were on terms of alliance withthem. Both their missionary, Montigny, and Le Page du Pratz remarkedupon their cultural similarity to the Natchez (Le Page du Pratz 1758(II):219; Shea 1861:76). That they should share decorative motifs forceramic (e.g., Natchezan scrolled motifs) would not be unexpected. The sparse ceramics from the Lake St. Joseph site are said to bear suchmotifs (Williams 1967).

3) Both Bayou Goula "Incised" and Chickasaw Combed ceramics sharedecorative motifs very similar to Natchezan motifs and unlike thoseof the Alabama River phase ceramic tradition found east of theTombigbee. Quiquy recognized this long ago when he placedboth within the "Natchezan culture type" (Quiquy 1942).

4) Finally, the likelihood that the Taensa may have been responsible forthe introduction of combing is favored by two facts: they were amongthe earliest to trade with the French and obtain combs, and thecultural disruption of their travels would favor innovation.

5) Even if the Taensa merely adopted the combing technique from theirBayou Goula victims, it is quite possible that they carried it eastwardwith them. The Bayou Goula were almost completely destroyed by theTaensa at an early date and could not have been responsible for suchinfluence much later.

But what can be done to test these hypotheses? There are several suggestions that can be made for the technological hypothesis. First, if thecomb technique of surface decoration can be paralleled from aprehistoric stratified context, the hypothesis' assertion with regard to time of origines for this technique will be proved null. Positiveverification that trade combs were used can be sought via a closerexamination of the combing that occurs on the sherds. If double-sidedsimple combs (Galloway 1976) were the tools used, then it is conceivablethat one vessel might have two gauges of combing corresponding to the fine
and coarse teeth of the double-sided comb; this would constitute a very circumstantial argument. Finally, casts should be made and cross-sectioned so that the profiles of the combed lines can be compared to lines made in the same way experimentally using a similar wooden comb on a similar ceramic paste.

The hypothesis that the Tenasse may have invented and spread the technique of combing is less easy to test, but there are some suggestions for further research that can be made. First, there is a serious need for intensive survey and testing of the areas known to have been inhabited by the Tenasse on Lake St. Joseph and at Manchac. We would expect that such research would at least establish Natchezan decorated groups for the Tenasse ceramics and the presence of French trade goods. Next, there is a need for further detailed study of the Bayou Goulia site ceramics, for survey of the site's catchment area, and for a careful review of the documentary evidence. Such study should establish the proportion of combed ceramics now called Bayou Goulia "Incised" and show whether the type is confined to this site—as we would expect if only the transient Tenasse had made it—or if to be found also on farmstead sites in the area—which would argue more for the Bayou Goulia. The areas north and south of New Orleans said to have been inhabited by the Bayou Goulia after their expulsion by the Tenasse should be surveyed to establish their pottery complex with more assurance. Documentary review might be expected to reveal more about the complex relations among the Acclapissas, the Nipulachas, the Bayou Goulia, and the Tenasse, which would allow us to speak with more assurance to the sequencing of the site.

Work now in progress by Stowe and his colleagues should establish a similarly clearer picture of the Tenasse east of the Mobile delta in the context of the cultures and tribes originally located there. We would, of course, like to know much more about Chocow and Chocow-related groups in that area, not only to learn more about Chocow-Tenasse contact as it might relate to the transmission of the combing technique, but to help solve the general puzzle of the relationship between Chocow and Natchezan cultures.

Why do we need the Tenasse at all for the explanation of combed ceramics among the Chocow? As we have seen, the Chocow had French contacts at least from the first decade of the eighteenth century, and they could certainly have invented combing for themselves. And the Bayou Goulia are assumed to have been Chocow-related, though there is no direct evidence of direct contact between the two groups during the crucial 1682-1706 period. What we are trying to account for here, however, is the delay factor—the fact that no one knows of no combed Chocow ceramics before the end of the eighteenth century. It would also be nice to account for the only other area manifestations of combed ceramics at the Bayou Goulia site and east of the Mobile River, and it seems more likely that the Tenasse have the only credentials to tie these areas together.

If all this analysis either or both of the hypotheses seem reasonable, it may alter our approach to tracing the origins of the Chocow in the protohistoric period through their pottery. Blitz has pointed out that we should refocus our search for continuities of design by looking for general design themes rather than precise techniques of execution (Blitz n.d.). If we can firmly establish that this must be so in the case of the Chocow, we may finally locate the earlier sites that have so far eluded us.

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The task of assimilating all the included artifacts for study was more impressive by the fact that most of them were looted from the mound during the 1930s, were sold, and subsequently became dispersed among private collections and museums across the country. A background history of the site and its fate during the last half century is detailed in Part I, Volume I, Chapter I. "The Archaeological Background at Spiro." Briefly, the site was situated within the Choctaw reservation region of Oklahoma and remained obscure and protected by its earlier owners. One of the mounds was excavated by Joseph Thompson around 1914, but efforts to dig in
stylistic similarities with Caddoan sites; the so-called "Southern Cult" of the southeast; Cahokia; various "McAdams" style gorgets from Missouri, Illinois, and Tennessee; shell engravings from northeast Arkansas and southeast Missouri; chunkey player gorgets from Missouri and Kentucky; other Tennessee engravings and the Dallas culture of that state; Etowah and other Georgia sites; Moundville in Alabama; Walls-Pecan Point pottery; Arkansas' Parker phase; various Lower Mississippi Valley sites and artifacts; and certain copper plates from the southeast.

Volume 1 constitutes the major introductory text of the set. The following two volumes contain the 389 full-page plates of rubbings of shell engravings, each accompanied by a page of explanatory text and a drawn reconstruction sketch of the original design. Each volume of plates is preceded by a few pages of introduction and explanatory text dealing with the particular stylistic "school" represented in that volume. Part I of the set concludes with Volume 2 dealing with the characteristics of the Braden A group, and Volume 3 characterizing the Braden B and C groups and their interrelationships, followed by a provisional bibliography.

Part 2 (1984) is made up of Volumes 4-6, which deal with the Craig "school" stylistic phases. The introduction to Volume 4 reviews the assumptions upon which the separation of the two "schools," Braden and Craig, was based. This is followed by a brief description of the design features characteristic of Craig A, the earliest phase of that "school." The remainder of the volume consists of plates of rubbings exemplifying early and mid-phase of Craig style, along with accompanying explanatory texts. Volume 5 features a discussion of the stylistic features of Craig style. Its transition from Craig A, relationships with other stylistic phases, and a description of the stylistic features of the Craig B phase. This is followed, as in previous volumes, by exemplary rubbings and text. Volume 6 gives similar treatment to the engravings of the later Craig C phase, with additional rubbings and explanatory text.

Following this are Appendix A, containing primarily rubbings of grave shell cup fragments which were not classified into any particular style category. Then, Appendix B presents rubbings of classified Braden and Craig style shell engraving acquired too recently to have been included in the preceding volumes. Completing Part 2 are general summary, bibliography, index, and errata and addenda to the Paperback Edition.

Even with the inevitable problems of artifact proveniences, adequacy of sample, and style phase hypotheses, this work is a monument to the dedication and years of hard work of its contributors. Its thesis is excellently presented and adequately covered, providing a significant contribution not only to the late prehistoric archaeology of eastern North America in general, but a sound basis for future research into the Southeastern Ceremonial Complex and the ceremonial life of the Indian cultures during the Mississippi period. There is also provided a major scholarly study of prehistoric art style which should prove an invaluable reference in that field of study, especially as an exercise in the development of hypotheses of art style chronology and interrelationships. The project itself is impressive, and the result is highly commendable. The authors are to be complimented for an excellent job.

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Robert Hyatt is a staff archaeologist with the Mississippi State Highway Department.

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Robert Thorne is the Director of the Center for Archaeological Research at the University of Mississippi.
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--Editor