MISSISSIPPI ARCHAEOLOGY

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

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MISSISSIPPI ARCHAEOLOGY

Volume 25  December, 1990  Number 2
The Palmer-Lewis “Mound Survey” Forays into Tennessee, Mississippi, and Louisiana, 1881-1883

Marvin D. Jeter

The pioneering archaeologist Edward Palmer worked intensively in Arkansas for the Smithsonian “Mound Survey” during the early 1880s. He also made forays into other states, sometimes assisted by a black artist, H.J. Lewis. Among the notable sites visited were Grassy Island and De Soto Park in western Tennessee; Emerald, Leland, and Parchman Place in western Mississippi; and Troyville and Pargoud in northeastern Louisiana. More than a century later, Palmer’s collections and notes and Lewis’ drawings can still contribute to current research and understanding of these sites—an object lesson in the value of institutional curation.

Introduction: Dramatis Personae

Edward Palmer

During the period 1881-1884, Dr. Edward Palmer worked as a “permanent” field assistant for the Mound Exploration Division of the Smithsonian Institution’s Bureau of Ethnology. This great “Mound Survey” project covered the eastern United States and resulted in the debunking of the widespread notion that a non-Indian lost race of “Mound-Builders” had once occupied these lands (Thomas 1894; Smith 1985, 1990; Jeter 1986, 1990; Brown 1990).

Palmer, born in England around 1830, came to the U.S. in 1849. After a brief stint at the Cleveland Homeopathic College, plus enough on-the-job medical and surgical experience in Kansas and Colorado, in the U.S. Army during the Civil War, and afterwards in “Indian Territory” (Oklahoma) to warrant his “doctorate,” he became perhaps the nineteenth century’s greatest botanical and “natural history” field collector (McVaugh 1956). His collections and notes are still useful in the fields of botanical taxonomy, evolutionary ecology, and plant germplasm conservation (Robert A. Bye, Jr., 1986 personal communication).
He has been called the founder of the field of ethnobotany (Bye 1977, 1979, 1980, 1985; cf. Palmer 1871, 1878).

He was also a pioneering ethnological collector and archaeologist in Arizona, Utah, Nevada, California, New Mexico, Texas, and various parts of Mexico, mainly working for the Peabody Museum at Harvard and the Smithsonian (Jeter 1990:39-70). Shortly before joining the eastern mound project, he had been welcomed back from central Mexico by Peabody Museum Director Frederic Ward Putnam for his "magnificent" archaeological and ethnological collections:

Of the collection of antiquities, it can be said that it is the first we have received from Mexico of which the exact condition under which each object was found is known. The care with which the excavations were made and every associated object secured and properly labelled, gives the first clue we have had at the Museum for the proper understanding of the different periods of prehistoric time in Mexico (Putnam 1880:718-717).

... in articles of modern pottery alone, [the collection] numbers over five hundred specimens ... a large and varied assortment of all the articles of native manufacture in earthen-ware, that are found in an Indian village of to-day ... samples of the clay in different stages of preparation, with the moulds, dies, paints, polishing stones, and scrapers of wood, bone, and corn cob, so that it is possible to follow the native potter through all the various processes of manufacture from the crude clay to the perfect vase ... The collection of articles made from vegetable and animal substances is also complete ... (Putnam 1880:733-734).

Palmer had followed this triumph with an 1880-81 expedition to northern Mexico, making some remarkable finds of preserved perishables associated with mummies in the dry caves of Coahuila (Palmer 1882). The skeletal remains were later analyzed by a pioneering female physical anthropologist and archaeologist with the remarkable name of Cordelia Studley (1884). Palmer had also been the first field explorer to warn scientists about the destructive potential of the cotton boll weevil, which was then marching relentlessly northward through Coahuila (McVaugh 1956:81). In short, at this time he was at the peak of his unique career.

Most of his work for the Mound Survey was done in Arkansas, which was one of the most intensively investigated states (Jeter 1986:149; 1990), but he did make occasional forays into other states, including Tennessee, Mississippi, and Louisiana. His investigations in the Lower Mississippi Valley portions of these states are the principal subjects of this article.

Although his work was cited favorably by Holmes (1883, 1884, 1886), Palmer did not get along well with the director of the Mound Investigation Division, the stern taskmaster Cyrus Thomas (Safford 1926:479-481; McVaugh 1956:55; Brown 1990; Jeter 1990). He left the project in 1884, and returned to botanical, natural history, and ethnobotanical collecting, and worked in those fields (especially in Mexico) with marked success, almost until his death in 1911.

Palmer was an inveterate, if eccentric, note-taker and letter-writer. The documents he produced are often amusing, due to his unusual and colorful figures of speech, hectic punctuation and capitalization (or lack of same), and "creative" spelling, all of which are reproduced verbatim in the examples quoted below. They are also somewhat maddening to work with at times, due to his tendencies toward "directional dyslexia," often-indept efforts at quantification, inconsistencies, and idiosyncrasies. Sometimes, for example, he estimated distances along section lines (e.g., due north plus due west) rather than directly (e.g., northwest), often without specifying which method he was using. Also, as will be seen, changes in site names and appearances over the years add to the difficulties. But with a little practice and effort, his documents can usually be deciphered and related to his collections (Jeter 1989, 1990). All too often, they are our only sources of information about the locations and layouts of sites that have long since been seriously damaged or destroyed.

H.J. Lewis

Palmer had been ordered to make drawings, profile sketches, and maps of sites. He did make some crude sketches from time to time, but had virtually no artistic aptitude. While working in the Memphis vicinity in early November 1882, he met and hired a black artist named H.J. Lewis to assist him.

Henry Jackson Lewis was born into slavery around 1837 in Water Valley (later the birthplace of the pioneering Lower Mississippi Valley archaeologist James A. Ford), in north-central Mississippi, just south of Oxford. He never went to school, but somehow learned to read, write, and draw.

By 1872, Lewis had moved to Pine Bluff, Arkansas, and was apparently working as a "laborer" and part-time as a freelance artist. By 1879, he had sold several sketches of Pine Bluff and Arkansas
Valley scenes to Harper's Weekly. In the early 1880s, he had something of a reputation in the Pine Bluff vicinity as a “caricaturist and pencil artist” according to an 1882 article in a white newspaper that predicted a “brilliant future” for him.

Lewis worked with Palmer officially for only about two months; on January 10, 1883 in Arkansas City, Arkansas, Palmer received orders from Thomas to “discontinue” Lewis, possibly due to budgetary constraints, but perhaps because Thomas thought Lewis’ drawings exaggerated mound heights. As will be seen, however, there is some strong circumstantial evidence suggesting that Palmer and Lewis met again and worked together unofficially, at least during March 1883.

In all, Lewis made some 38 drawings of Arkansas mounds for Palmer. Several of them were redrawn as engravings by the artist-archaeologist William Henry Holmes and published in Thomas’ (1884, 1885) final report on the project. Some 31 of Lewis’ original pencil sketches of Arkansas mounds have survived, and are curated at the Smithsonian’s National Anthropological Archives (NAA); they have all been published in my book on Palmer’s “Arkansaw Mounds” investigations (Jeter 1990: Chapter 7). (Six of Holmes’ revisions of Lewis’ Arkansas mound drawings were published in Thomas’ final report, and the Lewis originals are missing in five of these cases.)

The NAA files also include original Lewis sketches of single mound sites in Tennessee and Mississippis, the latter has apparently never been published before. My researches also turned up an anonymous engraving of the famous Troyville Mounds in Louisiana, derived from a (long-lost) Lewis original, that was published in an 1883 tabloid and promptly forgotten. All three of these illustrations are reproduced in this article, along with two Holmes engravings derived from Lewis’ Mississippian mound sketch and two Holmes engravings that were possibly derived from lost sketches made by Lewis at Troyville.

Lewis’ subsequent activities are essentially undocumented for the next five years, though it appears that he remained in Pine Bluff all or most of this time. At the end of 1888 or in very early 1889, though, he moved to Indianapolis and became the staff artist for The Freeman, which billed itself as “A National Illustrated Colored Newspaper” and “The Harper’s Weekly of the Colored Race.” Although his works for this paper included many styles and subjects, perhaps the most noteworthy are his attacks on the Benjamin Harrison administration and on racism in general, for which he has been called “the first Black political cartoonist” (Spradling 1980:593; Jeter 1988, n.d.). Lewis was never well in the harsh Midwestern climate, though, and died of lung disease in April 1891.

Act One: Tennessee

Eastern Tennessee

At the very beginning of the “Mound Survey” in July 1881, Palmer made some extensive and significant ethnological collections from the Cherokees of extreme western North Carolina (Holmes 1884:434-437). During the rest of that summer and into the fall, he worked on archaeological sites in eastern Tennessee with some notable successes, especially at the McMahon Mound near Sevierville, just north of the Great Smoky Mountains. There he found some remarkable Mississippian shell artifacts that were illustrated and discussed extensively by Holmes (1883:214-303; 1884:438-467) in two Bureau publications (but ignored by Thomas, who did not join the project until mid-1882). In mid-October, he left for northeast Arkansas to begin several months of reconnaissance there (Jeter 1990:90, 120ff).

After being driven from the field in Arkansas in January 1882 by “excessive rains” and “the appearance of small pox,” Palmer spent the winter in Washington and returned to eastern Tennessee in April. He seems to have accomplished little there this time, though, and around the beginning of May, traveled to western Tennessee (see below). He also visited a number of localities in eastern and central Tennessee between February and June 1883, but this work appears to be poorly documented (McVaugh 1956:331), and I have not researched it.

Western Tennessee

In May 1882, Palmer worked first near Paris in Henry County and Savannah in Hardin County, western Tennessee. Thomas (1891:205) listed three sites in each of these localities in his preliminary catalog, but did not mention them in his final report, and I have not investigated them further.

REELFOOT LAKE AND GRASSY ISLAND. In late May and early June, Palmer visited the Reelfoot Lake locality, on the Mississippi River floodplain in Obion County. Thomas (1891:210-211) cataloged four mound sites there and cited Palmer three times. He also mentioned “several groups of mounds near Reelfoot Lake” in his final report
Robert Mainfort of the Tennessee Department of Conservation has examined the Smithsonian records and reported (1986 personal communication) that most of Palmer's collections were from one of two small mounds at site 40-OB-2, on Grassy Island in the lake. Thomas stated that this mound "was thoroughly explored, yielding a rich return" from seven of the fifteen burials encountered:

By one, a stone spade and two pots; by another, two pots; by another, a drinking vessel in the form of a kneeling female ... and two pots ... by the fourth, three pots; and by three others, one pot each. Another vessel was found imbedded in a mass of ashes 2½ feet thick, in which were bird, fish, and quadruped bones, more or less charred. Several stone implements were also found scattered through the mound (Thomas 1894:279).

Thomas (1894: Figure 175) illustrated the "image vessel"; it and the remainder of the artifacts he described (which I have not examined) would appear to represent a fairly late Mississippian component. This is also apparent from Smithsonian artifact catalog cards copied by Mainfort, which describe several "water bottles," a Mississippian vessel form, and "stone discs" which are undoubtedly Mississippian "chunkee" stones.

It is also of interest that Palmer recovered, or at least noted the presence of, the bird, fish, and animal bones. And one of the catalog cards describes "seed vessels of Nelumbium luteum" (i.e., *Nelumbo lutea* or American lotus, which may also have been a source of salt; cf. Morse and Morse 1983:221). Probably due to his "natural history" background, he was unusual among archaeological investigators of his day in that he had an interest in what would now be called "ecofacts."

MEMPHIS AND VICINITY. Palmer next stayed briefly in Memphis, where he picked up his monthly allowance of $200 in the mail from James C. Pilling, the Bureau's chief clerk. He wrote a letter of acknowledgement (Figure 1) on the stationery of the Worsham House, which was to become his regular hotel in that city. Several of his subsequent letters to Smithsonian officials were written on the same letterhead.

From there, he visited two mound sites near Ripley in Lauderdale County during mid-June, apparently without finding much (Thomas 1891:207). (The catalog cards copied by Mainfort include only lumps of burnt clay, apparently from a cooking pit and/or a structural wall.) He then left Tennessee to work in Missouri and Indiana during the

Figure 1. Letter, dated June 11, 1882, from Dr. Edward Palmer in Memphis to James C. Pilling of the Smithsonian Institution. It reads, "Your communication of June 10 to hand, designating two hundred dollars to be used for the month of June this relieves me of imbar-...
summer. In the fall, he returned to Arkansas for his most intensive investigations there (Jeter 1990: Chapter 7).

Palmer worked in various portions of northeast Arkansas in October 1882. On or about November 6, he traveled from the St. Francis Valley to Memphis. Although there are no notes relating the exact circumstances, it appears almost certain that he first met Lewis there. Perhaps Lewis was doing some freelance sketching on a steamboat or on the waterfront, as he is known to have done in the Pine Bluff vicinity.

**DE SOTO PARK (FORT PICKERING) MOUNDS.** In any event, it was apparently in Memphis that Lewis made his first drawing for Palmer, showing (as Palmer’s caption put it) “a Mound in South Memphi-s-Tenn—in Fort Pickering” (Figure 2). This site is now known as the De Soto Park Mounds (40-SY-5). It is about two miles north of the more famous Chuca-lissa Mounds site, but was probably a more important Mississippian center than Chuca-lissa in its day. There were seven mounds remaining here in the 1840s, but most were obliterated during the urban expansion of Memphis, according to David H. Dye (1989 personal communication).

The drawing is not signed, but is unmistakably by Lewis. It has been published before, but was not credited to him (or to anyone). Willey and Sabloff (1974, 1980), in both editions of *A History of American Archaeology*, included it as their Figure 26, and noted that it was “From an original pencil sketch in the manuscript of Cyrus Thomas’ mound surveys.” They apparently had not examined the numerous similar Lewis drawings, signed and unsigned, in the Arkansas file.

Like a number of the Lewis drawings in that file, this one bears an editorial “X”; in several such cases, Thomas or one of his assistants added comments such as “Too steep—lengthen slopes.” It is true that Palmer often gave grossly exaggerated estimates of mound heights in his notes, but comparisons of modern mound height measurements with the heights suggested by Lewis’ drawings (assuming that the men shown in the drawings were about five feet six inches tall, as Palmer was) indicate that Lewis did not exaggerate the heights very much. Instead, he used a technique that I call “horizontal compression,” probably to include more background scenery, such as the Mississippi River vista with a steamboat in the present drawing. This had the effect of steepening the mound slopes, but it also brought in adjacent details, some of them of interest in their own right. In several cases,
cabins and houses that have long since been demolished are shown clearly; revisits to these locations have produced historic artifacts and structural rubble. At the Menard Mounds site in the lower Arkansas Valley, Lewis' drawing included the houses of Napoleon Bonaparte Menard and another family member, providing rare evidence of French colonial influence on vernacular architecture in Arkansas (Morris S. Arnold, 1988 personal communication).

Thomas (1891) did state in his catalog that Palmer had reported a mound at Fort Pickering, but did not mention it further in his final report. Palmer does not appear to have obtained a collection from this site, and there are unfortunately no surviving notes on his visit in the NAA files (Kathleen Baxter, archivist, 1989 personal communication). Dye attempted to investigate the site with a Memphis State University field school during the mid-1980s, but was prevented from doing so by Native American demonstrators.

Palmer and Lewis immediately went a short distance upstream and across the Mississippi River from Memphis to the Bradley Mounds, where Lewis began his series of Arkansas mound illustrations (Jeter 1990:196ff). Palmer did not return to archaeological investigations in western Tennessee, though he did use Memphis as a place of refuge from floods at times.

Act Two: Mississippi

Preliminaries

ALCORN MOUND. Toward the end of his first field season, in early January 1882, Palmer made his first reconnaissance into Mississippi. He had recently made the first investigation of the Baytown site in east-central Arkansas and (after noting that the railroad men at the hotel in Clarendon had "let in the New Year with a noisy drunk") caught the narrow-gauge train to Helena. From there, he took the ferry across the Mississippi, then a railroad spur to Jonestown, where he visited the plantation of ex-Governor James Lusk Alcorn. This property includes the Alcorn Mound site (22-Co-508), which Palmer must have visited but apparently did not excavate. (He did revisit this vicinity, as will be seen.) There is a cemetery atop the mound, and Alcorn himself was buried there when he died in 1894 (John Connaway, 1985 personal communication).

Thomas (1891:123; 1894:253-258) did not mention this site in his sections on Coahoma County. It was also not mentioned in Calvin Brown's (1926) Archeology of Mississippi, nor in the Lower Mississippi Survey volumes (Phillips, Ford, and Griffin 1951; Phillips 1970). John Connaway of the Mississippi Department of Archives and History has examined the site and reports (1985 personal communication) that the mound has a Mississippian appearance, but that only one Baytown Plain sherd was noted in its immediate vicinity. In a field nearby, he found artifacts representing the Tchula, Marksville, and Baytown periods, along with a few possibly Late Archaic points, but no Mississippian diagnostics.

Plans, Frustrations, and Diversions

Palmer did not return to the Magnolia State for more than a year, but he did begin planning such a return during his second field season. After working with Lewis at the Menard and Toltec mound sites in the Arkansas Valley for much of December 1882, he wrote Thomas from Pine Bluff on the 29th, and remarked:

... when the Miss-River rise the Government wil have plenty boats idle if one could be got to go up the Sanfrancis River many mound pictures could be made provided you desire me to continue the man that makes the drawings ... If you desire this work done while I am at it will try and hold on and finish it I would make the following proposition should you desire the mounds along the Sanfrancis and the unvisited mounds on each side of the Mississ River as far as New Orleans visited, and take the man to make the drawings, I wil try and accomplish it ...

Palmer's plans were largely thwarted by the weather and by Thomas, though. He never returned to the St. Francis Valley, and never reached New Orleans during this project. Thomas ordered him to "discontinue" Lewis, return to Toltec, and conduct extensive excavations there, which he did during mid-January 1883. Then he made some initial explorations around Little Rock and nearby Benton during worsening weather. A Holmes engraving of the snow-covered Hughes Mound near Benton (Thomas 1894: Fig. 151) looks very much like Lewis' style, but no original sketch has been found. Palmer planned to go from Benton to Mississippi and Louisiana, but was again distracted, as noted in his letter of January 31 to Thomas:

To morrow start for the Mississippi River to visit the places which in your previous letters you requested me to examine
Just as I was about leaving for the Mississippi River, herd of a collection in possession of a gentleman at Arkadelphia [south-central Arkansas] there is mounds at or near that place so visit these before going to the Mississippi River.

To night there is every appearance of a great storm coming hope it will not interfere with my plans— it is now very wintery cold & unpleasant.

Yours very truly

Edward Palmer.

In the event, Palmer spent two miserable weeks at Arkadelphia, largely immobilized by terrible weather. He did make a few field ventures, and observed that “the character of the pottery changes.” In fact, he had unknowingly begun the scientific documentation of the Caddoan archeological regions (he briefly resumed work there the next year). At the end of this ordeal, he wrote Thomas on February 14, “Cannot do any more here owing to the excessive rain & floods. Start to morrow the Mississippi River to work down it to the places you have previously written to me about.”

He returned to Memphis, but was unable to return to the Bradley site, due to flooding and a heavy snowstorm. He wrote Thomas on February 16 from the Worsham House:

Rains & Snow have rendered it impossible to do any more work in this section now
And the rivers are all ready to over flow their banks and great fears are entertained by many that the country along the rivers for miles will be inundated.

Came to this place to take the Cars for New Orleans to do the work you wrote me about there. After which will return up the river to examine the other mound you wrote about the water must go down before it can be done ... the excessive local rains have made the soil like a mortar heap. After finishing at New Orleans, there is ten important places that I am desirous to examine as they occupy very prominent positions and likely to yield valuable results, Then I desire to return to Washington and give up this river work ... .

The “prominent positions” were apparently along the loess bluffs between Natchez and Vicksburg. Palmer provided more details in a February 18 letter to Thomas:

... In answer to your letter, will say that I agree with you in going to Louisiana and to the mounds near Natchez. To one in Adams Co.,

Mississippi which by an old history is said to be 175 feet high, also to three or four along the Mississippi River of unusual importance ...

Palmer seems to have had quite enough of cold weather, floods, and “river work” by this time. The remainder of this letter consisted of a scheme to extend the Mound Survey into Arizona! (There are indeed not only “mounds” of Puebloan structural rubble in northern Arizona and “trash mounds” throughout the state, but also purposefully constructed platform mounds at prehistoric Hohokam sites in the Salt and Gila valleys of southern Arizona; Haury 1976:80-102.) He probably yearned to return to the arid lands where he had done some of his most successful botanical, archaeological, and ethnological collecting. But the Bureau showed more restraint by restricting the “Mound Survey” to “works east of the Rocky Mountains” (Thomas 1891, 1894).

THE EMERALD (SELSERTOWN/WASHINGTOWN) MOUNDS. Palmer did visit a site in Adams County, Mississippi, apparently in late February, but it was probably not the one alluded to in his letter of February 18. In an undated letter to Thomas, probably written in early March, he summarized his plans and limited accomplishments:

On Board of Steam boat en route to the mounds at the junction of Black Washita and the Tensaw Rivers [i.e., Troyville; see below] will reach them to morrow. From there will go to another equally as important a group at Munroe on the Washita River from that place to Vicksburg there is a rail road but it is partly under water that part will have to be made by row boat. have visited the celebrated mound near Washington Miss. have a drawing and a ground plan of it. The slowness of getting about caused partly by the overflowed condition of the country and the delay by Steam boats I fear will prevent me from carrying out the plan as outlined in my previous letter before the latter part of March will be as expeditious as the lameness of my back and the conditional circumstances which surround me will admit of but do not wish to return to Washington (D.C.) if possible before finishing the important mounds above indicated. The report for February and March will bring me to Washington. The Mississippi River has a formidable look but it is in this section considered at its highest. If as successful as hope to be in the investigation of the next mounds you will hear of good results as they are in localities favourable for good finds &c.

Yours very truly

Edward Palmer

The “celebrated mound near Washington Miss.” is now known as the Emerald Mound site (22-Ad-504), in Adams County northeast of
Natchez. It had been one of the few Lower Mississippi Valley sites reported in the classic “Mound-Builder” study “Ancient Monuments of the Mississippi Valley” by Ephraim Squier and Edwin Davis (1848:118). In the older literature, it was referred to as “Seltzertown mounds ... 6 miles from Washington [Mississippi] and 11 miles northwest [sic] of Natchez” (Thomas 1891:123) or “the noted Selsetown group ... 7 miles a little west of north [sic] from Washington” (Thomas 1894:263–264).

The erroneous directions to the site given by Thomas may reflect some confusion on Palmer’s part between Emerald and the Anna Mounds site. Palmer’s February 18 letter referred to a site reputed to be “175 feet high.” That certainly sounds more like Anna (22-AD-500). It consists of four truncated pyramidal mounds arranged atop the loess bluff overlooking the Mississippi River; the largest mound is at the very edge of the bluff, apparently to accentuate its height (Brown 1926:40-41; Brain 1978a: Fig. 12.6). According to Brain (1978a:347), the distance from its summit to the valley floor is about 61 meters, i.e., 200 feet.

Emerald is about 12 miles southeast and inland from Anna (and to the northeast of Natchez and Washington), on a smaller bluff overlooking Fairchild Creek (Brown 1988: Fig. 3). It is also somewhat later than Anna, which flourished between about AD 1200 and the 1400s. Both are “type sites” for phases of Plaquemine (probably late prehistoric protohistoric Natchezan) culture, and Emerald may have been built as a sort of replica of Anna during a period of general movement away from the river, perhaps for safety, during the 1400s and 1500s (Brain 1978a:352). The largest mound at Emerald is about 28 feet high, and the platform or “plateau” at that end is about 44 feet high, for a total of only 72 feet (Brown 1926:37-38). According to a topographic contour map (Cotter 1951: Fig. 10), the bluff slope down to the floodplain of Fairchild Creek adds only another 40 feet or so, for an overall dropoff of only about 115 feet.

Unfortunately, Palmer’s detailed monthly reports for February and March have not been found, and it is uncertain whether or not he ever examined the Anna site. But in his March 18 letter to Thomas (see below), he did state that he had been to the “so called Seltzertown Mound” and collected some potsherds. In both of these letters, he stated that a drawing had been made, and the first letter said that a plan view map had been made as well. In his latter Arkansas work for Palmer, Lewis had made a number of plan view maps, including the first ones of the Menard and Toltec sites (Jeter 1990: Figs. 7.38 and 7.49). He may well have drawn and mapped the Emerald mounds too, but no original or derived drawings have been found.

Thomas (1894:263) did not refer directly to this 1883 investigation, but stated that “Dr. Palmer made a hasty visit to [Emerald] in 1884.” During the rest of 1883, Palmer had worked briefly in northeast Louisiana and in two other Mississippi localities (see below), then intermittently in eastern and central Tennessee, Arkansas and elsewhere. In early 1884, he was in Alabama, Georgia, and South Carolina before returning to Washington, D.C., probably for “debriefing” with Thomas and others at the Smithsonian before he left the Mound Survey (McVaugh 1956; Jeter 1990:319). He did make one last trip for this project, in an attempt to correct his deficiencies in making measurements. In early July 1884, he revisited the Toltec Mounds in Little Rock, again with little success; Holmes had to do the job right during his 1890 visit (Rogers 1982:74; Jeter 1990:351-355). En route to his new job of collecting marine specimens for the upcoming New Orleans World’s Fair and Cotton Exposition, he briefly revisited Emerald, then wrote Thomas from Florida on July 13, “I forward the measurements you desired taken of the Seltasert [Emerald] Mound and the two largest of the Knapp [Toltec] Group with some additional notes. hope they will be satisfactory . . . But they apparently were not. Thomas (1894:263) concluded, “subsequently, in 1887, Mr. [James] Middleton made a careful survey of [Emerald]. The description and figures here given are from Mr. Middleton’s report.”

In discussing the Emerald/Seltzertown site, Thomas (1894:264-265) commented, “Although the term ‘platform’ has been used here to indicate this somewhat remarkable elevation on which the mounds are placed, Mr. Middleton and Dr. Palmer express the opinion very confidently that it is chiefly a natural formation.” Similarly, Calvin Brown (1926:39) expressed the opinion that “the Seltzertown plateau is not to be regarded as entirely artificial,” as his tests showed that “the core of the plateau seems to be original undisturbed loess.” This was verified in later excavations by Cotter (1951:23-24, Fig. 11).

The Emerald site once may have included eleven mounds arranged atop the platform, according to Squier and Davis (1848:118). But by the 1880s there were only four surmounting mounds, including the two larger ones at either end of the platform, left visible (Thomas 1894:264-266, Pl. XIV). Thomas stated that Middleton found “no satisfactory traces” of the seven missing small mounds, but noted that:

... Dr. Palmer, who visited them three years before, thought he saw indications of other structures at points around the margin, but was
inclined to the opinion that these were house sites, as fragments of pottery and pieces of burnt clay, often with fluted impressions made by split reeds, were found in abundance at such points. But neither found any traces of a central mound ... [which] would indicate that this central space was left unoccupied [i.e., a “plaza”] (Thomas 1894:265-266).

Processes of attrition had reduced the surmounting mounds to only the two larger ones by 1917 (Brown 1926:37, Fig. 7). They remain at the site today. Cotter’s stratigraphic trenches and more recent but unreported limited tests by the Lower Mississippi Survey encountered portions of rectangular wall-trench and individual-post structures, which have been summarized in a comparative study of Plaquemine houses by Ian Brown (1985). Palmer’s observations of burnt daub suggest that several other structural floor plans may remain to be documented by excavations near the edges of the primary “platform.”

Act Three: Louisiana

THE TROYVILLE MOUNDS. Palmer did reach the Troyville site, apparently in early to mid-March. Again, he summarized his work and plans in a letter to his supervisor:

Vicksburg March 18
Prof Cyrus Thomas
Dear Sir

Since writing my previous letter, I have nearly gone the rounds to carry out the program outlined in a previous letter to you came to Vicksburg in order to reach an important place by rail but water is over the country for 40 miles so had to abandon the trip start to morrow for Greenville Miss—then to Friers Point to visit a mound a few miles from that place if the water will admit it there have recently been three feet of water over that section—have one place to finish above Memphis this will take me to the end of March

But there is two places near Arkadelphia which if visited now will take me into April before finishing I fear they are under water now so will not go there now.

I send to day a box by Express
215-Fragments of pottery &c from the field around the so called Saltzertown Mound
216 These two bundles under this number had better be kept tied up they are burnt cane found a foot thick 30 foot from base of the large mound at Troyville at the junction of Tensas-Witchita and little river

and extending some distance into the mound—Have drawing showing this 217 Mixed pieces of pottery from Troyville from surface of nearly destroyed mounds.

There is one package marked in my name. please ask Dr. Foreman to take care of it. Have drawings of all mounds visited which will bring with me Yours truly

Edward Palmer

The fabulous Troyville site (16-CT-7) is located at the town now known as Jonesville, in Catahoula Parish, northeast Louisiana. This is a strategic location, where the Tensas, Ouachita, and Little rivers unite to form the Black River, as shown in a plan view map by Holmes (Thomas 1894: Fig. 155; reproduced here as Figure 3), which may well have been derived from a Lewis original. The major occupation dates to the AD 400-700 “Baytown period” (Phillips 1970:901, 908-910), which in Louisiana is called the “Troyville-Baytown period” (Belmont 1982; Gibson 1982), and is attributed to the Troyville culture (Belmont 1982:65-80)

The Troyville site once featured a “Great Mound” which was described by earlier nineteenth-century explorers as a “stupendous turret” capped by a steep “cone” and totaling 75 or 80 feet in height (Thomas 1894:251; Walker 1936:6). It was severely damaged during the Civil War, “by having the summit cone virtually cut down to provide space for a rifle pit” (1936:9).

During 1931 and 1932, as the final destruction of the Great Mound was taking place, Winslow Walker of the Smithsonian Institution conducted salvage excavations. He reported on this work and his historical and comparative researches soon afterward (Walker 1936). He stated (1936:12-13) that George Beyer of Tulane University had worked there in 1896 and confirmed Palmer’s descriptions, including laminated masses of cane and wood “in some places 12 to 14 inches in thickness.” Walker also found a great deal of cane, including some thick sections (1936: Pl. 9c). He noted that it was greenish-yellow when removed, but quickly turned black upon exposure to the air, and suggested (1936:13-14) that this “probably accounts for its charred appearance according to Palmer and Beyer.”

The Troyville site at one time included at least five other mounds. One of them was used as a cemetery in the nineteenth century, and was estimated (apparently by Palmer) at 200 by 90 feet by eight feet high (Thomas 1894:252). Another one (Mound 6) was illustrated by a Holmes engraving in the Mound Survey’s final report (Thomas 1894:...
Fig. 156). That illustration (Figure 4) is also in a style reminiscent of Lewis' work, and may have been derived from one of his sketches, but if so, the original has been lost. The Holmes version does not, however, show the flooded conditions that apparently prevailed in March 1883.

The New York weekly tabloid Frank Leslie's Illustrated Newspaper, in its April 21, 1883 issue, published an engraving of Troyville "during the recent inundations" (Figure 5), based on a sketch by Lewis. Until I rediscovered it, this illustration had apparently never been seen by modern archaeologists (Robert W. Neuman, 1987 personal communication). It shows the Great Mound looming behind the flooded town, with the cemetery mound in the left foreground. Together with Palmer's comments on Troyville, the Holmes illustrations published by Thomas, and the discovery that Palmer and Lewis definitely worked together again in Mississippi (as shown in the "Leland Mounds" section, below), it constitutes circumstantial evidence that they also could have been reunited at Troyville (see the end of the "Leland" section for a more complex but perhaps more likely scenario).

PARGOU. The "group at Munroe on the Washita River" mentioned in Palmer's undated letter was almost certainly the Pargoud (sometimes rendered as Paragoud or Pargaud) mound site (16-OU-1), on the Ouachita River at the northern margin of Monroe. There are no known Palmer notes on this site, but it is likely that he did visit it briefly. Thomas (1894:250) did indicate that a Mound Survey worker had visited the site and described two mounds, one of which had been partly cut away for road fill, exposing five strata. But "permission to explore it was refused." Since Thomas' account mentioned "pieces of pottery" observed at the base of the profile, there might be a small collection at the Smithsonian.

Clarence B. Moore (1909:27) also briefly visited this site (which he called Pargaud Landing), but noted only a single eroded mound and did not dig. Subsequent investigations (summarized by Jones 1983 and Jeter et al. 1989:212-213, Table 20) have discovered burials with ceramics and shown that its principal occupation was by peoples with a late prehistoric variant of Plaquemine culture, dating around the AD 1200s.

Act Four: Return to Mississippi

THE LELAND (AVONDALE/STONEVILLE) MOUNDS. In the March 18 letter, Palmer said he was going to leave for Greenville, Mississippi on
the next day. He apparently did so, and went straight to another major mound site, a short distance east of town. He called this the “Avondale Mounds—near Stoneville, Miss.” as indicated by the caption in his unmistakable handwriting, on a drawing that is unsigned but unmistakably in Lewis’ style (Figure 6).

This drawing shows seven numbered mounds, with Mound 1, the highest, surmounted by tombstones. Thomas (1894:259) stated that it was “used as a graveyard by the whites.” He also stated that Mound 2 was “covered with graves of colored people”; perhaps reflecting socioeconomic conditions, Lewis’ drawing shows no tombstones on this mound. Thomas followed Palmer in calling the site the “Avondale Mounds,” but it is clearly the site now known as Leland (22-Ws-501), after the name of the adjoining town (Brown 1926:81-82; Phillips 1970:455-457).

According to Palmer’s caption, the Lewis drawing’s view is “looking due North—Showing Deer creek to the left of the Mounds…” However, Palmer (or Lewis) seems to have had a bad compass; most of his Arkansas directional notations are well off the mark, and this view would appear to be slightly to the west of due north (cf. Phillips 1970:Fig. 193, which shows Deer Creek to the west and northwest of the site). The drawing also shows several houses and outbuildings in the background, apparently along the Deer Creek natural levee.

An editor, probably Thomas, wrote “redraw” below the caption, and “reduce height” above the two largest mounds, adding outlines indicating the suggested reductions. Similar “reduction” lines had been added to one of Lewis’ drawings of the Toltec Mounds in Arkansas (Rolinson 1982: Fig. 42; Jeter 1990: Fig. 7.45), and some time later in the 1880s Holmes had rough-sketched an “ideal view” following those instructions (Rolinson 1982: Fig. 45; Jeter 1990: Fig. 7.46). But Holmes himself visited the Toltec site in 1890 (Rolinson 1982:74), and was apparently convinced that Lewis’ version was satisfactory. His final, published version (Thomas 1894: Pl. IX; Rolinson 1982: Fig. 41; Jeter 1990: Fig. 7.47) essentially duplicated Lewis’ original.

In the case of Avondale/Leland, Holmes prepared a publishable engraving (Figure 7) that was basically a tracing of Lewis’ original. (The staff and shovel held by the figures in Lewis’ drawing, however, were transmuted into a transit on a tripod and a stadia rod.) It is marked “rejected copy” in the margin and “Altogether too steep” on the engraving itself, though, with lines drawn over it suggesting drastic height reductions for the two large mounds. Holmes prepared yet another version (Figure 8), with the mounds reduced about as drawn...
over the Lewis original, and it was published (Thomas 1894: Fig. 161; Brown 1926: Fig. 15).

Thomas (1894:259), probably following Palmer’s notes (which have not been found), stated that Mound 1 was “30 feet high, flat on top, and oval in form, nearly 200 feet long and 175 broad.” Brown (1926:81-82) simply paraphrased Thomas’ descriptions. If this was indeed Palmer’s estimate of the mound’s height, he appears to have been on the conservative side for a change; Phillips, Ford, and Griffin (1951:327) listed its height at 31 feet. Thomas added that Mound 2 was about 15 feet high; it was later measured at 14 feet (1951:327).

A scrutiny of these drawings suggests that once again, Lewis’ “horizontal compression” technique was the cause of Thomas’ disbelief and rejection. Assuming once again that the men shown in Lewis’ drawing were about five feet six inches tall, Mound 1 appears to be about 25 feet high, or perhaps 30 to 35 feet if a distance perspective factor is applied. However, using the same “measuring” device, Mound 1 appears to be only 60 to 65 feet across at the base. Little wonder that the slopes appeared unnaturally steep! (In Holmes’ final, published version, Mound 1 appears to be only about 15 to 20 feet high, and still about 60 feet across at the base; the “horizontal compression” was preserved.)

A comparison of Lewis’ drawing and Phillips’ (1970: Fig. 193) Leland site map, made in 1954, suggests that some significant attribution occurred in the intervening 71 years. Phillips (1970:455) remarked that the two large mounds were “still in excellent state of preservation” in 1954 (probably due to their cemetery functions), but that there were only “vestiges of at least three others.” Phillips may not have known of the existence of Lewis’ sketch, which shows five smaller mounds. One of them, Lewis’ Mound 7, is seen in the distance through the gap between the two large mounds, but does not show up at all on the Phillips map.

Lewis’ original also included a “window” in the upper left corner, giving a “Section View of Mound No. 4” (in Palmer’s words), showing four strata in the wall profile of a trench through the mound’s center. This drawing received another editorial “X” and was not included in Holmes’ redrawn versions. Thomas (1894:260), however, again undoubtedly following Palmer’s lost notes, stated that the trench had encountered “first, a layer of sandy loam 18 inches thick, then 2 feet of burnt clay, next a layer of charcoal and ashes 18 inches thick, and thence to the base hard clay,” so we know what the strata depicted by Lewis represent.

Although the real “stratigraphic revolution” in American archaeology did not occur until after 1910, Palmer and his supervisors were aware of such concepts through their contacts with geologists and European archeologists (Willey and Sabloff 1974:88ff; 1980:84ff; Jeter 1990:83-84, 367). Palmer often made brief notes about strata, sometimes accompanied by his own crude sketches, and in at least one other case (at Menard) by a Lewis drawing, but all of these were schematic rather than detailed. Also, Palmer often correctly interpreted strata as representing collapsed houses or even superimposed house ruins. (But he tried to apply an inappropriate Puebloan analogy, based on his Southwestern observations, in verbally “reconstructing” what the houses had looked like [Palmer 1886; Jeter 1990:124ff].)

Thomas (1894:259) noted that “numerous fragments of pottery and lumps of burnt clay, containing impressions of cane and grass, were found near the surface of the small mounds.” This clearly indicates that they were the former locations of wattle-and-daub houses. Thomas (1894:205-206, Fig. 118) understood and illustrated the basic “lathing” techniques used in the walls of such structures, but they were not recognized in the classic study of Native American house types by the famous contemporary anthropologist Lewis Henry Morgan (1881).

COLLECTIONS AND CONDFUSIONS. Palmer had asked that his shipments of artifacts not be opened until he returned to the Smithsonian, but Thomas ignored the request, which resulted in several problems (Safford 1926:480-481; Ford 1961:161, Figs. 11d, 11f, 12a-b; Rolinson 1982:83-86; Jeter 1990:68-69, 135-136, 375). I have not looked into Palmer’s collections from this site, but have discovered that at least some of them might have been mixed with an Arkansas collection.

When I started this research in 1980, I found that Palmer’s “Arkansas” collections at the Smithsonian included one lot of late prehistoric or protohistoric Mississippian specimens (shell-tempered sherds, etc.) labeled “Stoneville, Lincoln Co., Ark.” This baffled me for some time, because Lincoln County was in my southeast Arkansas research territory and I could find no “Stoneville” in that county. Eventually, I discovered “Stoneville, Mississippi” in McVaugh’s (1956:325) extensive geographical index of Palmer’s travels, contacted John Connaway of the Mississippi Department of Archives and History (1985 personal communication), and found out about the Leland site connection. (It was not until 1989 that I learned about the Lewis “Avondale . . . Stoneville” drawing at the NAA.)
There remains the question of the provenience(s) of the “Stoneville, Lincoln County” artifacts. They might be from Leland, but my re-
searches (Jeter 1989:174-175; 1990:272) indicate that they might also 
be from Sarassa Lake, a protohistoric Mississippian site on the Arkan-
sas River in Lincoln County. Palmer visited that site in early 1883, and 
the landowner promised to send some artifacts to the Smithsonian 
later. The only way to solve this problem would be to make some close 
comparisons between attributes (ceramic pastes, lithic raw materials, etc.) of the artifacts in the problematical collection and those of 
artifacts that are definitely from the Leland and Sarassa Lake sites. 
The worst-case scenario would involve broad overlaps between Leland 
and Sarassa Lake artifacts, and/or evidence of hopeless mixing in the 
Smithsonian collection. But otherwise, it might yet be possible to set 
the record straight.

Extensive later collections from the Leland site produced a “chemi-
cally pure assemblage” of 8,503 terminal prehistoric to protohistoric Mississippian sherds and only one possible Baytown Plain sherd 
(Phillips 1970:456). The site was assigned by Phillips to the Deer Creek 
phase, but that phase has been “sunk” and merged with the Lake 
George phase (ca. AD 1350-1500s) by Williams and Brain (1983:339f, 
378f), who called it “the high-water mark of the Mississippian culture 
in the Yazoo Basin.”

FLOOD DRAWINGS. Speaking of high water, Palmer and Lewis 
probably had only a few days available to work at Avondale/Stoneville/
Leland, which Thomas (1894:259) stated was on “a rich, level bottom, 
subject to overflows.” Frank Leslie’s Illustrated Newspaper printed a 
Lewis-derived engraving in its April 14, 1883 issue, showing a flood 
scene at Greenville. The accompanying article stated that “on the 23rd 
ult. i.e., March 23], the banks [levees] of the river were broken”; the 
resulting “torrent” may well have inundated the Leland site, only nine 
miles to the east.

The same issue of Leslie’s also included a Lewis-derived engraving 
of the flood scene at Water Proof (!), Louisiana, where “the levee gave 
way and the flood swept relentlessly into the dwellings, the water 
attaining a depth of eight feet.” It may be that Lewis had left Palmer 
and followed the flood situations downvalley, and that it was during 
this late March episode that he sketched the Troyville flood scene, 
which was published in the next (April 21) issue of Leslie’s. This would 
not preclude his having visited Troyville with Palmer in early to 
mid-March, at which time he could have made the site map and Mound 
6 drawing under non-flooded conditions.

THE FRIARS POINT LOCALITY AND THE PARCHMAN PLACE (“ROSELLLE”) 
site. Palmer’s March 18 letter also mentioned his plans to visit a site 
near “Frier’s Point” and another above Memphis. He does not seem to 
have reached the latter site, but did get to the Friars (or Friar’s) Point 
locality in northwestern Coahoma County. Perhaps he had been told 
of a site or sites near here by Governor Alcorn during his visit to 
Jonestown.

In his preliminary catalog, Thomas (1891:123) reported that 
Palmer had visited the Roselle Mounds, six miles east of Friars Point. 
Perhaps on the basis of Palmer correspondence that I have not seen, 
McVaug; (1956:211, 289, 340) also stated that Palmer had visited the 
“Rosell” mound site in this vicinity (this looks like a typical Palmer 
misspelling). In his final report, however, Thomas (1894:253-258) did 
not mention the Roselle Mounds. Instead, he concentrated on the 
Carson (now called Carson-Montgomery) Mounds, six miles south of 
Friars Point, where Col. Philetus W. Norris (who died in 1885 as a 
result of malaria contracted during Mound Survey work in northeast 
Arkansas [Pettulla and Price 1984]) and Holmes had worked. He also 
reported on work at the Dickerson Mounds, four miles east of Friars 
Point, and at the “Clarksdale works” in the central part of the county.

The Roselle site is now known as Parchman Place (22-Co-511; 
Connaway 1984: Fig. 20). Starr (1984:185) stated that it was “first 
reported” by Brown (1926:107), who simply mentioned in passing “a 
mound . . . on the Roselle place,” but as noted above, Thomas’ catalog 
ote note should take precedence unless and until Palmer’s notes are found.

Parchman Place was described by Phillips, Ford, and Griffin 
(1951:51) as a “large village site with large and small platform mounds 
and small mounds in plaza arrangement.” It was made the type site for 
the “ill-defined” Parchman phase by Phillips (1970:939-940), and 
has more recently been summarized by Starr (1984:185-188), who 
noted the presence of some very late Mississippian ceramics. Brain 
(1988:272-277) has suggested that the Parchman phase represents the 
province of Quizquiz encountered by the Hernando de Soto entrada in 
1541, that the occupants were the protohistoric Tunica, and that the 
Carson-Montgomery site is now “the best remaining type site” for the 
phase. Brain et al. (1974; cf. also Brain 1978b, 1985a, 1985b, 1988) also 
suggested that Friars Point was the location of the Spaniards’ crossing 
of the Mississippi from the province of Quizquiz.
Encores, Near Misses, and Loose Ends

Except for the unsuccessful attempt to remeasure the Emerald Mounds in 1884, Palmer does not appear to have done any more field archaeology in the Lower Mississippi Valley portions of Tennessee, Mississippi, or Louisiana, nor to have been associated with Lewis again. There are, however, a few items of evidence in his notes and letters that suggest some interesting brief visits and missed opportunities. It should be at least mentioned in passing that other Mound Survey collectors worked extensively in Mississippi (Thomas 1894:253-278), and their collections and records might also be worthy of study.

Toward the end of his last really active field season in Arkansas, Palmer wrote Thomas on November 1, 1883 from Little Rock, remarking,

... finishing this will go down the River to Vicksburg to take train for Delhi La. Rains & overflow prevented me from visiting the mounds near this place last Winter—Can return to Vicksburg and take train homeward by way of Jackson Miss & Taladega Alabama at the former place is a State collection at the latter place mounds & grave yard said to be Creek Indians that I desire to examine.

Delhi is near the famous Poverty Point site in northeast Louisiana, and there are other mound sites closer to Delhi (Jon Gibson and John Belmont, 1989 personal communications; cf. the Phillips 1970 master site map). Palmer changed his plans in several ways after writing this letter (Jeter 1990:343ff), and there is no evidence that he ever reached this part of Louisiana. Poverty Point got only a passing mention (under another name) in Thomas’ catalog (1891:104), and none at all in his final report, which shortchanged Louisiana with only three pages of text (1894:250-252; Jeter 1986:149).

Palmer must have been in Jackson, Mississippi only briefly, if at all; it is not mentioned in McVaugh’s (1956:132-352) long list of places he visited. The state collections have been curated by the Mississippi Department of Archives and History only since 1902 (Baca 1989:29); before that date only private or university collections were maintained in the state.

Thomas (1891:15; 1894:290) reported a “former Creek settlement” at Cragsdale, Alabama, about four miles southeast of Talladega in the east-central part of that state. This is in the former Upper Creek territory, and early maps show “Eufala Old Town,” a Creek town site, in the Cragdale vicinity (Vernon J. Knight, 1988 personal communication).

This passing mention of Alabama should serve as a notice that there may well be some significant long-unturned stones (and sherds) in the Smithsonian’s nineteenth-century collections from that state. Palmer and several other Mound Survey assistants worked fairly extensively in Alabama, from the Tennessee Valley shell-heaps to Fort Toulouse and other Alabama River sites, to Moundville (mentioned only in the preliminary catalog, under another name, “Cartilage” (Thomas 1891)) and the Mobile vicinity (Thomas 1894:283-292; McVaugh 1956:135-136; Smith 1985: Table 2; 1990: Table 1.2). McVaugh (1956:135) reported that he had been unable to locate Palmer’s 47-page “Alabama ... 1883-1884” manuscript, but the NAA files might contain much useful information. I am unable to follow up this intriguing lead, due to my concentration on Arkansas and Mississippi Valley research, but it might provide a good project for an Alabama researcher or graduate student.

Alabama also appears to have provided a final Palmer collection with potential relevance to Mississippi archaeology and/or ethnohistory. McVaugh (1956:255) reported that around March 15-20, 1884, Palmer visited Mobile and collected “a few ethnological specimens” from the Choctaw Indians there. Since this kind of collecting was really Palmer’s forte (Jeter 1990:45-71, 366-367), these specimens and his notes might be worth looking into.

Conclusions and Implications

Palmer’s work for the Mound Survey has been characterized as “for the most part that of a preliminary or exploratory investigator” (McVaugh 1956:85). That is generally correct, but he also made some remarkable finds and recorded much information that is available from no other source. This is especially so in the case of destroyed or damaged sites. Lewis’ drawings are also particularly useful in such cases, if due allowance is made for factors such as the faulty compass and his “horizontal compression” technique.

Perhaps the major lesson derived from projects such as this is that the Mound Survey collections are still available and potentially useful for research, being curated in perpetuity by the Smithsonian along with the relevant records. Even cryptic notes, letters, and manuscript reports like Palmer’s can be deciphered and related to the artifacts and sites (Jeter 1989, 1990).
“Relic” collectors sometimes complain that professional archaeologists “take the artifacts away and put them up on back shelves where nobody can ever see them again.” Clearly this accusation is completely falsified by the present research, which could not have been carried out had the collections of the Smithsonian not been kept in safety. The Smithsonian has not only often displayed Mound Survey artifacts, but has loaned them to other museums in the regions of origin. It has also recently agreed to take over the collections of the Heye Foundation’s Museum of the American Indian in New York, and is planning to build a new museum on the “Mall” in Washington for displaying these materials in ways that will honor the Native Americans and inform the public. Such practices and developments, and the availability of artifacts and associated records for ongoing research projects, constitute the true means of “preserving the past for the future.”

Acknowledgments

My research on Palmer and Lewis formally started in January 1980, at a Smithsonian Institution-Lower Mississippi Survey conference commemorating the centennial of the beginning of the Mound Survey, organized by Bruce D. Smith of the Smithsonian and Stephen Williams of the LMS, and held at the Smithsonian. Dr. James B. Griffin, “dean” of eastern U.S. archaeologists and a conference participant, provided good advice and encouragement. The Smithsonian’s National Anthropological Archives staff, especially Jim Glenn, Paula Fleming, and Kathleen Baxter, have been very supportive in person and through the mails, as has Felicia Pickering of the Department of Anthropology’s collections staff. Thanks are also due to all of the archaeologists cited for personal communications. Various aspects of this research have been supported by the Arkansas Endowment for the Humanities (now the Arkansas Humanities Council). Finally, I am grateful for the support of Bob McGimsey, Hester A. Davis, and the staff of the Arkansas Archeological Survey, whose motto is quoted at the end of this article. The usual disclaimer applies: I am responsible for any errors of fact or interpretation.

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An Engraved Expanded-Center Bar Gorget from Tishomingo County, Mississippi

James R. Atkinson

About 1974, a unique stone artifact was found on the surface of a Late Archaic through Middle Woodland site in Tishomingo County, Mississippi. This engraved expanded-center bar gorget was probably made during the Early Woodland period.

About 1974, John Massengill, then a young resident of Iuka, Mississippi, was pursuing his favorite hobby of looking for arrowheads when he discovered an artifact that would have surprised a professional archaeologist as much as it did him. On a recently plowed site (22-Ts-1552) in the Tennessee River drainage in Tishomingo County, Mr. Massengill found both pieces of a broken expanded-center bar gorget. The plow had recently dislodged the artifact from what was apparently a previously undisturbed burial context, for an articulated row of human teeth was present in the earth adhering to the largest piece. The smaller piece was found nearby. No other human remains were observed, and the teeth crumbled into fragments when Mr. Massengill later ran water over the adhered earth. Recognizing the rarity of the find, Mr. Massengill declined offers to buy it and would like to see it become part of a museum display.

In February, 1989, Mr. Massengill showed the gorget to me and described the circumstances of the find. I encouraged him to return to the site and obtain a comprehensive surface collection. The need for a representative collection of pottery sherds was emphasized. Soon thereafter he returned to the site for the first time in many years. Unfortunately, all but the western fringe of the site was no longer in cultivation, but a timber road had been bulldozed recently along the sloping, wooded terrace edge, thereby exposing a dark cultural layer about 40 cm in thickness. From this zone he recovered most of the artifacts discussed below. Although the site is quite large, most of the artifacts were recovered near the place where the gorget was found, and therefore may represent the cultural period associated with the gorget. Mr. Massengill presented the collection to me for study.

The bar gorget, although somewhat rare in Mississippi, is not uncommon in the Mid-South area (see Fundaburk and Foreman 1957: Pl. 84). Most, however, are devoid of surface engravings. The Massengill gorget (Figures 1 and 2) is 16.7 cm long, 7.6 cm wide, and averages about 5 mm thick along the central axis. It possesses four circular perforations in line along the center. Closely spaced notches are present around the edge except on the blunt end. The other end is worn down or intentionally ground on the obverse side only. The stone is blue-gray slate of undetermined natural provenience. Slate is a metamorphic rock, occurring in outcrops in east-central Alabama, the Blue Ridge Mountains, and central Arkansas. Glacially transported slate is also found in the Midwest.

The engravings, all on one side, consist of five headless human stick figures with square and rectangular crosshatched torsos, a cross-hatched band with short projecting lines running the length of the gorget, a curved line with four parallel, long straight lines extending from the inside of the curved line, and a figure of four concentric diamonds with a circle in the center diamond, two bird-like legs and feet, and three narrow, crosshatched bands, one extending from the top of the concentric diamonds and the other two from the bottom (Figure 2).

Because of the uniqueness of most of the representations, I have had no success in finding comparable ones in the literature from which a cultural correlation might be drawn. Although an expanded-center
gorget from north Alabama with crosshatching over almost the entire surface is illustrated in Fundaburk and Foreman (1957: Pl. 84), its cultural context is unknown. The human figures on the Massengill gorget are evident, of course, but why no heads? Jon Muller (personal communication) and I speculate that these may represent deceased persons whose heads were removed as trophies. Perhaps the curved line with attached straight lines represents rain or a storm. Perhaps the long crosshatched, irregular-width band represents an earthwork or palisade or a mountain range. Jon Muller (personal communication) suggests that this band may also represent outspread wings attached to the central concentric diamond figure, which might represent a bird. The bird-like legs and feet extending from the nested diamonds (the body?) add support for this speculation. The two narrow cross-hatched bands below the legs could be the borders of a spreading tail; perhaps the short band at the top of the nested diamonds represents a neck. If the diamonds represent a body, perhaps the central circle represents its heart.

Although the nature of the engravings sheds no light on cultural context, the gorget itself can be generally dated. A review of some of the major archaeological publications for the Tennessee and Ohio Rivers area reveals that bar gorgets date from the Middle Archaic through the Middle Woodland. A bar gorget with a slightly expanded center was found in Middle Archaic context at the Eva site in Tennessee (Lewis and Lewis 1961), but specimens with pronounced shoulders like the Massengill gorget seem to be absent during the Archaic period, appearing first during the Early Woodland period, and becoming a common trait of the Adena culture centered in the upper Ohio River valley (see Griffin 1952: Fig. 31 for an Adena expanded-center gorget similar in shape to the Massengill specimen). Although bar gorgets are present among the Hopewellian culture lithic assemblages, expanded-center types seem to be absent. Nor do they seem to be associated with Hopewellian influenced cultures of the Mid-South, such as the Miller I and II phases of northeast Mississippi and the Colbert and Copena phases of the middle Tennessee River area. One might have been expected at the extensively excavated Miller I Bynum Mounds site in northeast Mississippi (Cotter and Corbett 1951) if they were present in that area as late as 100 B.C. The Massengill gorget, however, could have been imported from another culture area if they were still being made elsewhere during Middle Woodland times, but I have found no evidence that they were.

*Figure 2. Drawing of the Massengill Gorget (actual size).*
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<td>Wheeler Plain</td>
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<td>Sand Tempered</td>
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<td>Alexander Incised, var. Pleasant Valley</td>
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<tr>
<td>Alexander Incised, var. Bodka Creek</td>
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<td>Alexander Incised, var. Unspecified</td>
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<td>Saltillo Fabric Marked, var. Tombigbee</td>
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<td>Baldwin Plain, var. Lubhub and/or Blubber</td>
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<tr>
<td>Limestone Tempered</td>
<td>6</td>
</tr>
<tr>
<td>Long Branch Fabric Marked, var. unspec.</td>
<td></td>
</tr>
<tr>
<td>Mulberry Creek Plain, var. unspec.</td>
<td></td>
</tr>
<tr>
<td>Grog Tempered</td>
<td>7</td>
</tr>
<tr>
<td>Brushed body sherd (unidentified)</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Ceramics from site 22-Ts-1552.

Assuming, then, that the Massengill gorget was probably made during the Early Woodland period (also referred to as the Gulf Formational period [Jenkins 1982]), or possibly the Middle Woodland period, we now turn to a discussion of the site on which it was found to see if there is a cultural correlation. The ceramic sherds available from the site indeed date to the Early and Middle Woodland periods (Table 1; Figure 3). The single fiber tempered Wheeler Plain sherd indicates occupation during the Broken Pumpkin Creek phase (ca. 1000 B.C. or earlier to ca. 500 B.C.). The Alexander Incised and Alexander Pinched sherds indicate occupation during the Harding phase (Dye 1973, 1980; the Henson Springs phase in the Tombigbee River Valley, ca. 500 B.C. or earlier to ca. 100 B.C.). The fabric impressed sherds tempered with sand or limestone indicate occupation during the Middle Woodland Colbert phase (see Walthall 1980) and the contemporary Miller I phase (ca. 300 B.C. to ca. A.D. 200). There is no ceramic evidence presently available for occupation of the site after Middle Woodland (see Jenkins 1982 for detailed discussions of the phases other than Harding and Colbert).

All of the projectile points from the site collection fit nicely with the Early and Middle Woodland ceramics. As pointed out by Amick et al. (1985:77) part of the “problem in defining Terminal Late Archaic/Early Woodland type clusters stems from increased regionalization of stylistic diversity.” This is indeed the case with the seven points from

22-Ts-1552. All but one of the points definitely fall into the clusters established for Late Archaic/Early Woodland types, but deciding which cluster to place some of them into was somewhat arbitrary. In any case, only one point is certainly not Late Archaic/Early Woodland, a Middle Woodland Bakers Creek point. The remainder have been classified as either Little Bear Creek or Flint Creek points of the Late Archaic/Early Woodland. Five of these points are made from Tuscaloosa gravel and two are made from Fort Payne chert. Two of the points, both classified as Little Bear Creek types, were found on the cultivated fringe of the site where no pottery sherds were present. A third, classified as a Flint Creek type, was also found here.

Thus the absence of pottery may indicate that these three points have Late Archaic affiliations and represent a separate component.

Because of the apparent Late Archaic occupation, a pre-Woodland association for the gorget cannot be discounted, but it is not likely. The apparent absence of the expanded-center bar gorget during the Middle Woodland Miller I and II, Colbert, and Copena phases of the area strongly indicates that the Massengill gorget is associated with either
the Broken Pumpkin Creek phase or the Harding phase of the Early Woodland period, most likely the latter.

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Protohistoric Settlement Patterns in Northeast Mississippi and the Cedar Glade Hypothesis

Evan Peacock and W. Frank Miller

The Protohistoric settlement pattern in northeast Mississippi is one of scattered households on upland Black Prairie soils. One hypothesis that has been offered to explain this pattern is that these upland soils supported cedar glades, thought to be good deer habitat; thus, the Protohistoric settlement pattern reflects an increased emphasis on deer hunting as compared to the preceding Mississippian groups located in the major river bottoms. An examination of several wildlife studies shows that cedar glades are not necessarily good deer habitat, while an examination of the original land survey notes shows that cedar glades in the Black Prairie are a recent phenomenon.

Johnson, in a number of reports and papers, has proposed a general settlement/subsistence model for the Protohistoric period in northeast Mississippi (Johnson and Curry 1984; Johnson et al. 1984; Johnson and Sparks 1986; Johnson et al. 1989; Johnson 1990; Johnson and Lehmann 1990). This model holds that there was an abrupt settlement pattern shift in Late Prehistoric times. Nucleated Mississippian town sites in the bottoms of the major rivers and large tributaries were abandoned in favor of dispersed settlements of perhaps a few households on the thin soils overlying chalk ridges in the Black Prairie. This latter settlement pattern is thought to have been in place from some time after Middle Mississippian up to and including the historic period Chickasaw (Johnson and Sparks 1986:75). The data for this model are derived almost entirely from surface collections from several different projects.

The hypothesis offered to explain the Protohistoric settlement pattern is that there was a change in the subsistence base. Specifically, it is hypothesized that the post-Mississippian occupants of the Black Prairie made greater use of white-tailed deer. "There is the implication that Protohistoric settlement represents a reemphasis on deer hunting as a major subsistence source" (Johnson and Sparks 1986:68). While nearness to good agricultural soils and reliable water sources is noted as an important factor in Protohistoric settlement (Johnson and
Sparks 1986:72; Johnson and Lehmann 1990), increased exploitation of
deer seems to be the primary component of the model (Johnson and
Curry 1984:14; Johnson et al. 1984:9; Johnson and Sparks 1986:68,
72, 75, 76; Johnson et al. 1989:51; Johnson 1990:3; Johnson and

The basis for this hypothesis is a comparison drawn between the
results of a wildlife study done in the Arkansas Ozarks and a
reconstruction of the vegetative cover of the thin upland prairie soils
in northeast Mississippi (Johnson and Sparks 1986:67). Wildlife
biologists found that cedar glades, one of the four forest types studied
in the Ozarks, were important sources of food for white-tailed deer
(Segelquist and Green 1968). The Black Prairie upland vegetation has
been reconstructed as cedar glades (Kuchler 1964; Lowe 1911); thus,
the inference is made that the Black Prairie uplands were good deer
habitat (Johnson and Sparks 1986:68).

While there is no doubt that a settlement pattern shift did take
place, there are many aspects of this model that need to be examined,
including the timing and nature of the shift. In this paper, the deer
hunting hypothesis is considered. Three main questions are posed: 1)
Is the analogy drawn with the Arkansas study a valid one? 2) Do the
results of the Arkansas study validate the equation that cedar glades
are good deer habitat? and 3) Did the Black Prairie uplands in fact
support cedar glades during Protohistoric times? In addition, some
problems with the resolution of the soil data will be addressed.

The Analogy

In using the Ozark wildlife study to support the contention that the
thin-soiled ridges of the Black Prairie were good deer habitat, Johnson
is in effect saying that deer behavior in the two areas is similar. An
examination of the physical differences between the two areas sug-
gests that this is unlikely to have been the case. Segelquist and Green
describe the physiography in their study area as follows:

The study area enclosures lie within the Springfield Plateau of the
Ozark Highlands. The terrain is deeply cut by many small streams with
narrow floodplains. Elevations range from 400-1,100 ft. Ridges are
narrow and rounded. Slopes below the ridges and the upper heads of the
valleys range up to 60 percent but average from 25 to 30 percent.
Caverns, sinkholes, and sinking streams are common. Surface rocks are
of Mississippian and Ordovician age (1968:330).

This could scarcely be more different from the Black Prairie, a
relatively flat area with low relief—"rolling plain" (Johnson and
Sparks 1986:64), "gently sloping" (Murdock and Miller 1976:4), or
"flat to rolling hills" (Sparks 1987:1). Elevations range from
approximately 200 to 300 feet. Slopes are 5 to 15% on the Cretaceous
chalk ridges (Murdock and Miller 1976:8). Stream flow is ephemerel
to intermittent (Johnson and Sparks 1986: Table 5.5).

One similarity between the two areas is the occurrence of thin soils.
In the Ozarks, however, soils are "sands, loams, and clays derived from
chert, limestone, and sandstone. Soils are thin and rock outcrops and
ledges are numerous" (Segelquist and Green 1968:331). In the Black
Prairie, the soils are silty clays, silty clay loams, and clay loams derived
from the chalk, and are thick (up to 1 meter) except on ridge tops
(Murdock and Miller 1976). It is questionable whether the thinness
of these ridgetop soils is a natural phenomenon (see below).

In physical terms, then, there is no real similarity between the
cedar glades in the Ozarks and the low chalk ridges of the Black
Prairie. That the differences between the two areas in physiography,
elevation, slope, soils, and water availability, not to mention the
sharper seasonal changes in the Ozark Highlands, would lead to
differences in deer behavior seems a virtual certainty.

The Equation

Drawing on the Ozark study, it is inferred that cedar glades are
synonymous with good deer habitat (Johnson and Sparks 1986:68). An
examination of the Ozark study and other wildlife studies shows that
this is not a safe inference to make, for many reasons. In the case of
the Ozarks, the landscape that is described is not typical of natural
deer habitat. The deer are confined within large enclosures, and herd
mismanagement led to overpopulation earlier in the century. A result
of this is that many of the more palatable deer plant foods which would
normally be found are rare to absent in the area (Segelquist and Green
1968:330). The situation is in fact so altered that Segelquist and Green
refer to the vegetative makeup of their study area as an artifact of

Another very important point is that the Ozark study was primarily
concerned with browse plants. Browse is "that part of the current year
twig growth of shrubs, woody vines, and trees available for animal
consumption" (U.S. Army Corps of Engineers [USACE] 1983:VI-2). Although
deer have long been considered browsers, it has become
increasingly evident that they consume an enormous variety of foods (Korschgen et al. 1980; Vangilder et al. 1982; Zeedyk 1969) of which browse makes up only a relatively small portion (Collins and Murray 1961; Cushwa et al. 1970; Lay 1969; Stransky 1969; Zeedyk 1969). In fact, browse consistently makes up less than half of a deer's diet (Cushwa et al. 1970; Lay 1969) and can contribute as little as 3% (e.g., Cushwa et al. 1970:2).

The most important resource for deer is mast (Cushwa et al. 1970; Harlow et al. 1975; Korschgen et al. 1980; Martin et al. 1975), the “nuts, acorns, and similar products of hardwood species” (USACE 1983:VI-6). Mast, most importantly acorns, can contribute up to 80% of a deer's diet in a given season (e.g., Collins and Murray 1986:52) and is eaten year round if available (e.g., Lay 1969:8). In the Black Prairie, it is most abundant in the bottomland hardwoods, making them prime deer habitat (Stransky 1969; USACE 1983). In the Ozark study, mast was least abundant in the cedar glades (Segelquist and Green 1968:336).

Even if browse alone is considered, it is not clear that cedar glades typically provide abundant food for deer. While Segelquist and Green found cedar to be the most heavily browsed species during winter (1968:337), this is not what is generally reported. Cedar is usually classed as a plant of low palatability (Dunkeson 1955; Martin et al. 1961:8) and is often browsed by deer only when other food is scarce (Blair and Brunett 1980; Crawford 1961; Korschgen 1962). In the Ozark study, cedar was little browsed when mast was available (Segelquist and Green 1968:335), and even when the mast yield was low cedar only contributed 7% of the deer's diet. Despite the low yield, acorns and deciduous browse made up 47% of the diet during this lean year (Segelquist and Green 1968:336-337). Other foods located in the cedar glades include oak browse, greenbrier, and grasses and sedges (Segelquist and Green 1968), none of which are restricted to the glades. While the importance of low palatability foods such as cedar increases when the mast yield is low, occasional mast failures seem unlikely to have caused the cedar glades on the Black Prairie to be productive enough to support a settlement system largely dependent on deer exploitation. It should be noted that, while upland soils in the South are generally considered to be largely inadequate for producing quality deer foods (Short 1969), the upland Black Prairie soils in particular rate poor to very poor in the potential for supporting good wildlife habitat (Murphree and Miller 1976:Table 4).

It is evident that the conclusion that cedar glades equal good deer habitat is not valid. One thing that is clear from a comparative reading of wildlife studies is that results from one area are seldom duplicated in another (e.g., Beier and McCullough 1990:6-7; Korschgen et al. 1980:95). This is true even though these studies often use similar data recovery and analysis techniques. Using the results of one particular project to interpret events in a reconstructed prehistoric environment in a very different physiographic situation is unlikely to yield valid results.

Did the Prairie Ridges Support Cedar Glades?

It is not clear that the Black Prairie uplands did in fact support cedar glades in Protohistoric times as some do today. Historically, the acid soils capping some of the ridges, commonly called “Post Oak Prairie” by the General Land Office surveyors in the early 1830s (cf. Hilgard 1860), supported post oak (Quercus stellata Wang.), southern red oak (Q. falcata Michx.) and various hickories (Carya spp.), while the Vertisols, the true alkaline prairie soils such as Brooksville and Okolona, supported a fire-maintained ecosystem of prairie grasses. According to Hilgard:

The prairies proper—level, or very gently undulating tracts, possess a deep black, heavy soil on which timber is very scattered or altogether wanting . . .; and are interspersed with tracts of a more rolling surface, mostly with a shallow, pale, light soil, timbered with the common upland Oaks . . .(1860:261).

Johnson and Sparks stated that “Kuchler (1964) and Lowe (1911) reconstructed the Black Prairie vegetation to be cedar glades in places where the soil overlying the chalk is thin” (1984:67). This is not the case. Neither of the referenced works are reconstructions. Lowe presents a description of the Black Prairie vegetation as it existed in 1911, stating that:

the black prairie soils are practically devoid of tree growth . . . Along the bluffs of streams a more varied tree growth occurs. In these places are found hackberry (Celtis mississippiensis) very commonly, red bud (Cercis canadensis), rock maple (Acer saccharinum), chestnut (Castanea vesca), and red cedar (Juniperus virginiana) . . . (1911:89-90).

He also notes that:

On the higher red soils, an entirely different assemblage occurs. These areas support a rather dwarfish growth of trees of a few species, chiefly
The commonest are post oak (Quercus stellata), black jack (Q. nigra), Spanish oak (Q. falcata), and black oak (Q. coccinea tinctoria); shell bark hickory (Carya aiba), and, in the old fields, persimmon (Diospyrus virginiana) is also common (1911:90).

Kuchler (1964) gives a projection of what the climax natural forests for broad regions of the United States would be if the vegetative cover were to be left undisturbed. Cedar is noted as one of the potential dominant trees of the Black Belt in Alabama and Mississippi (1964:89); but the scale is too small to differentiate between deep and shallow soil areas within this large region. "The small scale of the map requires such a degree of generalization that a given vegetation type may vary considerably in its different sections" (Kuchler 1964:6).

Johnson et al. (1984:27) state that "If the Kuchler projection is correct, it should resemble the 1834 forest cover more closely than the modern distribution of trees." This is not the case, however. As Kuchler himself says:

The potential natural vegetation is always described as of a given date. The date of the new vegetation map of the United States, 1964, implies that man's influences during the past centuries may have had a lasting effect on the potential natural vegetation of today (1964:3; emphasis added).

Erosion due to poor farming practices in the historic period might well have caused such lasting effects on the potential vegetation of the thin-soiled chalk ridges. It is not clear that the thin soils of the prairie uplands are entirely a natural phenomenon. Using the eastern half of Oktibbeha County as a model, a comparison of the 1832 General Land Office survey notes with the modern soil survey indicates that many of the "shallow soils" in the prairie are a cultural phenomenon directly related to white settlement and cotton farming following 1832. One instance indicated that a corner which was located in "good third-rate prairie" in 1832, with a stream bed located about 250 feet beyond the corner along the section line, was in 1973 located in a widened stream bed. In other words, accelerated erosion (as opposed to normal geologic erosion) had removed about 300 feet of land surface laterally by 1973.

Witness tree data suggest that cedar was not common prior to white settlement in the area. Johnson et al. (1984:31), in a study of the 1834 General Land Office survey notes for Clay and Webster Counties, report that not one cedar tree was noted in a total of 1551 witness trees. The authors attribute this to survey bias (1984:31), referring to an article by Bourdo (1956) which states that surveyors tended to avoid trees with sticky sap (Johnson et al. 1984:21). They believe that cedar was indeed present in the area, as indicated by an 1832 survey of the Black Prairie in Alabama (Jones and Patton 1966) in which a small number of cedar trees were noted (Johnson et al. 1984:31). Why the supposed bias against cedar was not in operation in the Alabama survey is not explained.

There are additional witness tree data to support the contention that cedar would not have been present in the pre-contact period. An examination of the 1832 General Land Office survey notes from the eastern half of Oktibbeha County shows that the occurrence of cedar was extremely rare—only one tree of the 753 witness trees was a cedar and only one pine was noted. A similar situation is reported for northern Clay County by Ward (1987). Johnson and Sparks have again suggested that this may be due to the unsuitability of cedar as a witness tree (1986:67). However, an examination of the early 1900s instructions to surveyors by the General Land Office reveals no indication whatsoever that any type of tree was to be avoided or discriminated against in selecting the four closest stems, one in each quadrant. The only criterion for selection of the corner trees was that no tree should be less than four inches in diameter (Binger 1902). Biases such as those mentioned by Bourdo would not be expected to apply in areas where trees were scarce, such as the Black Prairie (Hilgard 1860:261; Lowe 1911).

The data speak clearly: out of 2,304 witness trees recorded in the early survey reports from the Black Prairie in Mississippi, only one cedar tree was noted. This is in an area where there were few trees to begin with. The authors are in agreement with Johnson et al. 1984, who state that "the best early data on the flora of the survey area [in the Black Prairie] are found in the General Land Office survey records" (1984:20). These witness tree data provide the strongest evidence of the actual conditions just prior to white settlement.

Resolution of the Soil Data

Johnson et al. (1989) presented a computer-based analysis of Chickasaw site locations in Lee County. The general soil map was digitized using a 30 meter cell size. It was stated that a disproportionate number of Chickasaw sites "occurred within grid cells designated as either Demopolis or Gullied land, the two soil types which indicated thin soils within the Black Prairie" (1989:47). This is some-
what misleading in that although the generalized soil association map of Lee County was digitized with a 30 meter cell, this does not increase the data reliability. As intended, this map is used only for generalized interpretations, and was never intended to provide soil data at a 30 meter resolution. In even a detailed soil survey, the smallest mapping unit is two acres, and up to 50% of that unit may contain a different mapping unit. Thus, at the association level, it is impossible to test soil series/Chickasaw site relationships. This is especially true if prehistoric settlement was based on a more refined knowledge of the soils/ ecology of a relatively small area; if "Chickasaw site location strategy is dependent upon specific resources rather than general resource zones" (Johnson et al. 1989:49).

Conclusions

In conclusion, there is little evidence at present which supports the hypothesis that the Protohistoric settlement pattern in the Black Prairie reflects a greater emphasis on deer hunting than the preceding Mississippian cultures. It has not been convincingly demonstrated that the chalk ridges in the Black Prairie supported cedar glades during Protohistoric times, and it is evident that cedar glades cannot be considered a priori to be good deer habitat. Given this, the idea that the historic Chickasaw were "preadapted" for the deerskin trade of the 17th and 18th centuries owing to the location of their settlements in prime deer habitat (Johnson and Sparks 1986; Johnson and Lehmann 1990) cannot be supported.

The nature of Protohistoric subsistence in the Black Prairie is still far from clear. Data from Mississippi and Alabama suggest that the Protohistoric diet may have been more diversified than that of the preceding Mississippian cultures (Futato 1989:181; Johnson 1990:4; Peebles 1987:23), a phenomenon which has been noted in other areas as well (e.g., Waselkov 1977). Information is so scarce, however, that it is difficult to draw supportable conclusions at this point. One body of valuable new data would be obtained by subjecting Protohistoric human skeletal material to isotope and trace element analysis. The relative importance of maize in the prehistoric diet can be assessed using isotope analysis (e.g., Farnsworth et al. 1985; Lynott et al. 1986); and, since maize is the major C4 pathway plant in eastern North America (Bender et al. 1981), it should be a relatively straightforward matter to compare the isotope ratio results from Mississippian skeletal material to Protohistoric samples and estimate the importance of maize through time. Similarly, lower levels of strontium in the Protohistoric samples could be taken as indicative of an increased meat intake (Sillen and Kavanagh 1982; Wing and Brown 1979:79-80). If the Protohistoric diet did indeed include less maize, then the question of what was being eaten would still be open. More excavations yielding faunal and floral materials are needed to clarify the matter.

Acknowledgments

The authors would like to thank Janet Rafferty, John O'Hear, Homes Hogue, and Keith Baca for their comments and suggestions on a draft of this paper. A version of this paper was read at the 1990 Southeastern Archaeological Conference, Mobile, Alabama.

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Cedar Glades and Protohistoric Settlement: A Reply to Peacock and Miller

Jay K. Johnson

I am pleased that Peacock and Miller (this issue) have turned critical attention to Protohistoric settlement patterns, a subject which has interested me for several years. This is the way that science is supposed to work. Not only that, they have managed to cite everything I ever wrote about the distribution of 15th through 18th century aboriginal settlement within the Black Prairie of northeastern Mississippi. At least someone is paying attention. Unfortunately, there is some distortion in the presentation of what they choose to label the “cedar glade hypothesis” which I would like to clear up.

I think it is important to separate the validity of the settlement pattern model from my attempts to interpret it in terms of prehistoric adaptation. Protohistoric and Chickasaw inhabitants used the uplands of the Black Prairie in an unusual and quite distinctive way. Peacock and Miller question my model of this pattern in their critique of a preliminary study of contact period site distribution in Lee County (Johnson et al. 1989). They point out that digitizing the Lee County soil association map at a data resolution of 30m “does not increase reliability.” I couldn’t agree more and, in fact, we pointed out the problem in using this fine a resolution with this gross a map (Johnson et al. 1989:47). We chose 30m, as stated, solely so that the data set would match satellite imagery for the region which we hope to employ in future analysis. Moreover, one of the implications of the Lee County study which Peacock and Miller fail to discuss supports their argument that soil type data rather than soil association data should have been used. That is, when using the soil type file for Lee County which is available at the Mississippi Automated Resource Information System office we got better patterning in spite of the fact that the resolution of these data is 500m. This led to the observation, quoted by Peacock and Miller, that “... Chickasaw site location strategy is dependent upon specific resources rather than general resource zones” (Johnson et al. 1989:49).

We would have preferred to use the detailed soils maps but were unable to do so because of time constraints and the absence of funding for the project. What we were trying to create was a generalized map of Lee County that showed high probability areas for Chickasaw sites so the county planners could make decisions about pending plans for development. All of the other work on Protohistoric settlement which is cited by Peacock and Miller has relied on the detailed soils maps for the counties involved. This has been possible because the projects were funded (Soil Conservation Service for the earlier work and National Endowment for the Humanities/National Geographic Society for the most recent) and I could afford the many hours of labor involved. We were encouraged to publish the Lee County results because they follow what we already know about Protohistoric settlement in spite of the coarseness of the data base.

So, what do we know about settlement in the Black Prairie? The joint University of Mississippi/Mississippi Department of Archives and History survey and testing project conducted during the summer of 1988 (Johnson and Lehmann 1990) was designed to refine the model developed on the basis of earlier CRM research (Johnson and Sparks 1986). More than 1000 hectares of soils were digitized using the 1:20,000 scale county soils maps for the 1988 project. Summarizing the more detailed analysis (Johnson and Lehmann 1990), shallow upland prairie soils are the best single predictor of protohistoric site location, constituting 9.75% of the survey area while including 35.47% of the site area and yielding an observed to expected ratio of 3.64 (see Johnson et al. 1989 for a discussion of the use of this ratio). There are, however, four other landscape features which are useful in modeling Protohistoric settlement in the sample: proximity to shallow upland prairie soils, deep upland prairie soils, bluff lines along first order stream bottoms, and bluff lines along second order streams. The logical combination of these (deep upland soils or shallow upland soils or within 120m of deep upland soils or shallow upland soils and within 90 to 210m of a first order stream or within 90 to 180m of a second order stream) made up 19.9% of the survey area and contained 51.0% of the site area. This nicely confirms the earlier model:

Summarizing, the typical Protohistoric site setting in the Line Creek sample appears to be the tops of the low ridges and bluffs of the Prairie overlooking the small tributary streams that originate in the Pontotoc Ridge and drain out into the Prairie (Johnson and Sparks 1986:72).

Not only is this pattern distinctive, it is unique. The majority of the Protohistoric/Contact period sites in all three samples, Line Creek (Johnson and Sparks 1986), Lee County (Johnson et al. 1989), and Clay County (Johnson and Lehmann 1990), are single component. That is,
nobody used the landscape before or after in the same way. Clearly some kind of techno-economic reorganization is implied. This leads us to the “cedar glade hypothesis.” I would like to quote at length from the earliest published statement of the Protohistoric model because it seems to me that Peacock and Miller present a fairly superficial characterization.

In Arkansas, stream bottom hardwoods are the primary foraging locality for deer during the spring and summer. Cedar glades with their open grassy areas provide the second most favorable warm weather habitat. During the winter, the location of the deer population depends on mast yield. When the acorn crop fails, the deer move to the cedar glades where they feed on the cedar, the only evergreen foliage in the area which the deer will eat.

In Clay County, it appears that Protohistoric settlement is situated to take advantage of two plant communities; bottomland hardwood and cedar glades/prairie. According to the Arkansas study, the bottoms are the primary warm weather habitat for deer and the cedar glades/prairie are the second best habitat. During the cold months, the bottoms are the third best deer habitat while the cedar glades are the second best. The glades are the primary winter habitat when the mast crop fails. . . . Protohistoric sites are strategically located in terms of optimal year round access to major deer habitat (Johnson and Sparks 1986:68).

Cedar glades are one component of a settlement strategy model which emphasizes access to several resources including arable bottom land. They are, however, an important component in that the focus of the settlement strategy on shallow soils is explained on the basis of the proposition that cedar glade resources, including cedars and grasses, may have been a prehistoric phenomenon. Peacock and Miller present two arguments against the prehistoric occurrence of cedar glades in the Black Prairie. The first is the witness tree data. Cedar is conspicuously rare in the record of trees blazed to mark section corners by the original land surveyors in the prairie. Although they acknowledge our reference to Bourdo’s (1956) discussion of the biases which are likely to show up in the witness tree record, Peacock and Miller seem to have missed the point, for they go on to discuss the official instructions given to land surveyors by the General Land Office. That is sort of like trying to predict driving habits on campus at Ole Miss on the basis of the Mississippi Drivers Manual: you could get run over that way. Actually, Bourdo (1956:760-761) outlines two major sources of bias. Surveyors tended to select trees which were easy to mark (smooth bark and sap which was not sticky), and they favored trees which they thought to be long lived. Anyone who has cut a cedar for a Christmas tree knows that the first bias applies. Pines are similarly under-represented in survey notes in the Loess Bluffs and North Central Hills to the west in Mississippi (Johnson and Thorne 1987; Johnson et al. 1988).

In spite of the difficulty in marking them, as Peacock and Miller point out, cedars do show up in the land survey notes. Since they did grow in the Black Prairie, it seems reasonable that glades would have been present in areas where thin soils overlay the chalk, given the strength of that association in the prairie today. Peacock and Miller argue that thin prairie soils are the result of historic erosion caused by land mismanagement. I don’t doubt that this is a factor, but the example they give illustrates lateral erosion rather than the horizontal, sheet erosion which would have been necessary to produce the thin soils that characterize Protohistoric site location in the Prairie. Of course, erosion is not an exclusively modern phenomenon; as a result of the impermeable chalk substratum, the Black Prairie is one of the most eroded physiographic zones in northern Mississippi (Stephenson and Monroe 1940). The question is, how much of the erosion is historic and how much is prehistoric.

Peacock and Miller conclude with a call for more research, a point with which I thoroughly agree. Test excavation at the Waide Site (22-Cl-764), an upland prairie site northwest of West Point, produced more than 1300 animal bones which were broken down by species and analyzed to assess assemblage diversity (Johnson and Lehmann 1990). More than 94% of the collection by weight was identified as large mammal (deer with a small amount of probable buffalo). This makes the Waide assemblage one of the most homogeneous to be considered in the region (Peebles 1987) and would seem to support the deer hunting hypothesis. However, Susan Scott, the zooarchaeologist who analyzed the collection, has cautioned that the preservation environment of the prairie soils would favor large bones, biasing the assemblage to an unknown degree (Johnson and Lehmann 1990). The sample was subsequently subjected to a bone collagen analysis yielding a solid radiocarbon date of AD 1490 after dendro correction. We have established that the shift to upland prairie settlement is undoubtedly precontact.

As the preceding discussion illustrates, we have a lot of work to do in understanding what exactly the Protohistoric peoples were doing in the prairie. Answering that, we will be in a better position to approach the more interesting questions of why the settlement shift occurred in
the first place and what it means in terms of the evolution of social organization in northeast Mississippi.

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The Humber-McWilliams Site Brass Headdress: Preliminary Evidence for the Re-use of European Metal by Contact Period Native Americans in Mississippi

Jonathan M. Leader

Three pieces of brass from the Humber-McWilliams site were submitted for technological analyses. Microscopic examination of the artifacts revealed a series of tool marks. These marks were matched to specific tools through the tool mark identification series produced by prior analyses of similar materials from other sites in the Southeast and through a series of continuing replication experiments first initiated in 1978. In addition, qualitative analyses of the constituents of the artifacts were performed using a Koslow Metal Alloy Identification Kit (#1899).

The result of these analyses was the identification of Native American and European features. This suggests that the artifacts were originally European in origin and were later modified and used by Native Americans. Further, the placement of these artifacts in Mississippian period Native American graves, showing no other signs of modification or intrusion by European materials or culture, suggests that these graves date from the early Contact period.

Introduction

This study analyzed three fragments representing two brass strips recovered from the foreheads of two Native American burials at the Humber-McWilliams site. The intent of the study was to provide information as to probable manufacturing origin and to gain additional information as to possible use and manufacturing techniques. Stereo microscopic examination, qualitative constituent analyses, and replicative experimentation were the techniques agreed upon to provide the raw data that would allow for the answering of these basic questions.
Additional impetus for this work was provided by an underlying interest in the activities of Hernando de Soto, the Spanish conqueror of the middle 16th century, who may have travelled through this general area. It was thought that the presence of early European metal artifacts at this site would perhaps shed some light on the question of Soto's route through Mississippi and add to our understanding of the interactions, both temporary and long term, between the earliest Europeans to visit the area and the Native Americans who were already living there.

First hand accounts by these early individuals and their companions provide our only discursive records of the Native American peoples they encountered and dramatically changed. Disease, war, hard use, and artificially produced famine were common byproducts of the various expeditions and interactions between Europeans and Native Americans. Later European interactions with Native Americans were colored by these earliest contacts, and many of our persistent popular misconceptions as to the "level" of civilization achieved by them are based on already-devastated remnants. Clearly, every attempt must be made to elucidate as accurately as possible a record of these people prior to the effects of European contact. These synthetic reconstructions rely on both the earliest written historical accounts and the material information provided by archaeological fieldwork. Thus, close determination of routes taken by early European travelers through southeastern North America is therefore very important.

This said, it is important to understand what kind of evidence European artifacts from this time period and inferentially related to the aforementioned activities provide. They do not provide "footsteps." It is not possible to connect the "dots" denoting recovery of appropriate artifacts on a map and thereby produce an accurate route from one point to another. Instead, historical references, regional topography, and appropriately situated archaeological sites containing appropriate artifacts must be used to build hypothetical "routes" that must then be tested for validity within both the immediate and the larger region. As with chains, no segment or route is stronger than its weakest "links."

Methodology

As previously mentioned, stereo microscopy, qualitative constituent analysis, and replicative experiments were the techniques employed in this study. Brief discussions covering the strengths and weaknesses of each technique follow.

Stereo microscopy is a basic part of technometric analysis and as such has been a mainstay of archaeology for decades. Fabrication technique patterns, pseudomorphs and other surface features are often readily visible and provide necessary information. This is, of course, dependent on their being accurately identified. It is surprising how many collections have never been analyzed at this rudimentary and necessary level. The data derived from the study of the artifacts recovered from the Humber-McWilliams site were compared with data recovered from over eight hundred artifacts recovered from similar, but not necessarily identical, contexts.

Qualitative metal analyses are specifically designed to produce definite answers to questions concerning the presence or absence of materials in a non-destructive way. Native American artisans in eastern and southeastern North America did not produce alloys of copper. In the case of the presumed copper artifacts from the Humber-McWilliams site, the presence or absence of lead, tin, antimony, and zinc could be of importance in determining manufacturing origins. Lead and antimony can be found as natural inclusions in native coppers, while zinc and tin are not usually found naturally associated with copper deposits. The presence of these two minerals in the copper artifacts would clearly demonstrate their non-Native American origin. A Koslow Metal Identification Kit (model #1899) was used to provide this information. Koslow is a respected supplier of reliable test equipment to the metals industry.

Nonetheless, qualitative analyses are just that—qualitative. They are not absolute indicators of quantity. Zinc is a prevalent byproduct of our industrial society. It is extremely easy to contaminate objects with zinc, both in the field and in the laboratory. In cases of doubt, such as the finding of zinc and no other commonly used sixteenth-century copper alloy material in the Humber-McWilliams artifacts, it would be necessary to follow up the qualitative analyses with a quantitative analysis to determine the absolute amount of the mono-component alloy in the artifacts.

Replication experiments are designed to specify the acceptable parameters of purported human behavior through the use of controlled experiments. These experiments can provide additional data allowing for the identification of probable tools and techniques and the outright rejection of others. Nonetheless, there are limitations. First, the experiments do not absolutely "prove" anything. They demonstrate rela-
tive possibilities from which probabilistic statements must be made. It must be kept in mind that such probabilities will thus always be subject to further refinement. Secondly, controlled replication experiments are by necessity simplified, and great care must be used to ensure that the technique being tested is not oversimplified to the point of uselessness. And finally, the results from the experiments must not be distorted to support untested contentions.

The experiments done as part of this study focused on the production of tool marks on similar metals by a variety of European and Native American tools available during the sixteenth century. These tools included handmade hammers, gravers, chisels, scrapers, abraders, drills, and burnishers of iron, copper, bronze, chert, granite (chipped and ground), sandstone, quartz (chipped and ground), green bone, aged bone, fossilized bone, shell, animal teeth (rodent, dog, and bear), fresh shark teeth, fossilized shark teeth, barracuda teeth, and wood with various grits (ash, finely divided sand/clay).

Analysis Results

The small metal fragment from a subadult bundle burial, one of three bundle burials making up Burial #83, measured 4.9 cm x 2.1 cm x 0.1 cm and weighed 4.9 grams (Figure 1A). Three biconically drilled holes were observed along one extant side. Each of the holes showed clear evidence of wear through abrasion by some form of attachment using a soft substance, entirely in keeping with the remains of twine found preserved by the copper. Surface scratches and other details suggest hammering and stoning as being the primary manufacturing techniques. No decorations or pseudomorphs were visible on this piece.

The other two metal fragments, from a single bundle burial designated Burial #102, measured 5.4 cm x 3.5 cm x <0.1 cm and 8.4 cm x 6.0 cm x <0.1 cm (Figure 1B). They weighed 3.1 and 7.2 grams respectively. These fragments were originally joined into a single strip and were apparently damaged in transit. The larger strip has a series of rectangles within rectangles embossed upon its surface and punched dots along its extant edges. Two attachment holes are located along one of the shorter sides and were punched through the metal by a small round tool. These holes show evidence of wear similar to that already discussed for burial #83 and undoubtedly caused by the twined fibers also found attached to this piece. No pseudomorphs were identified for either artifact from this burial.
The primary tool marks found on the pieces from both burials are readily identifiable as the marks produced by Native American soft tools made of bone and wood already identified at the Etowah site in Georgia and the Lake Jackson site in Florida. This portion of the analysis would suggest that the artifacts were of Native American manufacture.

The smaller metal fragment from burial #102, however, had a metal boss attached to the metal sheet by a series of regularly spaced tabs pushed through chiseled slits and bent to lock the pieces together. This is a technique that had not been previously identified with any recovered prehistoric Native American metalwork from the United States. On the other hand, it is a well known European technique and therefore suggestive of a non-Native American manufacturing origin.

Needless to say, great anticipation followed the constituent analysis, as it was hoped that this would clarify the situation, and it did. All three pieces of metal tested positive for both tin and zinc, making them a three-part alloy of brass. The most prevalent metal alloy of the sixteenth century was “bell metal,” a three-part alloy of copper, tin, and zinc. It was then clear that the brass, and most likely a substantial part of the initial fabrication, was European in origin. Nonetheless, additional surface decoration and modification had been accomplished using techniques and tools alien to the European tradition. The parsimonious conclusion was clear: the artifacts were of initial European origin and were reused and modified by Native Americans.

It was suggested to the local researchers that additional quantitative tests for antimony and lead content might facilitate corroboration of the early date suggested by the other grave materials (e.g., a polychrome bottle and Bell Plain jars and bottles and an owl effigy bowl) and the alloy itself.

Conclusion

The Humber-McWilliams brass headdress fragments are unique artifacts from Mississippi. They have the potential to provide considerable information concerning the interaction of local Native Americans with early Europeans who visited the area. The analysis already carried out has clearly demonstrated that European metal was available to and assimilated within local societies. The finesse with which these artifacts were modified and embellished by the local Native Americans suggests a familiarity with metal that should be further explored.

As to whether or not the artifacts can be said to date or result from the entrada of Hernando de Soto, results were inconclusive. It is likely that this was the case. Further analysis of the alloy content of the pieces themselves and/or additional analysis of bone from the burial offers the possibility of obtaining a definite verdict.

Acknowledgements

This report was prepared at the request of L.B. Jones of Cottonlandia Museum. Drawings of the artifacts are used with the permission of Mr. Glenn Johnson, Walls, Mississippi.

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George Sabo III

"There, but for the grace of God, go I." This phrase repeatedly echoed through my mind as I read Nancy Howell’s eye-opening summary of results obtained during a survey, conducted in 1986-87 by the American Anthropological Association’s Advisory Panel on Health and Safety in Fieldwork, of fieldwork hazards experienced by 236 Association members residing in the United States and Canada. The impetus for this study came from the recognition by Howell and others that our discipline in general pays little heed to matters of health and safety in fieldwork. Although individual experiences vary and some fieldworkers do indeed prepare thoughtfully for risks that can be anticipated in their particular areas of research, the frequent injuries and occasional deaths that anthropologists suffer as a direct consequence of their activities suggest that significant improvements can be made in the ways we prepare for and conduct our field research programs. In order to recommend specific remedial measures, however, reliable information needed to be compiled concerning fieldwork hazards in contemporary anthropology. Hence the survey and results presented in this volume.

The first chapter of the report briefly reviews the role of fieldwork in anthropology and the extent of our knowledge concerning fieldwork hazards. One discovery made by Howell and the advisory panel is that the profession of anthropology has somehow escaped investigations of occupational health and safety that are routine in many other areas of work. It is therefore difficult to determine how anthropology compares with other occupations in terms of accident and death rates. A rough calculation by Howell of presumed “premature” deaths of anthropologists during 1976-87, employing information drawn from obituaries published in professional journals, indicated an alarmingly high rate that signals loudly the need for a thorough review of fieldwork experiences and practices.

The next three chapters are devoted to issues of sampling the anthropological profession for the purposes of obtaining information for this study and reviewing the professional status and fieldwork experiences of those who responded to the survey. The target population was the 6,135 individuals listed in the 1986 AAA Guide to Departments of Anthropology. A 5% random sample was drawn from this target population, numbering 311 individuals. Considerable information concerning these individuals and their particular areas of research is presented in these chapters.

The core of the report consists of ten chapters detailing experiences anthropologists have had with such hazards as exposure, dangerous animals, other humans, accidental injury, parasitic and infectious diseases, degenerative diseases, mental stresses and illnesses, and special problems associated with taking spouses and/or children into the field. Statistical information is summarized from questionnaires filled out by survey respondents, and illustrative case studies are reported from published accounts and from information volunteered by other anthropologists. Throughout these chapters, hazardous experience data are broken down by continent (North America, Europe, Latin America, India, Africa, and the Pacific) to facilitate better evaluation of the kinds of problems one is most likely to encounter in any particular research area. I was surprised by the extensive list of potential hazards that anthropologists are exposed to while engaged in field research, and I was even more surprised—indeed chagrined—in reflecting on how unaware I have been of the range of hazards potentially affecting my own archaeological and ethnographic fieldwork in the Canadian Arctic and in eastern North America, even though I have always considered myself to be a reasonably cautious individual.

As far as preparedness goes, what comes through clearly in the report is that it is necessary to distinguish between hazards that can be anticipated and those that arise quite unexpectedly. Let me illustrate with a personal example. In 1974, I participated with three other individuals in an expedition on southern Baffin Island in the eastern Canadian Arctic. Our plan was to conduct an archaeological survey along a 125 mile segment of the south coast of Baffin Island. We would travel by kayak and tow a raft carrying archaeological equipment, camping gear, fuel, and food supplies. We carried a shortwave radio and one of the crew members was a highly experienced
radio operator. We studied navigation charts for the Hudson Strait and noted that our direction of travel was with a six knot current. All of the crew members were trained in first aid and we carried an extensive inventory of medical and other emergency supplies. Before the expedition began we determined procedures for responding to a variety of emergency situations. Finally, we carried firearms for protection from polar bears, a well known hazard for humans in that part of the world.

Almost immediately after our chartered float plane landed us at our point of departure, a distance of 125 miles from the nearest settlement, we began to experience problems we had not planned for. First, we found that the current in the Hudson Strait often swings around the numerous offshore islands, especially during tidal undulations, so that it flows in an opposite direction in the nearshore zone. Therefore, at certain times of the day our direction of travel was against instead of with a rather stiff current. Second, there had been a late breakup of the inshore landfast ice that year, and so there was an unusually large amount of drifting pan ice to impede our travel. At times it became simply impossible to paddle our tethered kayaks and raft, loaded with a thousand pounds of gear, through the dense pan ice. Third, our attempts to establish radio contact failed, presumably due to an unusual amount of sunspot activity that year.

It was under these circumstances that one evening, while we were taking advantage of still, relatively ice-free waters in the hope of making some distance after several days of sitting out a storm, that we found ourselves paddling about a mile out from shore in the midst of a pod of migrating walrus. A walrus frightened by our presence might easily upset our kayaks, plunging us into icy waters that can freeze the life out of a human in a matter of minutes. After a couple of very tense hours we made our way back to shore and set up camp, totally shaken by this event and worrying how and even if we were ever going to make it to the settlement, still located nearly a hundred miles away. Fortunately, the Inuit in whose camp we planned to reside after our survey was completed had been notified of our itinerary and, having had considerable experience traveling in the region, determined that our chances of making the trip by ourselves were slim indeed. Consequently, they departed camp immediately in their outboard engine-powered freighter canoes, and to our great good fortune found us the day after the walrus episode. The moral of this story, and the conclusion reached by Howell and her collaborators, is that anthropologists must be considerably more aware than they usually are of the risks that may occur in the areas they choose to work in.

Otherwise, we subject ourselves to elevated risks that too often end in tragedy.

The final chapter of the report, entitled “Making Fieldwork Safer,” summarizes the findings of the survey and provides a thoughtful discussion of practical steps anthropologists can take to reduce the risks they may face in the course of their fieldwork activities. The information provided here, and indeed the data presented throughout the report, is highly recommended reading for all anthropologists preparing to go into the field. Two issues of special note are calls for senior members of the profession to be more helpful in passing along the benefits of their experience to students who due to their relative inexperience are more prone to encounter difficulties in the field, and the need for the professional community and funding agencies to explicitly recognize fieldwork hazards as an area requiring considerably more attention than it has previously received. The readers of Mississippi Archaeology, incidentally, might be especially interested in one finding of this study: namely, that the range of fieldwork hazards archaeologists and physical anthropologists face are roughly equivalent to those faced by cultural anthropologists and linguists.

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