

## Abstracts of Paper Presentations

Tony Boudreaux, Vin Steponaitis, and Stephen Harris

### **Finding a “Missing Mound” at the Fatherland Site: Recent Fieldwork at the Grand Village of the Natchez Indians**

In 1730 an army of French, Choctaws and other Native allies attacked the Natchez Indians near their principal town, called the “Grand Village” or “Valeur,” in reprisal for the 1729 Natchez attack on Fort Rosalie. Anticipating this counterattack, the Natchez had built two forts near the Grand Village. When the French and their Native allies arrived, they laid siege to these forts, established firing positions on and around the mounds at the Grand Village, and proceeded to dig a sap (fortified trench) toward one of the Natchez forts. Here we describe the use of French battlefield maps to identify potential locations on the modern landscape of the two Indian forts, the sap, and two platform mounds that are no longer visible. We also report on recent fieldwork at Grand Village that has resulted in the discovery of one of the “missing” mounds and possibly the sap.

Samuel O. Brookes

### **An Effigy Bannerstone from the Ferguson Mounds, Jefferson Co., Mississippi**

In 1900 Culin described an effigy bannerstone from the Ferguson mounds in Jefferson County, Miss. The object was again mentioned by Calvin Brown in his 1926 volume. Since that time no Mississippi archaeologist has examined the artifact. In the summer of 2019 it was borrowed from the University of Pennsylvania and loaned to the Mississippi Department of Archives and History. This paper will provide the results of that study and attempt to place the bannerstone in an appropriate cultural and chronological context.

Ian W. Brown

### **A Mosaic of Three LMSers as Celebrated in their 70th Year: Philip Phillips, Robert S. Neitzel, and Jeffrey P. Brain**

Many scholars of great worth have contributed to our understanding of the rich archaeological resources of the Lower Mississippi Valley over the last two centuries. There are three archaeologists who are distinct, however, in that they have had tribute volumes offered relating to their 70th years. Phillip Phillips, one of the three founders of the Lower Mississippi Survey, along with James A. Ford and James B. Griffin, was only midway through his career in 1970, when he received the tribute *Philip Phillips: Lower Mississippi Survey*. Phillips went on to make many additional contributions to Southeastern archaeology by the time that he died in 1994. Robert S. Neitzel was in his 70th year in August of 1980 when he passed, so it was a posthumous honor when *The Great Sun* volume came out in 1982. Jeffrey P. Brain turned 70 in 2010, at which time he received the book, *The Peabody Man*, which was written primarily by his many students. He is still very much alive and, over the last 20 years, has contributed mightily to historical archaeology in the State of Maine. My paper considers these three books of reflections and the personal side of Lower Mississippi Valley archaeology.

Julie Doucet, Valerie Feathers, Velicia Bergstrom, and Paul French

### **Return to Lac St. Agnes – Results of the 2017 Field Season and 2018 Public Workshops**

In 2017, members of the Louisiana Archaeological Society (LAS) performed shovel tests and excavated two units at the Lac St. Agnes Site (16AV26) to locate and investigate magnetic

anomalies previously discovered by Tulane University in 2011. The research was community driven, with volunteers from Avoyelles Parish, students from Louisiana State University, members of the U.S. Forest Service (Kisatchie National Forest), and members of the LAS participating in all aspects of the field and laboratory investigations. As part of a larger outreach component, members of the general public analyzed over 2,800 artifacts through a series of professionally led workshops. Results from the fieldwork confirmed the presence of previously discovered anomalies. Artifact analyses placed the site within the Middle-to-Late Woodland period (A.D. 1-1200), with many ceramic artifacts belonging to the Coles Creek Cultural Phase (A.D. 700-1200). This paper details the results of the field season and the public workshops and offers recommendations for future work at the site.

Brooks B. Ellwood, Sophie Warny, Rebecca T. Hackworth, Samuel J. Bentley, Rebecca A. Saunders, Suzanne H. Ellwood, Dewitt H. Braud, Jonathan H. Tomkin, and Geoff Clayton  
**New Dates for the LSU Campus Mounds (16EBR6) make them the Oldest Known Standing Man-Made Structures in the Americas**

Here we report new Radiocarbon dates ( $N > 20$ ; Beta Analytic) from the lower parts (below 3 m depth) of both northern Mound A and southern Mound B, these located on the LSU campus. These dates range in age from 11,300 to 8,300 calBP and make these mounds significantly older than any other standing structures in the Americas. Younger dates were also obtained ( $N > 5$ ) from above 3 m in both mounds. Both organic sediment and phytolith radiocarbon analyses yield these dates, with most of the dates acquired from ash beds. Based on the phytolith morphology in these beds, it is estimated that 90-98% of the phytoliths were derived from burned reed and cane plants. These plants burn at extremely high temperatures, which destroy almost everything that is combustible, and therefore all burned bone fragments are microscopic. Some of this burned bone is clearly identified as osteon fragments, the building blocks of long bones in larger mammals. Because reed and cane plants burn very hot, these fires were clearly not meant to be cooking fires, given that these very hot fires would have destroyed all the meat. Therefore, we interpret these fires to have been ceremonial fires. Tribal groups were contacted for permission to evaluate the DNA within the recovered osteons, but permission was refused on religious grounds.

James Fogleman

**Whetting Your Appetite to See the Light: Novaculite and Quartz Crystals at Sites in Central Louisiana**

Exotic materials are widespread in Avoyelles and St. Landry Parishes of central Louisiana; however, they are generally only a minor component of the entire lithic inventory of sites. Of these imported materials, the two most frequently encountered are quartz crystals and novaculite. The distribution of these items has distinct temporal affiliations. The fact that both originate from nearly the same locales in Arkansas would hint that they should occur together at sites. The artifact inventory of novaculite is almost identical to that of local cherts. While a few quartz crystals appear as tools, they usually occur as unmodified crystals or shattered fragments. These shatter fragments suggest triboluminescence may have been important during certain time periods.

Anna F. Graham and Megan C. Kassabaum

### **Middens and Mound Summits: 2019 Excavations at the Lessley Site**

In this paper, we will present on our summer 2019 excavations at the Lessley site. Lessley is a single, well-preserved Plaquemine mound site that has not received much archaeological attention, aside from small-scale excavations during the 2013 Mississippi Mound Trail project. The 2019 excavations were concentrated in two areas: a sub-mound midden deposit and the mound summit. This allowed us to explore how the site was used both before and after the mound was constructed. These excavations revealed interesting evidence related to mound construction techniques, mound summit use, and pre-mound construction activities, among other things. We will discuss this evidence and also present an initial analysis of the artifacts recovered from these excavations.

Jack Green

### **Introducing and Interpreting the 'Mississippi Frog' Flint Clay Figurine**

A curious flint clay effigy pipe crafted at Cahokia was found sometime around the turn of the century in Mississippi. Examining where the pipe fits in the belief systems of the ancient Cahokians as well as proposing sites in Mississippi from where the pipe originated allow for the Mississippi frog pipe to be viewed through a clearer lens. Implications of shamanism and shapeshifting go hand in hand with this pipe and the wider range of Cahokian style flint clay figurines. The Mississippi frog is yet another valuable piece of information for the wider interpretation of the Mississippian belief systems and cosmology.

Diana M. Greenlee, Rinita Dalan, Thurman Allen, Michael Hargrave, R. Berle Clay, and George R. Holley

### **Investigating the West Plaza Rise at the Poverty Point World Heritage Site**

The Poverty Point WHS (16WC5) is a monumental earthen complex constructed by hunter-fisher-gatherers 3,700-3,100 years ago. This created landscape includes five earthen mounds (a sixth was added later), six enormous, concentric, semi-elliptical earthen ridges, and a large, nearly flat, interior plaza. We are investigating a little-known feature, the West Plaza Rise, measuring roughly 40×50 m and elevated about 1 m above the adjacent plaza. Magnetic gradiometry, downhole magnetic susceptibility, soil cores, and previous excavations provide data on its origins and its significance relative to other aspects of the site. A multichannel ground penetrating radar survey was conducted in November and those data are being processed to identify targets for additional testing.

Seth Grooms

### **Untangling the Poverty Point Phenomenon at the Jaketown Site**

Our recent work at the Jaketown site has shown that Poverty Point people occupied the site much earlier than previously recognized (ca. 4500-4200 cal BP) and that they were modifying the landscape at Jaketown intensively at ca. 3400 cal BP when at least two mounds were built quickly and simultaneously. The apparently planned burst of mound building at ca. 3400 cal BP raises interesting questions about the relationship between Jaketown and the Poverty Point type-site where a similar flurry of earth moving occurred at approximately the same time. In this talk, I will discuss our latest data, and how they are changing the way we view Jaketown and its role in the larger Poverty Point phenomenon.

Sara A. Hahn, Rita D. McCarty, and Bryan S. Haley

### **In the Trenches: Recent Archaeological Investigations at the Camp Shelby 113<sup>th</sup> Engineers WWI Training Trenches (22FO1443), Camp Shelby, Mississippi**

In 2016, Coastal Environments, Inc. (CEI), in coordination with the MSARNG, conducted a GPR survey of the 113<sup>th</sup> Engineers WWI training trenches at Camp Shelby, Mississippi. From 1917 to 1918, troops conducted training exercises at Camp Shelby to prepare for combat in the Great War. That training included the excavation of trenches and related infrastructure as well as their tactical usage. The 2016 GPR survey revealed several anomalies in addition to trench locations in the study area. In 2020, CEI and MSARNG investigated some of those anomalies, bisecting one of the trenches to gain a better understanding of its construction. This paper will focus on the 2020 investigations and the potential for future research at the site.

Christine L. Halling and Ryan M. Seidemann

### **Recovery of Three (Presumed) Native American Skulls from a Curio Shop in New Orleans, Louisiana**

The Louisiana Department of Justice (LDOJ) often receives complaints regarding the sale of human remains. Some of these complaints come from citizens who notice such sales being advertised on social media. In this case, a Facebook post made by a shop in New Orleans that caters to individuals with particular interests in curios and the occult listed the auction of three skulls to drum up interest. The shop, Boutique du Vampyre, listed the auction of three, presumably Native American, skulls for sale. Due to both the legal violation of offering these items for sale (in violation of NAGPRA and state law) and the high likelihood of a quick sale with minimal paperwork, the LDOJ immediately executed a search and seizure warrant to confiscate the items, ultimately removing them from the stream of commerce. Subsequent discussions with the seller led to no actionable intelligence related to the origin of the remains and the LDOJ has begun the process of NAGPRA compliance to inventory the remains. This presentation discusses the method in which community participation can result in the safeguarding of human remains and archaeological resources, as well as a short discussion of the remains recovered in this case.

Dana Hauffe

### **Prehistoric Agriculture of the Lower Mississippi Valley**

It has long been argued that the spread of maize agriculture is directly related to the increase of population thus causing amazing levels of social and cultural transformations; but what if we do not focus on maize? Rather than focusing a study on the quantity and location of maize and other associated remains, I focus my study on less commonly studied botanicals such as wildflowers, grasses, and otherwise invasive species of botanicals. I argue that the early spread of agriculture is due to the shared religious, medicinal, and ceremonial use of plants rather than just an economic necessity. Through analyzing previously identified botanical assemblages from the Winterville site (22WS500), I argue that it may be possible to identify areas of ceremonial and medicinal practice. These areas predate the construction and use of other areas related to feasting activities. By examining non-subsistence botanicals, or those not generally used for subsistence, alongside their associated ethnobotanical data, we may in fact, be able to identify areas of ceremonial and medicinal significance.

Elizabeth Hunt, Sadie Schoeffler, Samuel Huey, and Mark A. Rees

**The Willow Lake Site (16MA115) Revisited: A Report on a Late Woodland Village and Multicomponent Site in Madison Parish, Louisiana**

The Louisiana Public Archaeology Lab at UL Lafayette delineated a multicomponent site in Madison Parish, Louisiana in December of 2017 and January of 2018, at the request of the U.S.D.A., Natural Resources Conservation Service (NRCS). The Lower Mississippi Survey (LMS) first recorded the site in 1963 as having two earthen mounds on a natural levee south of Willow Lake. The Northeast Louisiana Regional Archaeologist revisited the site in 1993 and recorded residential midden deposits where the LMS had described mounds. By agreement between the landowner, NRCS, the Choctaw Nation of Oklahoma, and State Historic Preservation Office, the southern boundary of the prehistoric component was delineated. The goals were to determine if intact prehistoric deposits were present, to delineate the horizontal and vertical extent of the site, and to provide additional information for avoiding potential adverse effects from proposed conservation practices. This investigation recorded residential midden deposits, but no evidence of mound fill. The artifact assemblage provides evidence of multiple habitations dating from as early as the Late Archaic, with an extensive Late Woodland village. The landowner has agreed to avoid future ground disturbance within the site boundaries.

Hunter B. Johnson and Keith J. Little

**Recent Cultural Resource Management Investigations at Some Notable Sites in the Lower Mississippi Valley**

During the past few years, Tennessee Valley Archaeological Research (TVAR) conducted excavations at several interesting sites in the Lower Mississippi Valley. These projects included excavations at two abandoned nineteenth-century settlements. This presentation will highlight some of the findings from these unique sites.

Dennis Jones, Samuel O. Brookes, and John M. Connaway

**Gone but Surely Not Forgotten: Results and Implications of the 1967 Investigations at the Monte Sano Site (16EBR17)**

In March of 1967, archaeologists directed by LSU's Dr. William G. Haag conducted salvage archaeological investigations at the Monte Sano site (16EBR17). This site contained two conical earthen mounds that were mechanically excavated before the site was destroyed for the construction of an industrial plant. A nearby midden area yielded artifacts from several periods of prehistoric and historic occupation. These investigations determined that the mounds had complex stratigraphy, especially Mound A, and that prehistoric construction of the mounds dated to the Middle Archaic period (6000-2000 B.C.). Radiocarbon dates obtained from Mound A at the site indicate that it is the earliest known prehistoric mound in North America. Radiocarbon samples from Mound B also point toward a Middle Archaic period construction, although hundreds of years later than Mound A.

Megan C. Kassabaum and Anna F. Graham

**Exploring 2,000 Years of Lower Mississippi Valley History at Smith Creek**

Excavations at Smith Creek from 2013–2018 revealed an occupation history spanning Tchefuncte, Coles Creek, and Plaquemine times. Tchefuncte occupation of site included the construction and use of a large, communal building and potentially the beginning of mound-building activity. Centuries later, Coles Creek people turned the site into a major ceremonial center, surrounding the open plaza with at least three large, earthen mounds. Plaquemine people

then heavily utilized both the on- and off-mound areas as a habitation site and mound center. This paper examines the important cultural shifts that are encompassed by this long history through an examination of site organization and architecture alongside ceramic and paleoethnobotanical analysis.

Jessica Kowalski and Erin S. Nelson

### **Above and Below the Greenline: Variation in Mississippian Settlement Patterns in the Yazoo Basin of the Lower Mississippi Valley**

The Yazoo Basin of the Lower Mississippi Valley is colloquially split into the northern and southern portions, divided by a theoretical “greenline,” stretching east to west between Greenwood and Greenville, Mississippi. Although the physiographic differences between the Northern and Southern parts of the basin are subtle, differences in ancient settlement patterns and material culture are apparent, particularly during the Late Mississippi period. In this paper, we compare settlement patterns above and below the greenline, and offer some potential explanations, both environmental and cultural, for these differences.

Jeffrey Lewis Jr.

### **Preliminary Investigations of Poverty Point’s North Three Lithics**

In 1995, Jon Gibson conducted excavations at the Poverty Point site (16WC5) atop the third earthen ridge along the northern edge. Gibson’s efforts yielded nearly 5,000 chipped stone artifacts, produced from both locally available and exotic raw materials. Three competing theories have been proposed to explain the nature of the extensive exchange network that converged at Poverty Point: a corporate political strategy, an inter-societal trade fair, and a rituality. This paper seeks to evaluate these models based on the preliminary results of raw material sourcing and lithic analysis to consider the broader socio-political implications.

LisaMarie Malischke, PhD

### **Spreading the Word: Fort St. Pierre and Public Archaeology as Classroom Curriculum**

The remains of Fort St. Pierre (1719-1729), a National Historic Landmark, lie outside Vicksburg, Mississippi. Recent efforts by a dedicated community group highlighted the 300th anniversary of the initial construction of the fort. Yet, there is a sustained need to widen the impact of the fort’s history on the local community and on visiting tourists. The solution is a literal “spreading of the word.” With the blessing of the Friends of French Fort St. Pierre, I implemented public archaeology practices into my spring classroom curriculum. I redesigned my Cultures in Contact class to have each student choose a topic related to the fort and co-author informational panels. Plans are to print the panels in the fall, and to place them on display throughout the city of Vicksburg, thereby creating a Fort St. Pierre Museum Tour. As stand-alone pieces, or taken in concert, the panels will represent the newest fort research.

Chip McGimsey

### **State of Louisiana Archaeology 2019/2020**

This presentation discusses the current state of affairs in Louisiana archaeology. It will introduce new staff at the Division of Archaeology, and provide an overview of activities around the state over the last year

Jeffrey M. Mitchem

### **Pottery Vessels from the Ground into the Netherworld**

Several years ago, I was contacted by a retired man in Florida who had grown up in northeast Arkansas. His first contact by email was asking some questions about the names of some mounds and archeological sites north of my Research Station at Parkin, but within the area where I conduct research. As we continued communicating, his story unfolded. He had grown up in the town of Marked Tree, Arkansas, and with a friend had been introduced to pothunting by his scoutmaster in the 1950s. He had gone on to be employed by a large multinational corporation, and was based in several different countries. He was now retired in Florida, and wanted to donate his Native American artifacts to appropriate places. When I saw photos, I was amazed at the quality of the vessels he had, and we began making plans for me to travel down to pick up the vessels and bring them back. Not only were there fine specimens from northeast Arkansas, but also complete ones from Carson and related sites in Mississippi. But alas, during the process someone told him he could make a lot of money by selling them, so he ended only donating two vessels that he had already promised me. The rest were bought by artifact dealers, and have forever disappeared into the netherworld. I was able to photograph and make notes on as much as I could in one day.

Christopher B. Rodning and Jayur M. Mehta

### **Crawfish, Snakes, Earth, Water: Archaeology, Resilience, Persistent Places, and Native American Cultural Landscapes in the Gulf South**

Environments in the Mississippi River Delta and surrounding areas of southeastern Louisiana are susceptible to disturbance, including change and damage from periodic storms and flooding, from long-term cycles in the formation and abandonment of deltas and deltaic lobes, and from long-term fluctuations in sea levels. Precontact Native Americans adapted to this dynamic environment through cultural practices that promoted resilience, and through places that created points of stability and permanence within a periodically unstable landscape. Oral traditions of the Chitimacha people of southeastern Louisiana augment archaeological evidence with clues about the development of landforms, the significance of earthen mounds as monuments and landmarks, and the characteristics of landscapes shaped by water. These different forms of evidence about culture and culture change in the past combine to shed light on aspects of cultural landscapes and indigenous lifeways that emphasized resilience.

Rebecca Saunders

### **Excavations at the LSU Campus Mounds (16EBR6), 2012 and 2018.**

Prior to 2012, excavations in the LSU Campus Mounds were limited to Jeffrey Homburg's 1985 shovel tests and 1-x-1 m units around the bases of the mounds. His testing was done in advance of the installation of brick bulwarks around the bases of each mound. Jeff also examined soil cores taken by his major professor, Robert Neuman. He analyzed soil particle size, soil chemistry, and pollen grains from the cores.

Both Neuman and Homburg concluded that the mounds were the result of continuous construction episodes that resulted in the lensing prominent in both cores (Neuman 1988:1, Homburg 1988:31). Neuman concluded that the mounds were built with materials from the Prairie Terrace, while Homburg noted "local material," in recognition of the possibility that the thin gray lenses apparent in the cores might be from the E horizon present in the Scotlandville soils at the mounds. Our excavations have produced results that question some of these

conclusions, especially for Mound A. In this paper, I detail the stratigraphy exposed in 1-x-2 m excavations at the summit of both mounds, and compare and contrast results from the 1985 work and ours. I also provide alternative hypotheses for some of Ellwood's interpretations, specifically in situ burning in Mound A.

James E. Starnes and Jonathan Leard

### **A Newly Discovered Hattiesburg Quartzite Quarry in Amite County, Mississippi**

Hattiesburg Quartzite is a Middle Miocene age orthoquartzite known only from a few outcrops along the uplands overlooking the Homochitto River Valley near the Franklin/Amite County line in Mississippi. It is characterized as hard, gray-colored, opal-cemented, siltstone to fine-grained sandstone that can contain dissolution vugs that maybe opal-filled. Fresh Hattiesburg Quartzite exhibits excellent conchoidal fracture. In artifacts, the stone weathers differentially or completely, to a friable, light gray to- white colored silt/sandstone that can be uniform in color and texture or mottled. Similar pieces of rock were recently posted by Janet Spillman on Mississippi Gem and Mineral Society's Facebook page. She and son, Wesley Sturdivant, collected these rocks from gravel bars on Dry Creek near Rosetta in Amite County. Supposition by the authors about the possible identity of the material quickly prompted a field investigation. An extensive prehistoric quarry was eventually located deep in a steep, narrow ravine off the main creek channel by following an artifact "bread-crumbs" trail along gravel bars of the creek. The ravine walls and floor were lined with thick debitage of large spalls and flakes were embedded in colluvium amongst exposed boulder-sized bodies of heavily-worked Hattiesburg Quartzite. A contrast from previously-documented quarry outcrops, approximately 3.5 miles away in the uplands, this site remains wet, pristinely-preserving the largely-unweathered quarry artifacts. Despite the extensive activity depicted in these quarry, little is known concerning distribution and cultural usage of Hattiesburg Quartzite. Additionally, a single brown chert, middle-late Archaic, Sykes point was the only age-diagnostic artifact recovered from the ravine.

James E. Starnes, and Jonathan Leard

### **Orthoquartzite in Southeast Mississippi**

Limonite, goethite, and siderite cemented ferruginous sandstones and claystones are earthy, sedimentary ironstones common throughout Mississippi. Ironstones are typically soft and easy to work materials that saw widespread cultural utilization by prehistoric peoples as peck, ground, and even polished artifacts. A goethite-cemented quartzite (ferruginous orthoquartzite) was extensively quarried for its knapping qualities in southeast Mississippi from stream terraces along the lower Leaf and Chickasawhay River watershed. Ferruginous orthoquartzite is sufficiently cemented to break preferentially across the quartz grains to exhibit predictable subconchoidal fracture. Ferruginous orthoquartzite has a concentration of occurrence on prehistoric sites in Wayne, Greene, Jones, and Perry counties in southeast Mississippi. The utilization of ferruginous orthoquartzite had a long history that began as early as the Dalton projectile point tradition (ca. 10,500 to 8,500 years ago), and likely ended during the Woodland cultural period (ca. 3,000 to 1,000 years ago), as more suitable material was necessary for production of ever smaller projectile points. Ferruginous orthoquartzite was utilized because local sources of high-quality chert gravel is lacking in southeast Mississippi. The dominant lithic material on archaeological sites in southeast Mississippi is typically Tallahatta Quartzite from Basic City outcrops well to the north of this region, and limited resources can also be found

locally as float in the alluvium of the Chickasawhay River. Also common, are lithics made from higher-quality chert gravel derived from terrace outcrops further to the west, and milky quartz from terrace gravel from piedmont-derived resources further east in south Alabama

Vincas P. Steponaitis, Vernon J. Knight Jr., André Delpuech, Benoît Roux, and Geoffroy de Saulieu

### **Effigy Pipes from a Natchez Temple**

Recent archival research in France has brought to light manuscript drawings made in 1735 of two Mississippian effigy pipes, said to be from a Natchez temple, which almost certainly were taken during the siege at the Grand Village in 1730. The drawings are realistic, clearly depicting two “cat” pipes carved in the classic Bellaire style. Remarkably, one of these pipes has survived to this day and resides in the collections at the Musée du quai Branly in Paris. The documents identify the feline figures as deities, confirm that the pipes were smoked by priests, and describe the pipes as heirlooms more than two centuries old — all of which is consistent with our previous archaeological interpretations. These documents provide a valuable window on Mississippian iconography and religion in the early eighteenth century.

J. Javi Vasquez

### **ESRI GIS Tools and their Applications, Fort Polk Cultural Resources Office, Louisiana**

The Cultural Resources program at Fort Polk has benefited from the implementation of some of the newest ESRI software. We have changed the way site monitoring is carried out by transforming the way data are collected; the ESRI tools employed for this effort are Collector, Survey123, Dashboard, Workforce, Insights, ArcGIS Online, and ArcGIS Pro 2.4.3. In addition, we have changed the way the Heritage Families view and receive information by providing digital maps and data that can be accessed in the field, office, or home. This was done by developing two GPS-enabled Story Maps; one features swipe imagery from the 1930s while the other contains a considerable amount of site specific data and photo links. We have found these ESRI tools to be highly complementary to each other and very intuitive for our use. The result of implementing this new technology is an efficient system that displays data in multiple ways and across multiple digital platforms in near real-time.

Grace M.V. Ward

### **The Food Forests of Mississippi: Investigating Poverty Point-era Land Use at Jaketown**

Building upon the results of the Lower Mississippi Survey (LMS), subsequent generations of archaeologists working in Mississippi and Louisiana have been able to investigate questions beyond chronology and broad settlement patterns. Reconstructing human-environment interactions through time are one such line of research. Recent excavations at the Jaketown site in Humphreys County, MS, exemplify this trend. Here, I discuss the results of my and my colleagues’ paleoethnobotanical and geoarchaeological research on the site’s extensive Late Archaic component (ca. 4200-3400 BP) originally excavated by James Ford and Phillip Phillips under the aegis of the LMS. The earthen monuments and artifact deposits at Jaketown are the second largest known manifestation of the Poverty Point cultural phenomenon, and present an opportunity to investigate major questions: how did hunter-gatherers construct massive and complex monumental landscapes? What was the relationship between the people of Poverty Point and Jaketown and the natural world? My preliminary analysis of paleoethnobotanical samples from Jaketown indicates that people constructed and maintained a system of forest

management that altered the local ecology. This hypothesis has major implications for our understanding of the social processes manifest in the earthen monuments of Jaketown and Poverty Point.

### Poster Abstracts

Gabriel Griffin

#### **A Cost-Benefit analysis of stone axes**

This poster seeks to conduct a cost-benefit analysis of groundstone versus chipped stone axes. The Marginal Value Theorem (MVT) can be used if a tool is viewed as a “resource patch” that can be abandoned. Here it is used to analyze how many times a tool should be used before being replaced. This modified MVT considers the energy cost of replacing or re-sharpening a stone tool with the energy gain from using a tool with a higher return rate. This experiment records how much change the two axes experience over the course of multiple uses. A groundstone axe takes much longer to produce than a chipped stone axe, but at what point is it worth investing in a tool that takes longer to manufacture? Groundstone axes need to be replaced or modified less frequently but may be useful for different functions than those of chipped stone axes. The utility of these axes as woodworking tools are compared by performing various wood processing tasks to make conclusions about their use in the past. I found that the groundstone axe displayed fewer signs of damage from use while the edge of the chipped stone axe flaked continuously during use. Both axes removed similar amounts of wood while chopping. However, the groundstone axe cannot strike a tree or branch from as shallow of an angle as a chipped stone axe.

Shawn Lambert

#### **Searching for Unmarked Graves: Geophysical Survey of the Spirit Hill Farm Cemetery, Marshall County, Mississippi**

In November 2019, Mississippi State University’s Applications in Archaeology class conducted a geophysical survey of the western portion of a ca. A.D. 1800 cemetery located on a ridge at Spirit Hill Farm in Holly Springs, MS. Spirit Hill Farm (approximately 1300 acres) has been in constant ownership by the Bowen family since the Treaty of Pontotoc Creek, when the Chickasaw were forced to relocate to Oklahoma in the 1830s. At the request of the Bowen family, we used ground penetrating radar (GPR) to locate the western boundaries of the cemetery. Ultimately, the Bowens want to erect a fence around the true boundaries of the cemetery for protection and preservation. The results of the GPR showed approximately 25-40 anomalies consistent with graves, and as a result, we were able to establish boundaries where the fence will be constructed.

#### **Joanne Ryan, Donald Hunter, Bruce Grethen, Jay Roussel, Robert Crosser, and John Walker The Waters/House Sugarhouse (41FB354) on Arcola Plantation, Fort Bend County, Texas**

The Fort Bend Archaeological Society (FBAS) and Coastal Environments, Inc. (CEI) are conducting collaborative research on the endangered Waters/House Sugarhouse site (41FB354) in Fort Bend County, Texas. Jonathan D. Waters built the sugarhouse on Arcola Plantation in 1849, and it remained in operation until circa 1913. T.W. House bought the plantation in 1872. Extant above ground at 41FB354 are the massive brick foundations for a sugarcane grinder and steam engine, plus a brick and timberframed purgery building, used to separate molasses from sugar crystals. These structures formed part of a larger building complex, the remains of which

are likely preserved below ground. Arcola's is the most intact antebellum purgery left standing in the United States, making it historically significant on the county, state, and national level. Extant for 170 years, 41FB354 is now threatened by development. No archaeological excavations have been conducted at this site.