South Carolina Antiquities

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South Carolina Antiquities

Volume 50

Christopher R. Moore, Editor
Tammy F. Herron, Assistant Editor

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Letter from the Editor

Christopher R. Moore

This is my last year as editor of *South Carolina Antiquities*. I have enjoyed my time as editor and hope to leave the journal in good shape for the incoming editor, Joseph Wilkinson. As we celebrate the 50th anniversary of our Society, I hope we will take this time to reflect on the state of archaeology in South Carolina. As discussed by Carl Steen in this issue, the Society has always been jointly run by non-professionals and professionals alike. ASSC Board members have volunteered their time to keep the Society viable, maintain the journal and the newsletter, run the annual Fall Field Day event, and organize the annual conference. We need continued support in order to maintain the Society for the next 25 years. Doing so will require continued involvement of non-professionals, as well as an active and motivated professional membership. The Society will also benefit greatly from continued contributions from non-professionals to the journal.

In this 50th anniversary issue, we celebrate the accomplishments of the Society, call for continued improvements where needed, and reflect on both the past and the present in South Carolina Archaeology as documented by the diversity of articles in this issue. I hope to be around for the 75th anniversary. In the meantime, I plan to continue conducting and publishing archaeological research in South Carolina that involves the interested public through volunteerism and outreach. Many of the important archaeological questions for the next 25 years are outlined below by Dr. David Anderson. Given the technological advances of the previous 25 years, we are well-positioned to make major advancements in archaeological science. The best is yet to come. See you in 2043!

The Future of South Carolina Archaeology II: A View from 2018

David G. Anderson

Introduction

Twenty-five years ago, in the Silver Anniversary Issue of *South Carolina Antiquities*, a number of us reflected on the history and accomplishments of archaeology in the state, and what the future might bring. I concluded my own paper in that issue by saying that I looked forward to reading the Archaeological Society of South Carolina (ASSC)'s 50th anniversary volume, and seeing what we had made of the opportunities and challenges that lay before us. This paper, like those by Chris Judge and Carl Steen in this same issue, offer thoughts on the society's history, as well as an updated assessment of South Carolina archaeology—reviewing both where we came from and where we are going as a community. As in 1993, I believe it is important to examine and evaluate the condition of South Carolina archaeology from time to time, to get a sense of what we have accomplished, and what we might want to consider doing in the next 25 years. Readers of the 75th anniversary issue ca. 2043 will live in a very different world, but if all goes well, they will be participating in the same kind of dedicated professional and avocational community we had in 1993 and have now in 2018, working to advance South Carolina archaeology, and learn ever more about the past human occupation of our state. Some of those who will be present for our 75 anniversary celebration are, in fact, reading this issue now and, through your efforts, and those of people who you will enlist in the years to come, are going to shape what happens.

Where Do We Go from Here?

Most critical to improving our understanding of the past will be maintaining public support for archaeology in South Carolina and across the country. As long as laws such as the National Historic Preservation Act and related federal and state preservation and environmental legislation continue to exist, organizations and activities they oversee and fund will have a bright future. Public advocacy and support is absolutely critical to the continued existence of organizations such as the ASSC, the South Carolina Institute of Archaeology and Anthropology (SCIAA), the South Carolina Department of Natural Resources (SC DNR) Heritage Trust, the South Carolina State Historic Preservation Office (SC SHPO), the Charleston Museum, and the many other public and private agencies, companies, and foundations conducting archaeology in the state by generating the public interest, will, and legislation to see that it happens. As long as such support exists, our local colleges and universities will continue to attract and train the people needed to staff these organizations and accomplish our goals, the scholars and administrators who, with an interested and educated public, help make archaeology happen. There will be turnover, of course. About a third of the contributors to the 25th anniversary issue are no longer with us, and many of the rest are near the end of their careers or retired. While those who are no longer with us are missed and mourned, and their work cherished, many new faces have appeared. Indeed, the contents of *South Carolina Antiquities* since the Silver Anniversary Issue reveals name after name of people who were not present in the first 25 volumes, from 1968 to 1993, as discussed below. This is a good thing, because archaeology is a journey, not a destination—a continual effort to come to a better and better understanding of the past. Recruiting new people, ideas, and assistance is essential to this process.

Research and Management Considerations

In my 1993 article, I discussed a number of areas where future work could be usefully conducted by the state's archaeological community, with regard to both resource management and the kinds of research questions we might want to explore. These are reviewed here, with commentary on what has been accomplished, together with suggestions on what might be done moving forward.

Information Management. In 1993, I called for the computerization of the state site files and, soon thereafter, curated artifact, photograph, and field and analysis records. I also recommended that copies of every archaeological report produced in the state be placed "on CD-Rom or some other as-of-yet unknown electronic retrieval system" (Anderson 1993:79). These tasks have been largely accomplished with the site files and reports thanks to the ongoing efforts of the Office of the State Archaeologist under Jonathan Leader, in cooperation with the South Carolina Department of Archives and History, the University of South Carolian (USC) Department of Geography, and, above all, the South Carolina Department of Transportation (SC DOT), which funded much of the digitization effort, that was conducted by staff and volunteers in these organizations. The state site files are available online in ArchSite [http://www.scarchsite.

org/], a sophisticated Geographic Information Systems (GIS) linking archaeological and spatial/environmental data. South Carolina was also the first state to join the DINAA (Digital Index of North American Archaeology) project, an online system for linking archaeological data in many locations across the country and beyond, that started in 2012 (Wells et al. 2014, Kansa et al. 2018). Access to primary site and report data in ArchSite is appropriately controlled to protect sensitive locational, ownership, sacred, or other kinds of data. The application process for access is straightforward, and information in the system is readily available to those needing it for legitimate scientific and resource management work.

Report scanning and storage had been underway for some time, with ASSC helping lead the way, producing a CD in 2009 with the first 40 years of South Carolina Antiquities on it (Steen 2009), as well as the society's two monographs, describing the work at Cal Smoak (Anderson et al. 1979) and with Paleoindian materials in the state (Goodyear et al. 1990). Most ASSC publications are, in fact, now available online and can be downloaded in pdf format free of charge, a service few other archaeological societies in the country provide (ASSC 2018a). About the same time SCIAA reports, like the Research Manuscript Series, were converted to pdf format. This effort has moved markedly forward in recent years under the direction of the Office of the State Archaeologist. A total of 5,348 archaeological reports, including much of the CRM literature, have been scanned in pdf format and are available on request. This is a remarkable accomplishment, and thanks are due to Chad Long at SC DOT (the agency that paid for much of the work) and Karen Smith (who oversaw the project as principal investigator under the SCIAA Applied Research Division), Sharon Pekrul (SCIAA Curator), Tamara Wilson (ArchSite Information Manager), Joe Wilkinson, and many student volunteers and technicians for organizing the effort and obtaining and scanning the reports. Scanning of the state site files in pdf format was accomplished the same way, again with thanks to Chad Long at SC DOT for providing funding, Karen Smith for serving as PI and running the effort with the help of Tamara Wilson, and Keith Derting (SCIAA site file manager). Moving forward, every effort should be made to maintain and expand these systems, with new site and report data regularly entered, and any missing data found and added. The entire contents should be indexed and available online, subject to appropriate access control, so the information can be more widely used for research, resource management, and public education.

One area where work is needed moving forward is with the curation of collections and records from fieldwork and analysis projects. Curation facilities are legally obligated to meet federal and professional standards under 36 CFR Part 79, Curation of Federally-Owned and Administered Archeological Collections (NPS 2018a). In the early years of ASSC, many archaeological collections from around the state were stored at SCIAA, where they were open and accessible to interested researchers. Many of those researchers came from across the country to work with the materials. Once SCIAA relocated, and as the collections grew enormously with the increasing amount of work being done, for many years they were stored in facilities lacking climate control, reasonable security, and protection from insects and other vermin. The collections were being actively degraded, with access for research severely restricted. Fortunately, movement of the collections into a new climate-controlled facility occurred a few years ago, and comprehensive curation standards were implemented (SCIAA 2005); however the situation is in need of improvement. Accessing collections and records remains difficult, even for representatives of agencies funding the curation, or scholars who submitted the materials. Earlier collections need to be inventoried or re-inventoried, stabilized, re-packaged, and re-shelved. The same needs to occur with project records, photographs, analysis notes, and files, which need to be preserved to archival conditions and where possible converted to digital form, to ensure curation in perpetuity. An online collections database linked with the site file and report records would help make these materials more readily accessible for research, resource management, and public education. All collections and records, of course, should be subject to proper access controls for security and for the protection of sensitive information. There has long been a curation crisis in American Archaeology (NPS 2018b; SAA 2003; Sullivan and Childs 2003), and personnel from SCIAA early on took the lead in addressing it (Marquardt et al. 1982). Indeed, all curation repositories in the state are working toward rectifying the situation, and some, such as the Charleston Museum, the Savannah River Archaeological Research Program (SRARP), and the new Department of Natural Resources Parker Annex Archaeology Center, are exemplary facilities. I have no doubt the situation will become much brighter in the next 25 years, but it will take the effort of all of us in the professional and avocational communities to obtain the support and funding, and provide the labor, materials, and organizational skills to bring about needed changes.

Site Discovery, Excavation, and Reporting. In 1993 there were 16,769 archaeological sites recorded in the South Carolina state site files, a number that is now near 30,000. Many of these sites are threatened by development, climate change, and looting. As I argued in 1993, the professional and avocational communities will need to "play a greater and greater role in rescuing information from sites slated for destruction" (Anderson 1993:79). Given the rate at which site destruction was occurring, I suggested that the ASSC continue to support excavations under the direction of professional archaeologists (as it did in its early years at sites like Allan Mack, Cal Smoak, Manning, and Taylor) and "ideally should have at least one major ongoing excavation project supported by its statewide membership, together with a series of lesser excavations conducted by the stronger local chapters" (p 79). Indeed, ASSC volunteers

have always worked with professional archaeologists, and major long-term programs spanning decades of fieldwork and concurrent analysis have grown up in the last 25 years, linking professional archaeologists with avocationals at sites like Topper by Albert C. Goodyear and Johannes Kolb by Chris Judge, Sean Taylor, and Carl Steen. Given the risk to archaeological resources in years to come, I believe the need for large-scale fieldwork is more critical than ever, particularly in areas threatened by climate change and development. Sites in coastal areas in particular are threatened by increased storm frequency and sea level rise, and hence erosion and submergence, and should receive increased attention from professionals and avocationals alike. The number of sites at risk in coastal South Carolina from even a relatively minor rise in sea level is vast and will require major planning and fieldwork to help mitigate probable losses (e.g., Anderson et al. 2017).

Coupled with fieldwork, of course, analysis and reporting efforts need to grow as well. All work has to be conducted with the goal of properly curating recovered information in perpetuity, ideally in repositories resistant to dramatic weather events and longer-term climate trends. ASSC members and other volunteers can assist with laboratory analysis, writing, and curation, as well as with public education and involvement, like the highly successful archaeology Fall Field Days (ASSC 2018b) that have been held for many years now. Likewise, the ASSC professional conferences and publications have given many people the opportunity to talk and write about archaeology in the state. We need to encourage more members of our community to participate and join in the practice of archaeology, not only at new sites, but with collections and records from sites previously excavated. Several major ASSC-sponsored excavations from earlier years, for example, have yet to be fully reported. Given these sites were competently excavated and have surviving notes and records, they are available for reporting and provide excellent research opportunities. Indeed, we need more writing and publishing of all kinds, especially of major site reports. I know from personal experience how hard it is to produce major site reports. It took me several years to complete one of my first monographs on the Cal Smoak site on the Edisto River excavated by Sammy Lee and Bob Parler, an early ASSC project, and nearly a decade to report on five field seasons on Mound A at Shiloh in western Tennessee (Anderson et al. 1979, 2013). Few books or monographs are ever written in under a year or two, but they remain among the most enduring products of our profession, and with associated collections and records, are used by generations of later scholars. A good start on this kind of reporting are many of the MA theses and PhD dissertations being produced by new generations working in the state, like those by students working at Topper, that have been turned into formal monographs (e.g., M. King 2016; Miller 2010; Sain 2011; Weidman 2016).

ASSC also needs to encourage publication of monographs and lengthy papers as part of *South Carolina Antiquities* or as stand-alone monographs, like the two it published in its early years. Good examples of this practice have been accomplished by ASSC editors, such as that by Rebecca Barrera and Natalie Adams to publish the Bear Creek site report (O'Steen 1999); the work by Chris Judge and Carl Steen on the Jim Michie memorial volume, that included a report on the Daw's Island shell midden (Judge and Steen 2000; Michie 2000); the report on the archaeology at Sandstone Ledge Rockshelter (Steen and Judge 2003); and the work at the Mann-Simons site (Crockett 2008). Equally important have been thematic volumes, focusing on specific topics like public involvement in archaeology (Judge 1988); archaeological approaches to urban society in Charleston (Honerkamp and Zierden 1984); food distribution in the colonial period (Zierden et al. 2007); celebrating the career of Leland Ferguson (Agha 2013; Barnes 2013); and, of course, the 25th and 50th anniversary issues of *South Carolina Antiquities*, which were edited by Ken Sassaman and Carl Steen in 1993 and Christopher R. Moore in 2018, respectively. All of us who have been involved in archaeology know that it is our professional and ethical responsibility to write up the work we have undertaken, or at least ensure good records are left behind so others can do it. It is also advantageous to have organizations like ASSC willing to publish the work and make it widely accessible and excellent editors, as the Society has been fortunate to have, to help with the production.

Site Preservation Efforts. The SC DNR Heritage Trust continues to grow and preserve sites for the future within the state, and over the past quarter century has developed a proactive management strategy involving the acquisition and field and laboratory documentation of archaeological properties, including volunteer and public outreach programs. This success has been in large measure due to the leadership of Chris Judge, and in recent years, Sean Taylor and Meg Gaillard, and most recently the addition of Karen Smith. A major development with great promise for the future is the establishment of Parker Annex Archaeology Center in Columbia, with state of the art laboratory and curation facilities. Likewise, the archaeologists within the SC SHPO office have always been strong advocates for cultural resources, as have personnel in federal agencies working in the state, like Robert Morgan and Jim Bates with the National Forest Service. Much of the fieldwork and management recommendations regarding historic preservation actions, of course, come from personnel in the many private companies, nonprofit foundations, and university-affiliated CRM programs working in the state. Archaeological work is being conducted across South Carolina, and we have these people and public support for the legislation that permits it to happen, to thank for it.

In 1993, I argued that we need to devote more time to the discovery of sites within the coastal marshlands, around and in the bottoms of Carolina bays, in the waters of our rivers and offshore, and deeply buried in alluvial deposits. There has been considerable progress in these areas, with

Carolina bays now recognized as major loci of human settlement, thanks to work by Mark Brooks, Chris Moore, and others extending over several decades (Eberhard et al. 1994; Brooks et al. 2010; Moore et al. 2012). Likewise the state's underwater program has a strong national reputation, in part due to its close work with avocational or hobby divers. The discovery of the H. L. Hunley in 1995 and ongoing preservation efforts have attracted worldwide attention, but that is only one of many projects that have occurred documenting the states underwater resources in recent decades. The underwater archaeology program in South Carolina has been a national leader for decades and a role model for other states.

In 1993, I rather optimistically and somewhat naively argued that "mindless or actively malicious pothunting such as we see all too often today will diminish appreciably in the years to come" due to increased "public appreciation and respect for our nation's heritage" and "as laws protecting cultural resources come to be increasingly enforced" (Anderson 1993:80). Unfortunately, undocumented collecting and looting continues to occur, degrading the record of the past. Few looters locally can say they do not know any better, though. South Carolina, thanks to the leadership of the SCIAA, the SC SHPO, ASSC, and the Council of South Carolina Professional Archaeologists (COSCAPA), among other organizations, has one of the best public education programs in the country, sponsoring initiatives like South Carolina Archaeology Month (2018), which includes many public events and a series of great posters produced each year since 1992; ASSC's Fall Field Day, held annually since ca. 1988 (ASSC 2018b); and the many volunteer archaeological field and laboratory programs that have continued or grown in the past quarter century. I hope that all of these activities will continue for the next 25 years and beyond.

However, what I also said in 1993 remains true today, and I repeat it here, somewhat reworded to reflect changing circumstances: Activities that should be encouraged by ASSC include the monitoring of significant sites to document looting or erosion; the recording of sites and private collections and encouraging their donation for research and display purposes; and above all political action on behalf of legislation and programs that leads to greater preservation of the state's heritage. We need to acknowledge state and federal agency programs that are doing a good job, like the SCIAA, the SC DOT, and the SC DNR's Heritage Trust, or those run by the US Forest Service. We also need to challenge agencies that are not in compliance or, through inaction, are causing serious damage to cultural resources. The ASSC membership can be an important force for raising public and private consciousness, funding, and support for preservation legislation designed to protect our state's rich archaeological and historical heritage. ASSC can also gently but aggressively discourage undocumented collecting and, most importantly, refuse to tolerate looting or the buying and selling of artifacts and collections by its membership. Minimally, members who engage in these practices should be encouraged to change their ways and should not be elected to leadership positions or publish their materials in the Society journal. There are ethical responsibilities associated with the practice of archaeology, but they do not at all preclude the development of string positive relationships between the communities who love the subject (e.g., Pitblado 2014; Pitblado and Shott 2015; Pitblado et al. 2018). I have long appreciated the importance of avocational involvement to successful archaeological practice, having used volunteers in the field and laboratory for decades, and have long relied on avocational informants in the creation of PIDBA (Paleoindian Database of the Americas)(Anderson and Miller 2019). Accordingly, I have little regard for people in either the professional or avocational communities who disparage well-meaning members of either community.

Maintaining and Growing Our Constituency. That archaeology in South Carolina is so well regarded and supported is a remarkable accomplishment, due in large part to the fact that the leaders in our professional and avocational communities have been tuned in and responsive to state politics and the demands and interests of the state's political, business, and educational leaders. They provide a form of proactive leadership that should not be underestimated by those of us whose interests tend to lie in research or teaching, or who hold jobs in other walks of life. Organizations like ASSC and COSCAPA are critical to such advocacy. Most important has been developing and maintaining a constituency for archaeology among the public, through proactive support of events like ASSC's Fall Field Day (2018b) and South Carolina Archaeology Month (2018), and the annual posters on South Carolina archaeology, which I think are among the very best in the country. Archaeology is a team effort, requiring the support and participation of many people to succeed, and South Carolina has done very well in this regard, although as I discuss below, we should always consciously work to promote diversity and inclusion in our activities. Archaeology and historic preservation in South Carolina receives good press, locally and beyond, and has for a long time, in part because so much tourist revenue derives from it. It helps, of course, to have remarkable projects like those at Santa Elena, Topper, or the recovery of the Hunley to capture the public eye and imagination, as well as good public speakers to promote the work. But these are the tip of a very large iceberg or, perhaps more appropriately for our state, a very large palmetto. A lot of fine work and many projects have occurred over the last 25 years, and the state remains a leader in research, public education, and resource management in many ways. The entire archaeological community can take great pride in these accomplishments.

Compliance Concerns. In 1993, I argued at length for the development of a "system of peer review that will produce better and better technical and public reports… fostering constructive commentary on how archaeology is done in the state" (Anderson 1993:80). All scholarly work benefits

from careful peer review, and archaeology is no exception. Yet more thorough peer-review, involving appreciable numbers of the professional and avocational communities, has not happened in South Carolina, nor indeed anywhere in the country to my knowledge. The reason is likely because most CRM reports are produced with little external review prior to submission and, then, are delivered to state and federal agencies whose personnel rarely have the time to evaluate them carefully, nor have the expertise in all the site, artifact, and research areas being reported. Thorough technical review of the CRM literature, in fact, is beyond the capabilities and expertise of any one person, even the most dedicated of agency reviewers, who are typically vastly overworked, underpaid, and whose constructive comments are not always appreciated by contractors having to expend time and resources addressing them, however necessary and justified. Nevertheless, agency peer-review is absolutely essential, especially with regard to implementing and enforcing work mandated by existing legislation and justifying the results and recommendations about historic preservation that come from it.

Technical content of reports, however, is increasingly subject to review, in part through the marketplace and through peer pressure. With archaeological reports now readily available online, anyone interested can read and assess the quality of the work being performed, the nature of the evidence recovered, and the validity of the arguments and interpretations. Individuals and organizations who produce poor quality work are likely to suffer for it, by either causing problems for their clients, or through pressure on funding agencies from their peers, if the work is clearly not up to par. This is one reason a lot of very good CRM work is being produced, because most archaeologists take great care and pride in what they do, are ethical in their behavior, and recognize that doing good work tends to result in obtaining more work.

I thus think more peer-review needs to occur at all stages of archaeological practice, and do have a suggestion the ASSC might consider to help it occur more often. Recent editors of *South Carolina Antiquities* have included far more book reviews than appeared in earlier years, as discussed below, yet most of these reviews are of books from traditional academic or private presses. Why not include more reviews of major CRM reports once they are available for dissemination? These reports often have great research value, and are almost always available free of charge, instead of at the increasingly exorbitant prices conventional presses charge. Great reports are coming out every year as a result of CRM projects, and the best scholars working in an area make every effort to follow this literature. However, more reviews could help increase awareness of these documents to a far wider audience.

Capacity Building. Having good people around, as noted, is critical to archaeology's long-term success. The ASSC was co-founded by two such individuals, then State Archaeologist Robert L. Stephenson and James L. Michie, an avocational who went on to have a long career in professional archaeology. Recruiting and developing new leaders is an important part of what we do as a profession through our hiring practices and our teaching, and by providing opportunities to learn about archaeological practice. ASSC has helped nurture many archaeologists, professional and avocational, through the years by providing field and laboratory training opportunities, and encouraging them to publish in the journal. In reviewing 50 years of papers in *South Carolina Antiquities* (as discussed below), what I found remarkable was the number of papers published in the journal by well-known archaeologists, some of whom stayed in South Carolina and others who moved elsewhere.

Another thing archaeological communities need are good role models and mentors, and in that regard, we have been luckier than many states in having good avocational and professional archaeologists in our community for many years. These include, of course, people like Robert L. Stephenson, Stanley A. South, Leland G. Ferguson, and James L. Michie, all of whose lives have been celebrated in this journal and beyond. What I most admired and appreciated about Robert L. Stephenson, besides his obvious love for archaeology, was that he gave a lot of young people like myself the chance to do archaeology, that he was always interested in bringing in new blood, and that he was willing to tolerate new ideas, even when he clearly did not agree with them. This was particularly true in the heady days of the mid-1970s to the mid-1980s, when CRM and the New Archaeology were dramatically changing the field, and South Carolina archaeology along with it. Dr. Stephenson (I could never bring myself to call him Bob, as some did) would sometimes shake his head and give a wry smile at what people were doing with their ideas on sampling, controlled surface collection, and so on; but, he would also let them continue, and more often than not be openly pleased with the results. Opportunities for young people need to continue to be fostered by future generations of leaders, as they were for many of us when we first worked here in South Carolina.

For most of the last 50 years, we also had the presence, balance, and guidance of one of our country's finest archaeologists in Stanley A. South, a role model for both the quality of his fieldwork and for his writing and thinking. Stan provided a model of research excellence and productivity for the rest of us to emulate. Every state needs to have someone like Stan, and in this regard, South Carolina has been extremely fortunate. I count Leland Ferguson, Al Goodyear, Chris Judge, Jim Michie, Carl Steen, Martha Zierden, and a number of others as well, in these ranks. It is rare for scholars to spend much of their career working in one geographic area, yet these individuals, through example, demonstrate what a lifetime of exploration and thinking can accomplish. Others like them are present in younger generations, but I will defer naming them because they might be uncomfortable at being given institutional status. Their names are obvious to anyone doing archaeology in the state, however, and

Table 1. Authorship by gender, and all content and book reviews by subject matter, per decade, in South Carolina Antiquities, 1969-2018, count and percentage data.

AUTHORSHIP BY GENDER	1969-1978	1979-1988	1989-1998	1999-2008	2009-2018	TOTALS
Male	79	65	83	63	147	437
	94%	78%	87%	72%	67%	77%
Female	5	18	12	25	71	131
	6%	22%	13%	28%	33%	23%
Total	84	83	95	88	218	568
	100%	100%	100%	100%	100%	100%

ALL CONTENT BY SUBJECT MATTER	1969-1978	1979-1988	1989-1998	1999-2008	2009-2018	TOTALS
Native Peoples	51	32	38	15	51	187
	65%	46%	54%	21%	31%	41%
Historical	13	18	20	36	75	162
	16%	26%	29%	49%	46%	36%
Other	15	20	12	22	38	107
	19%	29%	17%	30%	23%	23%
Total	79	70	70	73	154	456
	100%	100%	100%	100%	100%	100%

BOOK REVIEWS BY SUBJECT MATTER	1969-1978	1979-1988	1989-1998	1999-2008	2009-2018	TOTALS
Native Peoples	6	5	12	0	12	35
	86%	63%	75%	0%	26%	43%
Historical	0	1	1	3	22	27
	0%	13%	6%	60%	48%	33%
Other	1	2	3	2	12	20
	14%	25%	19%	40%	26%	24%
Total	7	8	16	5	46	82
	100%	100%	100%	100%	100%	100%

many are among the most prolific contributors to this journal, as documented below.

A Review of 50 Years of South Carolina Antiquities

To help celebrate the 50th anniversary of ASSC, I went through all 50 volumes of *South Carolina Antiquities* and tabulated the articles, book reviews, and brief field reports by author, gender (male or female), subject matter (Native American, Historical, or 'other'), and editor (Table 1; Figures 1–3). Papers, Notes from the Field, and book reviews classified as Native American included any that had First Peoples as their subject matter in whole or in part, whether the work encompassed Pre-Contact, Contact, or contemporary occupations. The Historical category was applied to work on colonial and more recent occupations by Europeans, Africans, and other immigrants from the Old World following sustained contact after 1492, that did not include Native peoples. The Other category included articles, notes from the field, and book reviews of archaeological research from outside the Southeast; papers on avocational professional relations; general field or analysis procedures; histories and historical reflections about the ASSC from members (like the 25th and 50th anniversary issues, which had appreciable history and reflection); obituaries; and festschrifts recounting the life and contributions of distinguished members, such as the special issues recognizing James L. Michie and Leland Ferguson. These have accounted for about a quarter of all the papers published in the journal.

Papers and reviews about Native peoples and by males have dominated the journal throughout its history, but contributions by women and about historical archaeology have increased over time, as have the number of book reviews. One thing is clear, and that is over the years *South Carolina Antiquities* has grown increasingly diverse in authorship by gender and has a strong balance in its coverage of Native American and historical archaeological subjects. However, we still have a long way to go before the incidence of female authors reflects the composition of the profession as reflected in graduation rates and employment, which are majority female, not only in the US but in Europe (Bardolph 2014; Lazar et al. 2014). Similar differences in publication rates by gender have been observed in many archaeological journals (Bardolph 2014), and it is assumed that this patterning will change as more and more women enter and rise in the field. Nevertheless, diversity and inclusion needs to be encouraged, and editors play a critical role in shaping whether this happens. It is interesting to note, for example,

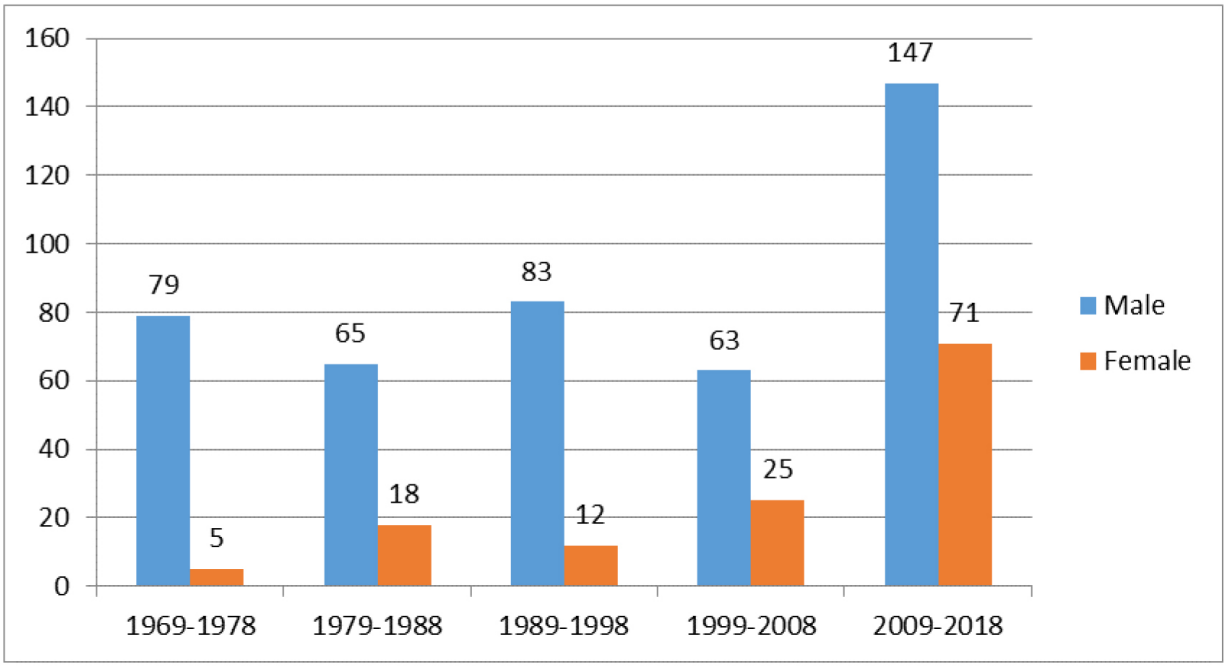

Figure 1. Papers by gender per decade in South Carolina Antiquities, count data.

the 13 of 50 years women edited or co-edited the journal (1984, 1998-1999, 2004-2013)—just over one quarter of its 50-year history—saw 54% of all the papers produced by women (71 of 131), as well as 54% of all the papers encompassing historical archaeology (88 of 162), and 40% (33 of 82) of all book reviews. These figures suggest that female editors encourage greater diversity in authorship and subject matter, although it should also be noted that male authors (n=128) still dominated the journal in overall numbers during these same 13 years. These trends have continued in recent years under the current (male) editor, which suggests that the journal is continuing to move

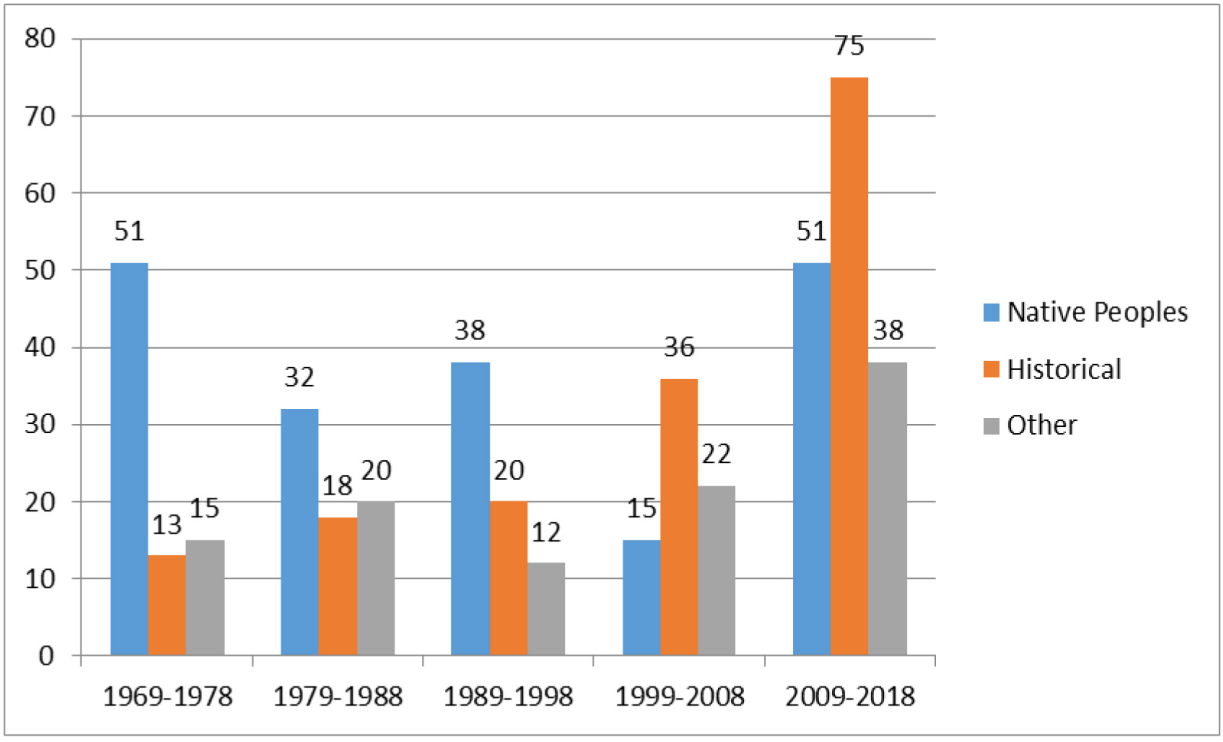

Figure 2. Papers by subject matter per decade South Carolina Antiquities, count data.

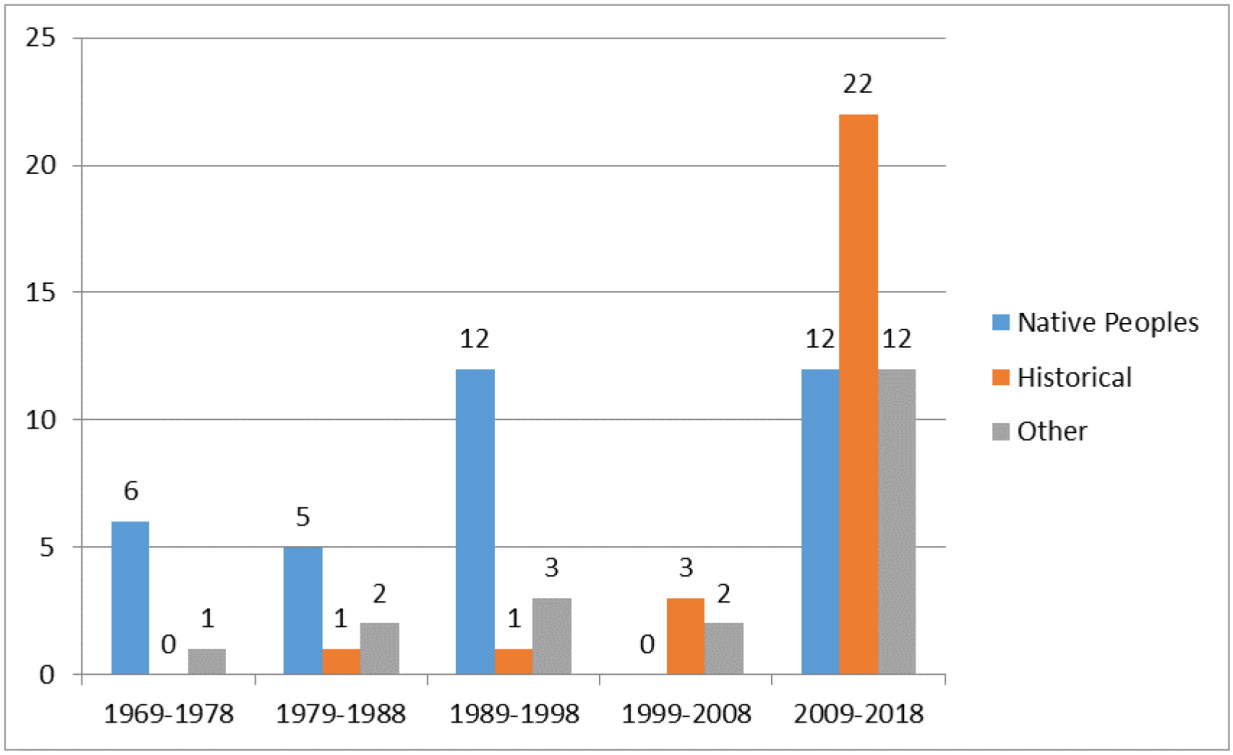

Figure 3. Book reviews by subject matter per decade in South Carolina Antiquities, count data.

toward gender equity, but we must be ever conscious of these patterns and foster an ethos of inclusion.

Other interesting aspects of this study include the observation that editing the journal is important and challenging work. Eighteen different editors or co-editors have served ASSC, of whom four served five years or more, Christopher Moore (n=5), Natalie Adams (n=7), Wayne Neighbors (n=8), and, amazingly, Ken Sassaman (n=10 years), whose record may never be exceeded. These four, in fact, served 30 of the 50 years the journal has been published, although this should not in any way discount the work of the others, all of whom have played an important role in bringing knowledge to light and shaping the journal's content. As an example of this, while the trends were emerging earlier, I attribute the greatly increased diversity in *South Carolina Antiquities* in recent years in large measure to the editorship of two individuals, Natalie Adams and Jodi Barnes, who expanded the content by introducing new article types (i.e., Notes from the Field), far more book reviews, and providing numerous writing and reviewing opportunities to a diverse pool of students, avocationals, and professionals. Martha Zierden also deserves some of the credit for the greater inclusion, since she edited or co-edited two issues that emphasized historical archaeological themes. All the Society's editors, through their efforts, have created the enduring historical and scientific record of the Society, and have shaped what the professional and avocational communities consider archaeology to be in South Carolina.

Authorship shows interesting trends as well (Table 2). Some members have contributed regularly for many years, while others contributed only once or are just getting started. The journal has provided many people the opportunity to publish professionally, with 266 different authors contributing to the journal down through the years. A total of 456 papers where the author was identified appeared during this same period, and since many were co-authored, the actual number of authors totals 568. Of the 456 papers, 24 people authored or co-authored 230 of them, or ca. 50% of the total produced over the 50-year run of the journal (Table 2). The record for the most papers belongs to Carl Steen (n=23), followed by ASSC founder James L. Michie (n=20), and many other names familiar in South Carolina archaeology and to most ASSC members. This is a record of publication and support for the ASSC that these individuals, like the editors who produced these issues, should be proud of, forming a lasting historical impact on how archaeology is conducted and interpreted in the state. Gender disparities, not unexpectedly, are pronounced in this listing, since the 50-year span encompasses a long period when women were not well represented in the journal. Martha Zierden is the only woman in the elite 8, consisting of authors with 10 or more papers, and only 4 women are among the top 24 authors with 5 or more papers; again, these numbers should change moving forward, but we must see that it does and not merely assume it will.

Importantly for those starting out and interested in developing a strong publication record, while 179 people have written or contributed to 1 paper, just 38 have

Table 2. Authorship in South Carolina Antiquities 1968-2018.

Steen, Carl	23		
Michie, James L.	20		
Trinkley, Michael B.	18		
Goodyear, Albert C.	17		
Anderson, David G.	15	266	discrete authors
South, Stanley A.	13	456	distinct papers
Judge, Christopher	12	568	total authorships
Zierdan, Martha	10		
Brooks, Mark J	9		
Sassaman, Kenneth E.	9		
Costello, Robert C.	9		
Lewis, George S.	8		
Joseph, J.W.	8		
Edwards, Thomas J.	7		
Poplin, Eric C.	6		
Wilkenson, Joseph	6		
Joseph, J.Walter	5		
Ferguson, Leland G.	5		
DePratter, Chester B.	5		
Anthony, Ronald W.	5		
Charles, Tommy	5		
Adams Pope, Natalie P.	5		
Young, Stacey L.	5		
Cooper, Jessica	5		
		# authorships	% of 456 papers*
24 authors have written or contributed to 5 or more papers		230	50%
8 authors have written or contributed to 4 papers		32	7%
17 authors have written or contributed to 3 papers		51	11%
38 authors have written or contributed to 2 papers		76	17%
179 authors have written or contributed to 1 paper		179	39%
		568	125%

* total does not sum to 100% because many papers were co-authored

authored or co-authored to 2, 17 to 3, and 8 to 4. The important thing would appear to be not to stop with just one paper, because publishing five or more will put you in a highly rarefied atmosphere! I say this because having good writers and editors is critical to the long-term health and success of the journal. Moving forward, I hope there will be as many fine issues of *South Carolina Antiquities* published in the next 25 years as there have been in the 50 years we have seen to date.

What Can We Learn in the Next 25 Years?

We have learned a great deal about the past human occupation of South Carolina in the last 50 years. Ten questions raised in 1993 that I personally wanted to see answered, or at least seriously explored, in the 25 years from 1994 to 2018, are revisited here. These reflected my own interest in Native human occupations in the state. I'll then conclude with a series of more general approaches or themes that I believe should receive attention in the next quarter century that, in the spirit of this essay, are hopefully a bit more inclusive of the entire archaeological record.

Here is what I asked in 1993, along with a brief statement regarding where we are now. All of these questions from 25 years ago, it should be noted, are still relevant and warrant additional research.

(1) Do major undisturbed Paleoindian kill or campsites exist in our state and, if so, what do they look like? [Answer: YES, at the Topper site an extensive Clovis assemblage has been examined for nearly 15 years now, and a great deal has been learned about what was happening there. Furthermore, other buried Clovis sites appear to exist in the general area (e.g., Goodyear 2005, Miller 2010, Sain 2011; Smallwood 2012)]

(2) Did human beings first settle in the South Carolina area

around 13,000 years ago as is currently thought, or much earlier, as some have suggested? [Answer: Remains to be determined, although great debate attends the antiquity of occupation of the Topper site (e.g., Goodyear 2005; M. King 2016; Sain 2016)]

(3) What kinds of archaeological remains are present in the waterlogged marshes and Carolina bays of our state? Does, for example, South Carolina have its own submerged sites with remarkable preservation like Windover or Key Marco? [Answer: Remains to Be Determined, but inspired studies of Carolina bays have been underway for much of the past quarter century (e.g., Brooks et al. 2010; Eberhard et al. 1994; Moore et al. 2012)]

(4) How did Middle and Late Archaic populations in South Carolina interact with people in other parts of the region? [Answer: Remains to Be Determined, but inspired efforts by people like Ken Sassaman and colleagues have shed much light on these matters, and coastal Archaic period archaeology is currently undergoing something of a renaissance thanks to researchers like Matt Sanger, Karen Smith, and many others (e.g., Sassaman 2006, 2010; Sanger et al. 2018)]

(5) Is the spacing of Late Archaic shell rings along the coast tied to available resources, group territories, or patterns of interaction; and, how do these sites relate to contemporary sites elsewhere along the coast and into the interior? [Answer: Remains to Be Determined, but inspired efforts by people like Matt Sanger, Victor Thompson, and many and others are exploring these questions along the Atlantic coast (e.g., Thomas and Sanger 2010)]

(6) Can useful local Woodland ceramic and projectile point chronologies be established for various parts of the state? [Answer: Remains to Be Determined, but inspired efforts by people like Chris Judge, Karen Smith, Carl Steen, and many others are exploring these questions (e.g., Smith and Stephenson 2017, Judge, this volume)]

(7) What was the political geography of this part of the Southeast like during later Archaic, Woodland, and Mississippian times, and how and why did it change over time? [Answer: Remains to Be Determined, but inspired efforts by people like A. King, DePratter, Cable, Stephenson, Sassaman, Sanger and many others, including myself, are exploring these questions]

(8) Where was the temple of Talimeco near Cofitachequi that DeSoto saw and, at a larger scale, what kinds of sites characterize Mississippian settlement along the Santee-Wateree-Congaree drainage? [Answer: Remains to Be Determined, but inspired efforts by people like Judge, Wagner, Cable, and King are exploring these questions. Related to this, the primary mound at Mulberry is currently the subject of large-scale mitigation excavation, underway in 2018 and 2019]

(9) Where was Ayllon's 1526 colony? [Answer: Remains to Be Determined, but recently thought to be further south, along the Georgia coast, and not along the South Carolina coast near Georgetown and Winyah Bay, as long presumed.]

(10) How did climate shape human settlement in the South Carolina area in the past, and what lessons does this have for our own future? [Answer: Remains to Be Determined, but this has been a major area of research interest in recent decades, and will be for the next 25 years as climate change becomes an increasing part of our lives (e.g., Anderson et al. 1995; Anderson et al. 2017; Brooks et al. 2010)]

Approaches We Should Consider Moving Forward.

(1) How do we maintain and grow a large, diverse, and talented professional and avocational archaeological community in South Carolina, and encourage their participation in society activities and publications?

(2) How do we encourage the creation of more major books and edited volumes on South Carolina archaeology, addressing specific periods or research topics, and encompassing Native American and historical archaeology, and the practice of archaeology in general? Syntheses and edited volumes need to be encouraged as much as possible (e.g., Anderson 1994; Goodyear and Moore 2018; A. King 2016; Sassaman 2006; Zierden and Reitz 2016).

(3) How do we evaluate which archaeological sites in areas threatened by destruction due to climate change or development should be subject to mitigation?

(4) How do we get the archaeological community in the state to consider regular strategic planning, that addresses research, information management, curation, and publication strategies?

(5) How can we use remote sensing and imaging to maximize our understanding of site locations across the state, and can this process be automated, as has been done with shell ring locations using digital elevation data (e.g., Davis et al. 2018)

(6) How do we make the vast knowledge that has been developed to date on the past occupations of South Carolina more readily accessible through online publishing and public education platforms, and linkages between widely distributed reports and data repositories?

There are many more questions and approaches to consider, of course, but that is best left to full-fledged planning workshops involving the larger professional and avocational community.

Conclusion

At the 1971 Southeastern Archaeological Conference (SEAC), Charles Fairbanks noted that less was known about South Carolina's archaeological record than in perhaps any other state in the Southeast. That this is clearly no longer the case is something for which we can all be grateful. This accomplishment is due, in no small measure, to the central role people promoting archaeological research in the state have played, including the membership of ASSC. As I said a quarter of a century ago, we have much to be proud of about the way archaeology is conducted in South Carolina, but much remains to be done. When the Society celebrates its 75th anniversary, I have no doubt that much of what is suggested here will have come to pass, and new and unexpected discoveries will have occurred. Just as there will be new questions and goals raised, there should also be a fine and diverse community of good people working together to further understand the past of our state.

Acknowledgements and a Personal Note

I must admit to a special fondness and appreciation for South Carolina archaeology and the many people who work here. My wife Jenalee and I maintain a home in Williston, in Barnwell County, where many ASSC members have attended barbecues supporting the Topper site excavations. I call South Carolina my home, even though my work has often taken me elsewhere, and I have lived out of state most of the last 50 years. Although my first fieldwork was in the Southwest, Robert L. Stephenson offered me my first full-time employment in archaeology at SCIAA in 1974, when I was in my mid-20s. I had been introduced to South Carolina archaeology by Jim Michie, who was an early mentor when I joined the ASSC in early 1973, prior to starting work at SCIAA a year later. At SCIAA, I was a research assistant first to Leland Ferguson and subsequently Albert Goodyear in 1974 and 1975. They sent me on to graduate school at the University of Arkansas, where I conducted my MA coursework and thesis writing under the direction of Dan F. Morse and L. Mark Raab from 1975 through 1977. Although I worked in Michigan for the next 10 years in CRM and getting a doctorate, I returned to South Carolina many times since, directing projects on the Southwest Columbia Beltway, at Mattassee Lake, in the Russell Reservoir, and the Francis Marion National Forest. On November 28, 1981 I married Jenalee Muse (who I had met while working at Mattassee Lake in 1979) with many archaeologists attending and Al Goodyear as my best man. While on other projects and attending school much of the time, in the summer of 1985 I was at SCIAA's Savannah River Archaeological Research Program offices and in Columbia, preparing a prehistoric ceramic type collection for the state (still in use to this day and markedly updated and placed online thanks to the efforts of Carl Steen). From mid-1988 to early 1990, thanks to a Department of Energy fellowship and the hospitality of Glen Hanson, I was at the Savannah River Site writing my dissertation on the Mississippian archaeology of the Savannah River Basin, that was ultimately published in 1994. About this time, Jenalee and I acquired our home in Williston that I have commuted to and from ever since. I worked with the National Park Service from 1988 until 2003 traveling and working many parts of the country and the Caribbean. For the last 15 years, I have been employed as a professor at the University of Tennessee. Nevertheless, South Carolina archaeology has always been a primary love. I have sent many students to work as volunteers with Al Goodyear at the Topper site, and in recent years set up my own field program there. Over 100 of my graduate and undergraduate students have worked there, and produced 6 MA theses and 1 PhD dissertation. Many opportunities and people in South Carolina archaeology have thus shaped my career, and for that, I am grateful to have been a small part of that history.

I deeply appreciate the chance to write something for this 50th issue, and thank the editor, Chris Moore, for the opportunity to do so. I also owe thanks to Barbara Heath, Chris Judge, Shane Miller, Robert Morgan, Karen Smith, Carl Steen, Keith Stephenson, and Andy White for their thoughts. The data summarized from *South Carolina Antiquities* is available from the Editor and author upon request. Any responsibility for tabulating errors or for any of the thoughts and comments herein lies solely with me!

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The Second Twenty-Five Years of the Archaeological Society of South Carolina—1993-2018

Christopher Judge and W. Brent Burgin

It seems like only yesterday that the Archaeological Society of South Carolina (ASSC) celebrated its 25th Anniversary with a conference session in the Capstone Building at USC Columbia and, subsequently, the production of a special silver issue of our journal, *South Carolina Antiquities*, produced by guest editor Carl Steen. George Lewis was President of ASSC in 1993, *Jurassic Park* was the blockbuster movie, Bill Clinton was in the Oval Office and Grunge rock was all the rage. Where does the time go? Harder perhaps to believe is that I (Judge) have been asked to pen a history of the second 25 years of the ASSC. I began thinking isn't there anyone older than me to do this? Therefore, I have enlisted our ASSC archivist Brent Burgin to assist me.

Many things have changed since the early days of the ASSC. The curious reader is directed to the following hyperlink to read about the first 25 years in the silver anniversary issue mentioned above. https://docs.google.com/file/d/0B39doCYZMOpuODNwRHdEbjZyQWc/edit

What follows is a series of vignettes, in no particular order, of significant accomplishments during the second 25 years of the ASSC. We start with our journal, *South Carolina Antiquities*, because this is where you are reading our thoughts.

South Carolina Antiquities (SCA): From Black and White to Color

We, the membership, owe a great debt of gratitude to journal editor Natalie Adams, who inherited the office in 2004 when we were behind several years, and she expertly managed to edit and produce the tardy issues and get us back on a timely schedule. Our journal has continued to make improvements in look, printing quality and manner of distribution. Under the last two editors, Drs. Jodi Barnes (past editor) and Christopher Moore (current editor), significant strides have been instituted to the benefit of the membership. A combination of revolving cover design and images, plus the slicker cover have much improved the curb appeal. Inside the pages of the journal, one will find cutting edge archaeology of our state as it provides a professional/public format to share our archaeology. We have been lucky to attract the caliber of editors over the years for our journal. Recent times are no exception.

It is hard to fathom, but SCA Editor Chris Moore tells me he struggles at times to get articles to print. Hey all of you young archaeologists—get yourself published and let us know what you are doing in the field, lab and classroom. You older archaeologists do the same. If not, we will put your face on a Koozie and sell them through Amazon Prime.

40th Anniversary CD: From Hard Copy to Cyberspace

Carl Steen was instrumental in scanning and producing a 40th Anniversary CD of the journal's first four decades. This resource has allowed better access for those both near and far. The journal is also now available with a five-year delay on the ASSC website, promoting a growing trend in archaeology towards open access of resources.

ASSC Website: From Word of Mouth to the World Wide Web

Speaking of the ASSC website, believe it or not, our website was started in 1998 by none other than Wayne Neighbors, long time editor of SCA who took out a second mortgage on his house to fund the First Ten Years volume. We switched to assc.net in 2001, and Bach Pham created the Society's new www.archaeologysc.org which launched in 2017.

Email, Internet, and Social Media: From rotary dialed telephones to Facebook, Twitter, and Instagram

Our methods and manner of communication have all changed dramatically in the last two and a half decades. The first major commercial Internet Service Providers were coming on the scene as we celebrated our 25th Anniversary with AOL launching in 1995. Like past cultures did, the ASSC adopted new technological innovations, while abandoning ones that had been superseded.

Good Years #1: Graduate Student Grant-in-Aid

"The Grant-in-Aid Program was established to assist graduate students in their thesis or dissertation research. Albert C. Goodyear initiated the ASSC Grant-in-Aid Program in the fall of 1991 by soliciting donations for redistribution to graduate students the following year. Funds ranging from several hundred to one thousand dollars are available on a competitive basis to graduate

students, both at USC and out-of-state universities, who are working on theses or dissertations that pertain to the archaeology of South Carolina." (ASSC Website). Also from the ASSC website, *"we are proud to announce that the ASSC has awarded a collective amount of $27,074.32 to twenty-eight students."*

Good Years # 2: Endowment, Fund Raising and Gifts: From Auctions to Wall Street Mutual Funds

> In January of 2017, the ASSC had $27,091, which has grown to $32,125 as of January 2018." (Jan 2018 *Features & Profiles*)

Albert C. Goodyear III could have been a Wall Street investment broker. Luckily for us, he chose archaeology and brought the spirit of public archaeology he learned in Arkansas from Chuck McGimsey and Hester Davis to South Carolina in 1974. Among his many accomplishments and awards, such as an ASSC Life Time Achievement Award, Al has been managing our Money Market Account investments through bull markets and the severe economic declines of bear markets without batting an eyelid. All the while, he reminded us not to worry day to day or month to month about the roller coaster ride of the stock market. (Note: Al also initiated and cultivated a similar effort for the Southeastern Archaeological Conference). The initial capital raised through the now defunct Field Day Auctions has grown to the point where the interest in recent years has been tapped by the Executive Board to support a variety of ASSC goals, while the principal has been left intact. Raising endowments takes dedication, a long-term perspective, and the patience to wait while the fund grows by reinvesting the accrued interest back into the fund. The total return for 2017 was $2,478 or 18.6%.

Scurry Fund for Beaufort and Greenwood Counties

A gift of $5,400 was given in the name of Julia Porter Scurry, by the Julia Porter Scurry Family Foundation in 2013. These funds, designed to be expended in either Beaufort or Greenwood counties, were put to great use by South Carolina Archaeology Public Outreach Division (SCAPOD) Traveling Trunks in conjunction with the Hilton Head Chapter, McKissick Museum's Curation and research on the Ferrell Collection of Edgefield pottery from Greenwood County, the Arkhaios Film Festival, and Diachronic Research Foundation's archaeology at the Bodie site—an Alkaline Glaze Stoneware site in Greenwood County. The Hilton Head Island Chapter of the ASSC also used Scurry Funds for public outreach efforts. This is a good example of the type of tax deductible gift anyone can make to help the ASSC with our stated goal to "share information about South Carolina's archaeological heritage." We are a charitable organization filed with the IRS and the Secretary of State of South Carolina. Consider a gift to the ASSC.

Field Days: From Bell Camp to the 12,000 Year History Park

The ever evolving, ever moving, name changing, signature event is the Archaeology Field Day, to Field Day now Fall Field Day. As I was completing my presidency of ASSC, Chris Moore had been trying to get us to move the Field Day to Aiken as part of the Science Education Enrichment Day (S.E.E.D.) on the USC Aiken Campus. He eventually convinced my successor, President James Stewart, and the ASSC board to do this, and, as I understand it, thousands of visitors attend this event each year. In 2018, the Field Day was held at the 12,000 Year History Park in Cayce, South Carolina. This park is home to numerous archaeological sites, including well-preserved Civil War earthworks and the site of Colonial-era Fort Congaree. The park is located immediately adjacent to the Congaree Creek Heritage Preserve that protects sites all through prehistory from Paleoindian to Mississippian. Preliminary plans are to hold the Fall Field Day here in 2019.

The Annual Conference on SC Archaeology: From Capstone to Gambrell Hall and from Slide Carousels to Animated Power Point Presentations

Perhaps our signature or main event of the calendar year, the conference is a place where forty-year members and first time undergraduate presenters can rub elbows and present their work in a manner that is decipherable to both laypersons and professional alike. ASSC Conference presentations have also included DVDs such as *Discovering Dave: Spirit Captured in Clay* and *Square Holes: Digging the Kolb Site*. Conference presenters have also used animation and video in their paper presentations. In recent years, poster presentations have been included in the conferences as well.

Merch- From Sew on Patches to Koozies

You know you are a famous South Carolina archaeologist when your face is on an attractive and affordable drink Koozie! First to be honored was Carl Steen, followed by Mona Grunden, and now Stan South's image graces our newest ASSC collectable Koozie series. T-shirts and hats have been available from the ASSC for years, but our newest craze happens to be Koozies—Face Koozies that is. Buy 20 of these for $100 for your field crew members and help the ASSC raise a few dollars.

The ASSC Archives: From Librarian to Archivist, From Scary Closet to Temperature and Humidity Controlled Vault

When Meg Gaillard took over the ASSC archives from 2010-2013, we had yet to enter the digital age with regards to the Society's records. Meg changed that for us and deserves credit for pushing us out into cyberspace. After Meg's tenure, the job was taken by W. Brent Burgin,

archivist for the Native Americans Studies Center at the University of South Carolina Lancaster who also is the USC Lancaster campus archivist. This, I must admit, was one of the shrewder moves Judge made as ASSC President. Burgin has won numerous awards during his archival career, including Archaeologist of the Year from the South Carolina Office of State Archaeology and the ASSC. After many years of being housed at SCIAA, first in the basement of Maxcy College and then in the closet in Nena's Rice's office at 1321 Pendleton Street, the monumental move to the USCL NASC archives was accomplished by Brent Burgin, Garrett Smith, and Chris Judge. We wondered out loud if the closet should be considered a superfund site, and were we perhaps eligible for federal funds but time was of the essence. The move places the 50 years of ASSC archives in archival approved containers in a temperature and humidity controlled vault. Not to mention, a professional archivist holds the key.

Features and Profiles: From Mimeograph to Hyperlink

The Society's newsletter, Features and Profiles, has evolved from mimeograph to hyperlink cyber access in just a few short decades. Digital photography and laptop computers allow the ability to produce a very nice newsletter. Gone are the days of cutting and pasting images with scissors and Elmer's glue.

ASSC First Lady, Nena Powell Rice—22 Years of Service

It would be hard to write the last 25 years of ASSC without mentioning the contributions of Nena Rice. Nena served as Treasurer/Secretary in 1986, Treasurer from 1987-2008, as Newsletter Editor from 1988-1991 and has been a member since 1985. In 2018, Nena was bestowed with the ASSC Life Time Achievement Award—the first and only woman to have received the prestigious award. Nena retired from the South Carolina Institute of Archaeology and Anthropology in the summer of 2018 but remains involved with Archaeology Month, and as editor of SCIAA's magazine, *Legacy*. And of course, Nena is still a fixture at all ASSC events.

Field Trips, Workshops, and a Knap-In

ASSC members were specifically invited to join archaeologists at the Johannes Kolb site, near Mechanicsville, South Carolina, on Saturday, March 15, 2008 for the annual public archaeology day. In May of 2015, Sean Taylor and Michael Miller organized a two-day Knap-In at Lynches River County Park. In 2016, an ASSC Workshop—Artifact Photography led by Mount Vernon Lab Director, Karen Price, was organized for us by Brandy Joy.

Chapters—From Charleston and Anderson to Hilton Head and the Foothills

ASSC chapters sprout up, build up, and wane due to the energy of certain individuals. Charleston, long our most active chapter, is no longer active. Martha Zierden, Ron Anthony, and a host of others like Bill Koob, kept it alive for many years. Tony Bennet and Gerry Campbell shepherded a group of avocational archaeologists over near Iva, South Carolina, for many years. Now, our Hilton Head and Foothills chapters keep things moving along the south coast and up in the Piedmont. Hilton Head owes a debt to Margie Tolly, George Stubbs, and Jean F. Guilleux, while Foothills has been very active thanks to the efforts of Lamar and Angie Nelson, Bob Handlesman, and Loraine Fischer. As this issue goes to print, news of a revived Columbia Chapter yet again signals the ever moving and evolving locations of our Chapters.

Communications: From Handbills to Hyperlinks

South Carolina Antiquities is available online:
https://archaeologysc.org/publications/sc-antiquities/

ASSC Website https://archaeologysc.org/

Blog http://archaeologicalsocietyofsouthcarolina.blogspot.com/

Facebook https://www.facebook.com/ArchaeologicalSocietyofSC/

Email archaeologysocietysc@gmail.com

We look forward to what the next 25 years will bring to the Archaeological Society of South Carolina.

A Model for Evaluating the Hypothesized Decline in Basal Width of Triangular Projectile Points through Time.

Christopher Judge

Introduction

One of humankind's greatest innovations occurred when the bow and the arrow came together forming a composite weapon. Both items had been around independently for perhaps millennia prior to that event. Most such innovations peak and wane overtime, but not the bow and arrow. The bow and arrow still captures the imagination of people everywhere, and people still use them to hunt, compete, defend, and, of course, for target practice. I have friends who hunt turkey with modern compound bows, and I have a colleague, Robert Gibbes, who has been hunting deer for almost ten years with wooden bows and stone tipped cane arrows that he has fashioned himself. In September 2018, CNN's series of 32 Amazing Sports Photos titled "What a Shot" included one of a woman at the UNESCO sponsored World Nomad Games held September 2-8th in the town of Cholpon-Ata, located in the Issyk-Kul region of Kyrgyzstan in Central Asia, shooting a bow and arrow with her feet while doing a hand stand. On October 31st, *The Guardian* reported that the election of a new Brazilian President Jair Bolsonaro—a far right nationalist, could lead to the demise of the rainforest dwelling, bow and arrow wielding Yanomami, as he stated a desire to undo laws designed to protect these and other indigenous cultures. Then, in mid-November of 2018, NBC news reported the horrific and sad news that John Chau, a Western missionary, was killed with bows and arrows by Sentinelese tribesmen after he landed on their remote and off limits island between Myanmar and India in the Bay of Bengal. This year was also the year I finished developing a model to evaluate the hypothesized decline in the basal width of triangular arrow points in the Carolinas. Thus I have declared by rogue fiat that 2018 was the year of the bow and arrow.

> Beginning at least as early as A.D. 200 in some areas but intensifying after A.D. 500 over all of the continent south of the boreal forests, there is a reduction in the overall size of projectile points through time… In those areas that show sudden shifts to predominantly small points, such as the Southwest, Plains relatively, Midwest and Southeast, evidence for the atlatl rapidly disappears from the archaeological record (Blitz 1988:133).
>
> Triangular hafted bifaces are commonly associated with the beginnings of the Woodland period and span through the Mississippian to the period of European contact. The size of triangular points decreased over time and is often used as a temporal marker (Grunden et al. 2015).
>
> In the murky and sometimes highly homogenized popular conception of the prehistory of eastern North America, the transition from Archaic atlatl-wielding hunter-gatherers to the bow-using horticulturalists of the Woodland period can be quite confusing (S. Jones 2015:30).

Confusing is an understatement. While a decline in the overall size of projectile points signaling a shift from the use of an atlatl dart to the use of an arrow seems logical, the subsequent decline in arrowhead size over time (once the bow was introduced) has long been recognized, but as yet remains poorly documented and lacking in the realm of explanation. The arrival of bow and arrow technology must have been a watershed event in prehistory; however, its signature evidence and time frame in the southeastern United States have yet to be accurately identified. Nassaney and Cobb (1991:313) have hypothesized about the direction bow and arrow technology entered into the southeast:

> The fact that triangular arrow points are widespread east of the Mississippi valley and small stemmed arrow points are prevalent west of the Mississippi drainage (Kelly 1987:220) suggests that bow technology may have penetrated the Southeast from two independent directions (west and north) with separate historical contexts…. Comparative faunal studies and evidences of violent death in tight chronological contexts could shed light on this hypothesis. In any event, the rapid adoption of this instrument can be intuitively understood from the obvious advantage it would have conferred in

> direct (warfare) and indirect (hunting resources) competition.

Others have hinted at the time frame for the arrival of the bow and arrow into the Southeast. Cabak et al. (1996:79) contend that the Badin, Large Yadkin and Eared Yadkin large triangular types in South Carolina were "supplanted by small triangular arrow point technology by about A.D. 500." The absence of triangular forms at the Kolomoki site in Georgia was suggested for placing the arrival of the bow and arrow in the southeastern United States sometime after A.D. 600 or 700 (Pluckhahn 2003:31). In the *Woodland Period Archaeology of Northern Georgia* volume, an earlier date is mentioned for triangular points:

> Ledbetter et al. (2008) suggest a starting date of 700 B.C. for the Early Woodland. They are clear that the appearance of pottery marks the start of the Early Woodland. Stemmed projectile points are the dominant type at the start of this period, but triangular points appear by 600 B.C. and soon became the dominant form (Espenshade 2008:116).

Whether those points were for darts thrown with an Atlatl or arrows for bows remains unclear.

Along the coast of South Carolina and Georgia, Joseph Caldwell (1952:317) posited that the lack of atlatl weights and the presence of small projectile points in Wilmington assemblages suggested that the bow and arrow appeared in Wilmington times, if not earlier. From Trinkley (1989:78):

> There is a small stemmed projectile point associated with Savannah River Refuge sites. Peterson suggests that "A change from the Savannah River to small stemmed points, a diminution basically, could occur during Refuge" (Peterson 1971:159). Oliver (1985:207) asserts" The Swannanoa Stemmed type, which appears to be a lineal descendant of the Gypsy stemmed [which evolved from the Small Savannah River stemmed], represents the terminal expression of the Piedmont Tradition of lithic manufacture. In both the Piedmont and Blue Ridge provinces, a continuum of triangular point manufacture begins after the initial appearance of triangular points during the early ceramic period. Stemmed points are no longer present, and technological discontinuity is evinced stratigraphically.

In the festschrift for Joffre Coe, Billy Oliver saluted his mentor when he wrote, "It cannot be stated with certainty that there is a one-to-one correspondence of triangular points and the use of the bow and arrow." He pointed out the "stratigraphic evolution of small triangular points from larger forms" and noted the "absence of atlatl weights and stemmed points after the appearance of triangular points in the Northeast and Arctic" (Oliver 1985:209). He followed this with:

> These observations suggest that points of the Piedmont Tradition and triangular points represent different but co-occurring technologies within the same stratigraphic contexts in North Carolina, that the Piedmont tradition terminates during the early ceramic period, and that the introduction of triangular points begins a new continuum of development (Oliver 1985:209).

James Stoltman took a stab at it when he suggested the following from the lower Savannah River:

> Accordingly, it is here suggested that at Groton Plantation what we have called large triangular points are associated with the Wilmington phase (with the remnants of the stemmed point tradition perhaps surviving in some instances; see page 183) and persist into the Savannah I phase, where they gradually give way to the small triangular points that alone survive into subsequent phases (Stoltman 1974: 223).

The question I am posing in this paper is, can we identify the pace of this decline and use it to develop chronological sequences? Some colleagues have wisely questioned the validity of the basal width decline for triangular points, such as Chris Espenshade (2008:140) who wrote:

> The Late Woodland yields predominantly triangular points. In theory these points grew smaller through time from Swift Creek/Napier through Woodstock. In actuality, that level of clarity is absent, and there is much variability among Late Woodland and Mississippian triangular points.

In illustrating this assertion, Espenshade's Figure 48 exhibits large Late Woodland triangular points, smaller Mississippian triangular points and Jacks Reef Corner-Notched points (Espenshade 2008:141).

Jane McManus' analysis of triangular projectile points

from the Forbush Creek site in the Yadkin River drainage of North Carolina left her in doubt as well:

> This analysis suggests that small triangular projectile points decreased in size between the Late Woodland and Protohistoric periods; however, there is too much variability in triangular projectile point size during the Protohistoric and Historic periods to use projectile point size as a criterion for chronological identification (McManus 1986:38).

While heeding to the caution provided by my respected colleagues, I herein provide some evidence in favor of the basal width decline. The model I present here is for the decline in basal width of triangular projectile points over time from the Early Woodland through the Mississippian and into the historic era and has been developed from my review of previous literature, empirical observations, and comparisons to a database of over four thousand recorded triangular point measurements from Virginia to Florida. Most of the database is made up of triangular points from sites in North and South Carolina.

Southeastern archaeologists have advanced the decline in size theory for over 50 years (Coe 1964; Wauchope 1966:161-163; Stoltman 1974:221; Keel 1976; Rudolph and Hally 1985:287-289; Blanton et al. 1986:107-110; Judge and Wetmore 1988; Sassaman et al. 1990; Cooper 2014, 2017; Grunden et al. 2015; S. Jones 2015), with only a few attempts made to provide statistically valid data to support such a contention. For a synthesis of previous research and attempts to resolve the issue using datasets from the Savannah River, see Sassaman et al. 1990: 164-168 and Sassaman et al. 1993:175-178. Based on a study of 99 points from Rucker's Bottom in Georgia (Anderson n.d.) and 91 triangular points from 40 sites on the Savannah River Site (SRS) in Aiken and Barnwell counties, South Carolina, Sassaman et al. (1990:168) established a threshold between Mississippian and Late Woodland points at 18mm basal width based on a "slight bimodality" in the data analysis:

> Until large scale block excavations expose feature contexts or horizontal stratification of Mississippian and Late Woodland components, independent empirical support of the apparent metric bimodality of small triangulars will remain elusive (Sassaman et al. 1990:168).

They refer to points greater than 18mm as "broad" and specimens under 18mm as "narrow." John Whatley described this research in the following passages:

> Work at the Savannah River Site in South Carolina and the Russell Reservoir led to an hypothesis or "rule of thumb" that the width of Late Woodland Triangular points was greater than 18 mm while the width of Mississippian Triangular points was less than that figure (the threshold range is actually between 17 and 20mm) (Sassaman et al. 1990:167-168). Points illustrated from the Savannah River Site with base widths greater than 18 mm (Sassaman et al. 1990:165) show a length range of (roughly) 22-53 mm and a width range of (roughly) 18-21 mm (Whatley 2002:64).

More recently, Jessica Cooper of the Savannah River Archaeological Research Program (SRARP) has been exploring the basal width of Yadkin Large Triangular Points and Eared Yadkin Points as keys to identifying the arrival of bow and arrow technology in the Carolinas and Georgia (Cooper 2014; Cooper, personal communication 2016; Cooper 2017). Her 2014 study included 369 Mississippian and Woodland triangular points from South Carolina and Georgia. The role of the type known broadly as "Stemmed Woodland" also holds evidence for the declining use of the atlatl and its dart and the adoption of the bow and its arrow (Cooper 2017).

The Triangular Point Basal Width Decline Model

Understanding triangular arrowheads is one aspect of my frustrating attempts over the last 10 years to understand the Woodland period in South Carolina east of the Savannah River valley. Conducting synthetic research was and is part of ongoing efforts to understand the numerous Woodland components excavated from the Johannes Kolb site on the Great Pee Dee River near Darlington, South Carolina. I first tackled the question of what extent did maize figured in Woodland subsistence. Very little in fact, but it has been published, nonetheless, in *South Carolina Antiquities Volume* 48. In the future I intend to tackle polished stone gorgets, smoking pipes, and will assemble a table of all Woodland Period C-14 dates in South Carolina.

My current project involves triangular arrow points. Since my earliest days in Southeastern archaeology, I was told that the size of triangular-shaped arrowheads declined over time. Initially, I thought this referred to blade length, but Carl Steen put me on the right track that it was actually the basal width that supposedly shrunk. Embarrassed by my misstep, I decided I would look to see all that was known about this long-held notion in Southeastern archaeology and determine what else I might not have exactly correct. A search revealed surprising results, as very little had been accomplished beyond empirical speculation. [One exception is work in the Virginia Piedmont by Clarence Geier (Geier 1983)]. It had been told to me as if it was

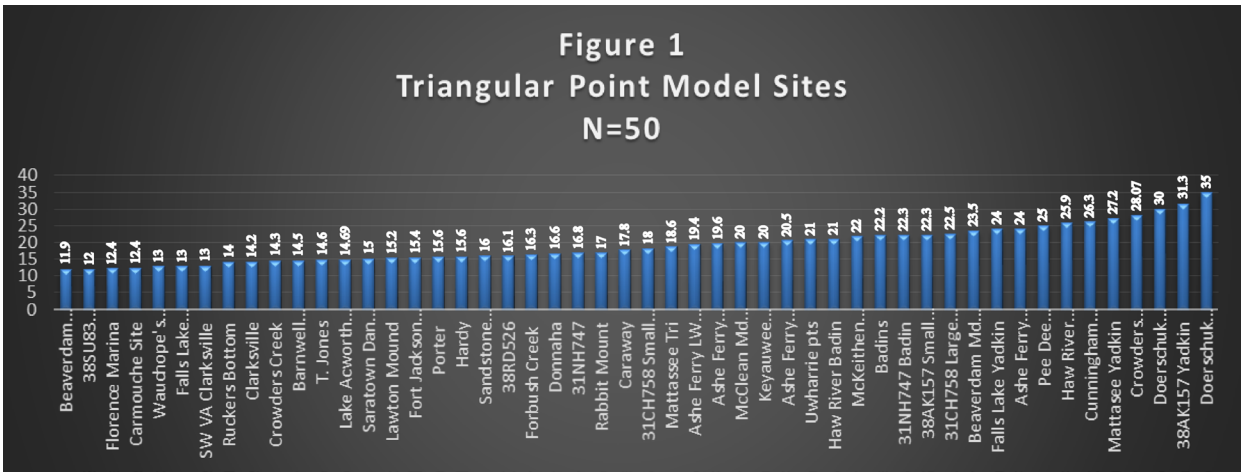

Figure 1. Triangular point basal width decline sites. Median basal width in mm (n=50).

a factual phenomenon, or at least that was how I came to understand this myth. So I set out to test this theory for my own purposes regards comparative datasets to compare to the Kolb Site assemblage and other nearby sites in the Pee Dee.

Beginning in 2008, I began to collect metric data on triangular arrow points in South Carolina; then, expanding my search to neighboring North Carolina and Georgia ,where the bulk of my data comes from. I have a few entries from Virginia, Florida and Tennessee. Currently, the database has over 4,000 points from 135 archaeological sites.

The model I present here is for the decline in basal width of triangular projectile points over time from the Early Woodland through the Mississippian periods and into the historic era and has been developed from my review of previous literature, empirical observations, and comparisons to a database. Initially, a small pilot study was conducted with 38 selections from my database for comparative purposes in the process of constructing this model. Further refinement of my model was accomplished by adding 12 additional sites to the pilot study for a sample study of 50 (Figure 1). The hypothesis proposed herein for use with the Kolb site (38DA75) and Savannah Edge site (38DA105) assemblages, based on the data in Figure 2, suggests that with each of three transitions—Early to Middle Woodland, Middle to Late Woodland, and Late Woodland to Mississippian—mean basal width decreased by an average of 5mm (Figure 3). While these are rather arbitrary pigeon-holed divisions, tantalizing evidence to support this model seems to be present.

The multi-component Johannes Kolb site, discovered by Chip Helms in the 1970s, is located on the Great Pee Dee River Heritage Preserve in Darlington County, South Carolina (Steen et al. 2016). Systematic 50cm shovel testing, 2m test squares and limited block excavations were conducted at the Kolb site for two weeks per year between 1997 and 2016 (except for 2014 when flooding blocked access to the site). The nearby Savannah Edge site (38DA105) was also discovered by Chip Helms in the 1970s and it is located partially on the Great Pee Dee River Heritage Preserve, with the balance of the site located on an adjacent private property in Darlington County, South Carolina. Survey and testing excavations were conducted at the site in March 2014 by Sean G. Taylor, Christopher Judge, and Carl Steen (Steen n.d.).

Testing of my model should produce more accurate basal width dimension ranges. It is hoped that if this experiment is successful, it can be used to provide tighter chronological controls for sites in the Great Pee Dee River Valley including but not limited to Kolb (38DA75), Savannah Edge (38DA105), Dunlap (38DA66), and Rogers (38DA45), where copious numbers of triangular points have been recovered by archaeological investigations (Figure 2). Perhaps the model could have a wider utility as well.

Triangular Point Decline Model Building

> In the Southeast, however, fundamental changes in projectile point morphology take place in the early Woodland period that have long troubled archaeologists (Jones 2015:30).

Previous researchers have identified a wide variety of small triangular points across the region. Figure 3 exhibits the range in size from the Kolb Site (Figure 3). At the Dunlap site (38DA66) located 15 miles (24k) upriver from the Johannes Kolb and Savannah Edge sites, Michael Harmon identified four triangular projectile point "Groups" (denoted as G1-G4) that seem to be similar to points defined in the region as Pee Dee, Uwharrie, and Caraway; and, he focused on the stratigraphic distribution of these points in two test squares (Harmon n.d.). At 38SU83, Blanton et al. (1986:109) identified three triangular types (Groups 1-3) and noted similarities to Clarksville, Pee Dee/Caraway and Yadkin respectively. At

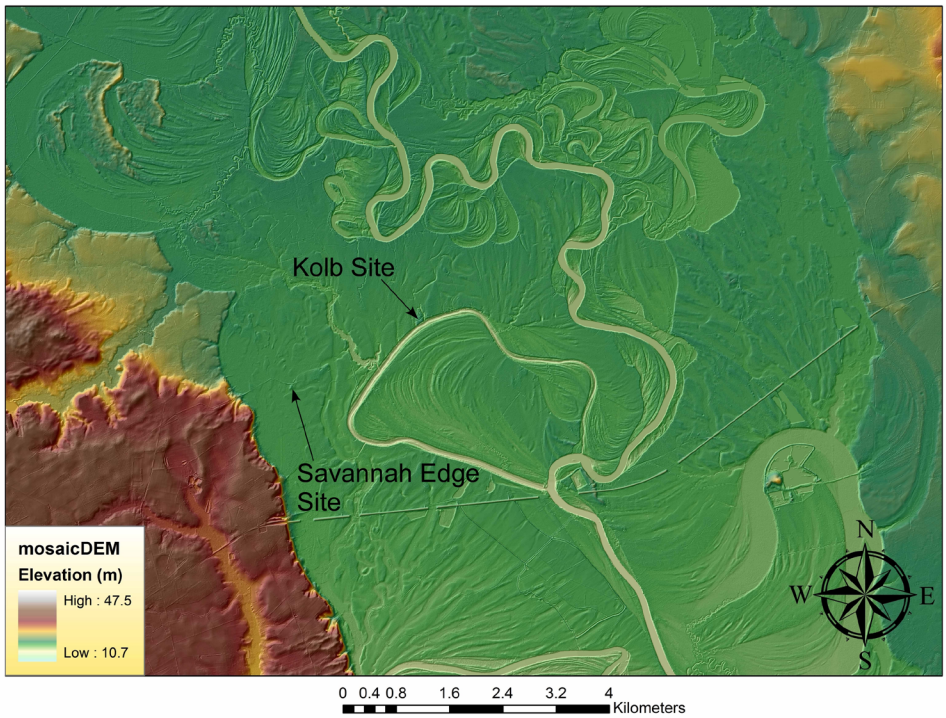

Figure 2. The Johannes Kolb and Savannah Edge sites along the Great Pee Dee River, Darlington, South Carolina.

38SU83, Group 1 points (Clarksville) averaging 12mm in basal width (n=9) and 17mm length (N=4) with a length/width ratio of 1.46 were confined to Level 1 and attributed to the Pee Dee occupation and were compared to the Clarksville type from the Gaston site (Coe 1964:118).

Slightly further afield on the Neuse River, Wetmore identified three triangular point groups from 31DH234—Groups I-III. Group I is equated with the Clarksville type from the Gaston site where median length of 14.0 mm, median width 15.0 mm and length/width ration 1:8 were found (Judge and Wetmore 1988:69). Group III at 31Dh234 was equated with the Dan River type reported from Saratown by Ernest Lewis (1951:265) as having a mean length of 27.0mm, a mean width of 15.0mm, and a length/width ratio of 1:8. Sorting out the numerous triangular point types is a goal for this project.

Another lingering question is the age and cultural affiliation of the Pee Dee Pentagonal (and other pentagonal shaped projectile points) defined by Coe as a "carelessly made" point (Coe 1964:49). I recently asked Tony Boudreaux if he thought the Pee Dee Pentagonal could be associated with the Yadkin occupation at Town Creek. He stated, "An association between the pentagonal points and the Yadkin occupation is plausible. It should be testable there as well" (Tony Boudreaux, personal communication 2017). The Pentagonal Points from my database are expressed in Figure 4.

Coe also defined the "Yadkin Eccentric" as another pentagonal point form (Coe 1995:200). Pee Dee Pentagonal points have been recovered at the Kolb site yet their chronological position there is questionable at present. While Coe places them late in the prehistoric sequence in the Piedmont of North Carolina, they possibly occur earlier in South Carolina and Georgia. McNeil in Thomas (2008:611) reports on a Jack's Reef Pentagonal from St. Catherines Island, Georgia from limited testing of site 9LI177 with "mostly" Irene ceramics.

In the Midlands of South Carolina, Pentagonal Points are found in Middle Woodland contexts at two sites in the Congaree Creek drainage of Lexington County, South Carolina. Lisa O'Steen (2003) reports on a Pee Dee Pentagonal from the Manning site (38LX50) found with Middle Woodland ceramics, and Steen and Judge (2003:56-57) report on a Pee Dee Pentagonal from the base of the Deptford period midden at the Sandstone Ledge Rockshelter (38LX283). These researchers proposed disturbances for these seemingly later points excavated from earlier contexts. Conversely, these could be Middle Woodland period pentagonal points in convincible contexts. Stemmed Woodland points, dubbed "Deptford Points" by Trinkley, were found at 38LX5 near the Manning site in association with Deptford pottery and an uncorrected date of 2660 B.P. (Trinkley 1980).

Carl Steen recovered similar stemmed points he referred to as Thelma at the Godley site (38LX141) near Congaree Creek, along with three triangular points (Steen 1991). There, the pottery recovered included Thoms Creek, as well as simple stamped, brushed, cord and fabric impressed wares as well as Adamson phase Mississippian (Steen 1991:38-39). Therefore, basal widths of 25mm for the Pee Dee Pentagonal defined by Joffre Coe as "Protohistoric" (1964:49) would support an earlier time

Table 1. Triangular point database for basal width decline model (n=50 Sites).

#	Site/Type	Mean	State	SOURCE	NOTES
1	Beaverdam Mound	11.9	GA	Rudolph and Hally 1985	Eliminated Type VI
2	38SU83	12	SC	Blanton et al. 1986:105	
3	Florence Marina	12.4	GA	Ledbetter and Braley 1989	
4	Carmouche Site	12.4	GA	Gresham et al. 1985	
5	Wauchope Very Sm.Tri	13	GA	Wauchope 1966:161-162	
6	Falls Lake Clarksville	13	NC	Judge and Wetmore 1988	
7	SW Virginia Clarksville	13	VA	Holland 1970	
8	Ruckers Bottom	14	GA	Anderson & Schuldenrein 1985	
9	Clarksville	14.2		Judge database	
10	Crowders Cr. RC1350AD	14.3	NC	May 1989:31-32 Fea 12/13	N=12 zoomor pipe
11	Pen Branch	14.5	SC	Martin et al. 1985	
12	T. Jones	14.6	NC	Woodall 2009:42	N=54
13	Lake Acworth Madison	14.69	GA	Cable and Raymer 1991	
14	Saratown Dan River	15	NC	Lewis 1951:265	
15	Lawton Mound	15.2	SC	Stephenson 2011	
16	Fort Jackson Triangular	15.4	SC	Steen and Braley 1992:359	
17	Porter	15.6	NC	Woodall 2009:42	N=119
18	Hardy	15.6	NC	Woodall 2009:42	N=52
19	Sandstone Ledge	16	SC	Steen and Judge 2003	
20	38RD526	16.1	SC	Clement et al. 2002:81	
24	Rabbit Mount	16.3	SC	Stoltman 1974:115	N=7 Irene/Etowah/Sav II
23	Barnards Cr. 31NH747	16.8	NC	Moser et al. 2009	
24	Caraway	17.8	NC	Coe 1964:49	
25	31CH758 Sm. Tri	18	SC	Bamann & Bradley 2009:73	
26	Mattassee Sm Tri	18.6	SC	Anderson et al. 1982	
27	Forbush Creek Tri	19.07	NC	McManus 1986:35	N=11 comb 6 type
28	38AK157 Sm. Tri	19.1	SC	Sassaman et al. 1993:117	N=27
29	Ashe Ferry LW Tri	19.4	SC	Riggs et al. 2015	A.D. 1010–1160
30	Ashe Ferry Miss Tri	19.6	SC	Riggs et al. 2015	
31	McClean Md. Caraway	20	NC	Irwin et al. 1999:72	C14=AD 1028
32	Keyuawee Caraway	20	NC	Coe 1964:49	No range given
33	Ashe Ferry Pentagonal	20.5	SC	Riggs et al. 2015	
34	Uwharrie Pts	21		Judge database	
35	Haw River Badin	21	NC	Claggett and Cable 1982	
36	McKeithen Weeden 10	22	FL	Milanich et al. 1997	Type 10 point
37	Badins	22.2		Judge database	
38	31NH747 Badin	22.3	NC	Moser et al. 2009	
39	31CH758 Large Tri	22.5	SC	Bamann & Bradley 2009:73	
40	Beaverdam Wood Tri	23.5	GA	Rudolph and Hally 1985	
41	Falls Lake Yadkin	24	NC	Judge and Wetmore 1988	
42	Ashe Ferry Yadkin	24	SC	Riggs et al. 2015	
43	Pee Dee Pentagonal	25	NC	Coe 1964:49	
44	Haw River Yadkin	25.9	NC	Claggett and Cable 1982	
45	Cunningham Mound C	26.3	GA	McNeil 2008:611	
46	Mattasee Yadkin	27.2	SC	Anderson et al. 1982	
47	Crowders Creek Lar Tri	28.07	NC	May 1989	Large Triangular
48	Doerschuk Yadkin	30	NC	Coe 1964:45	
49	38AK157 Yadkin	31.3	SC	Sassaman et al. 1993	
50	Doerschuk Badin	35	NC	Coe 1964:45	

frame if the mean widths outlined in Figure 2 and Table 1 prove reliable. Interestingly, Pee Dee Pentagonal points are defined largely from Town Creek Indian Mound, where over 10,000 Pentagonal points were recovered.

At the Lake Acworth site (9CO45), Cable and Raymer (1991:147) identified six "relatively large, crude, pentagonal-shaped points with excurvate blades and concave bases." These points are described as having a mean length of 29.50, a mean width of 20.90mm, and a mean thickness of 7.50mm. Four of the six were made of quartz, at a site dominated by chert, prompting Cable to suggest that this unidentified pentagonal point type was pre-Mississippian, and I am in agreement with his assessment. Keel (1976:133) defined a South Appalachian Pentagonal with a mean width of 20.2mm that he associated with the Connestee assemblage at the Garden Creek sites. Collection of additional metric data on the various pentagonal projectile point forms in the Eastern United States should refine the chronology of this wide ranging form.

Figure 3. Range of Triangular Point size from the Kolb Site.

The next problem, after sorting out Late Prehistoric triangular projectile point types, is figuring out when Woodland period forms segue into Mississippian and when Mississippian period forms segue into Protohistoric types. Previous work by Sassaman et al. (1990, 1993), Anderson (n.d.), and Cooper (2014, 2017) have established thresholds between Woodland triangular points and Mississippian triangular pointswidths at 18mm (Sassaman et al. 1990,1993), 17mm (Cooper 2014) and ranging from 17 to 20mm (Sassaman et al. 1990:168). Sassaman et al. lamented in 1993, that the data on small triangular points from 38AK157 "are inconclusive, and therefore of little utility in evaluating the validity of basal width as a temporal attribute" (Sassaman et al. 1993:177).

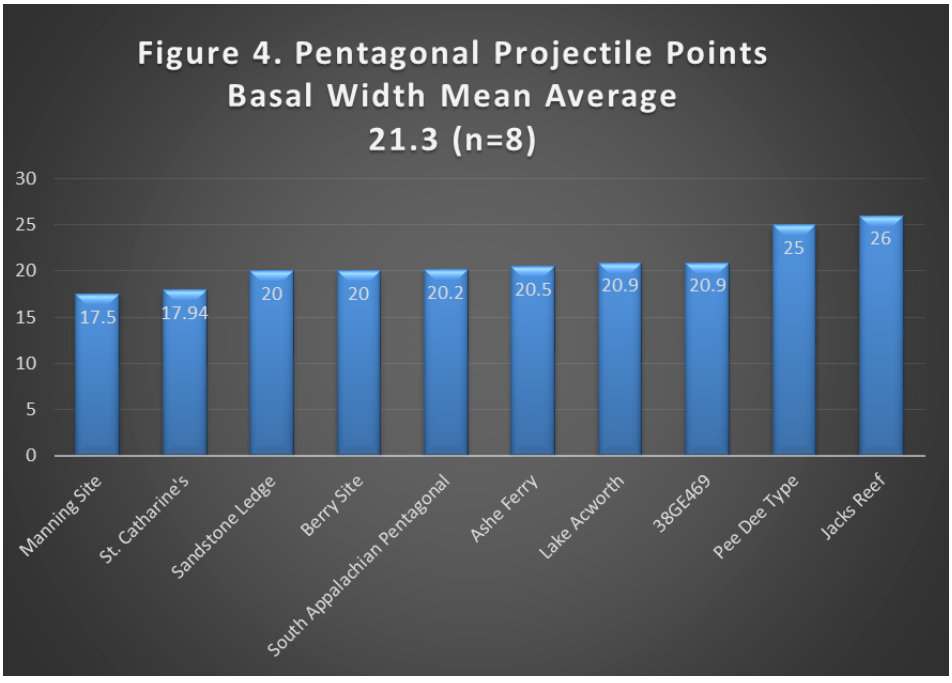

Figure 4. Pentagonal projectile points. Basal width mean average 21.3 (n=8).

In looking at these data more closely, it appears that these thresholds may instead place the points well within the Late Woodland rather than as transitional (Figure 2). With our current knowledge of the Late Woodland period in South Carolina characterized generously as sparse at best, compared to other periods, and faced with thousands upon thousands of pottery sherds to sort, analyze, and classify from the Kolb site (with all known types represented in a least small numbers from Stallings Island fiber-tempered through 17th-century complicated stamped, tweaking out temporal differences in shape, width, length, thickness, and weight of the hundreds of triangular projectile points to gain finer chronological controls (not to mention sorting out Stemmed Woodland points and Pentagonals), may be a less daunting task and offers a fruitful avenue for further research.

For the pilot study, no effort has been made to sort out information beyond that reported by investigators in the literature. Three exceptions were made to this rule. One exception is from Beaverdam Mound (9EB85), where I have eliminated Rudolph and Hally's (1985) "Type VI" as it is a preform rather than a finished point type and I also combined their remaining six types and expressed it in Figure 1 as one averaged value. A third exception to the rule is that I have combined the six Forbush Creek triangular types and expressed them as a single value in Figure 1 (McManus 1985). When fine-tuning the model these will all be expressed as individual values rather than lumped together.

Issues identified in the evenness of the data available for the pilot study are numerous and will be addressed in the next phase of this research. For example, the number of points for each value ranges from a handfull to

Table 2. Stratigraphic test of basal width model using Triangular points from data recovery at 38FL425, Lynches River (Grunden et al. 2016:139-140).

Zone	Depth cm	Basal width	Basal Avg. by zone	Cat Number	Notes
Surface	0	18		195.1.1	
Plowzone	0-10	18		234.1.1	
Plowzone	10-20	18		255.2.3	Concave base
Plowzone	18-25	15	Surf./PZ=17.25mm	535.1.1	
Zone II	40-50	19		77.5.25	
Zone II	45-54	-	Zone II= 19mm	501.1.1	
Subsoil	54-60	-		500.2.2	
"	61-73	23		509.2.4	
"	73-91	20	Subsoil= 21.5mm	508.3.7	Concave base
Total mm		131			
N=7			131/7=18.7mm		

several hundred. Second, scholars appear to have lumped Mississippian and Late Woodland triangular points together under names such as Mississippian Triangulars (i.e. Small, Medium, and Large), Caraway Triangular, Madison, Clarksville ,etc. An example is that two "Caraway Triangular Point" entries in the database fall in the range of the threshold for the Mississippian/Woodland as defined by Anderson (n.d.), Sassaman et al. (1990), and Cooper (2014). Like the "Mississippian Triangular", the "Caraway Triangular Point" may also be a skewed category whose mean value in Figure 1 is produced by lumping random triangular projectile points together from various time frames.

A Stratigraphic Test of the Model

Using data from 38FL425, I construct a stratigraphic profile of triangular points in Table 2. [Note: This exercise is my own and the excavator/authors should not be held responsible for any errors I might make]. The average basal width of the four triangular points from surface and plowzone contexts is 17.25mm, the single triangular point from Zone II is 19mm, and the average of the two subsoil triangular points is 21.5mm indicating an increase in basal width with depth. This, combine with ceramic assemblage from the site led the excavators to consider it a multi-component site beginning in the Early Archaic "with occupation peaking in the Early Woodland period. Visits to the site continued into the Middle Woodland and gradually tapered off, leaving very little evidence for Mississippian occupation "(Grunden et al. 2016:195). The decline model would reflect 1 Mississippian/Other Late Prehistoric point, 5 Late Woodland triangular points, and 1 Middle Woodland triangular point at 38FL425. Thus, I need more evidence from stratigraphic contexts to fully support the model.

From 2,377 excavated sherds at 38FL425, only 10 were potentially Mississippian (2 complicated stamped and 8 burnished), and 80% were recovered from Zone I (Grunden et al. 2016:97). Therefore, it is not too surprising that triangular point basal medians begin at 15mm and range to 23mm at 38FL425.

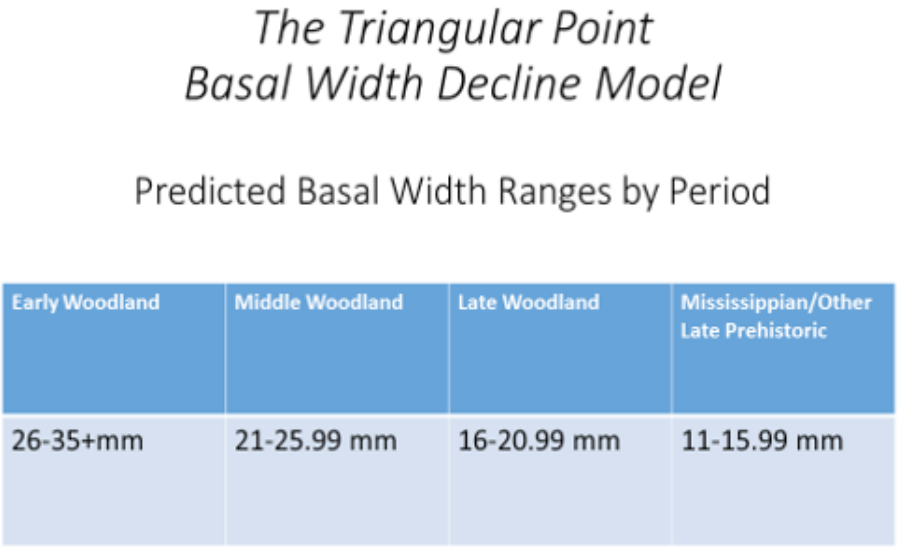

Figure 5. The Triangular Point basal width decline model. Predicted base width ranges by period.

Triangular Point Basal Width Decline Model Discussion

The model constructed appears to document a decline over time in basal width of triangular points across the Carolinas and Georgia (Figure 5). In particular, it details well the progression of the Triangular Tradition of the Carolina Piedmont—Badin, Yadkin, Uwharrie, Caraway and Clarksville (Coe 1964; Oliver 1985:210), and its geographic proximity to the Great Pee Dee River sites should prove useful for application to those projectile

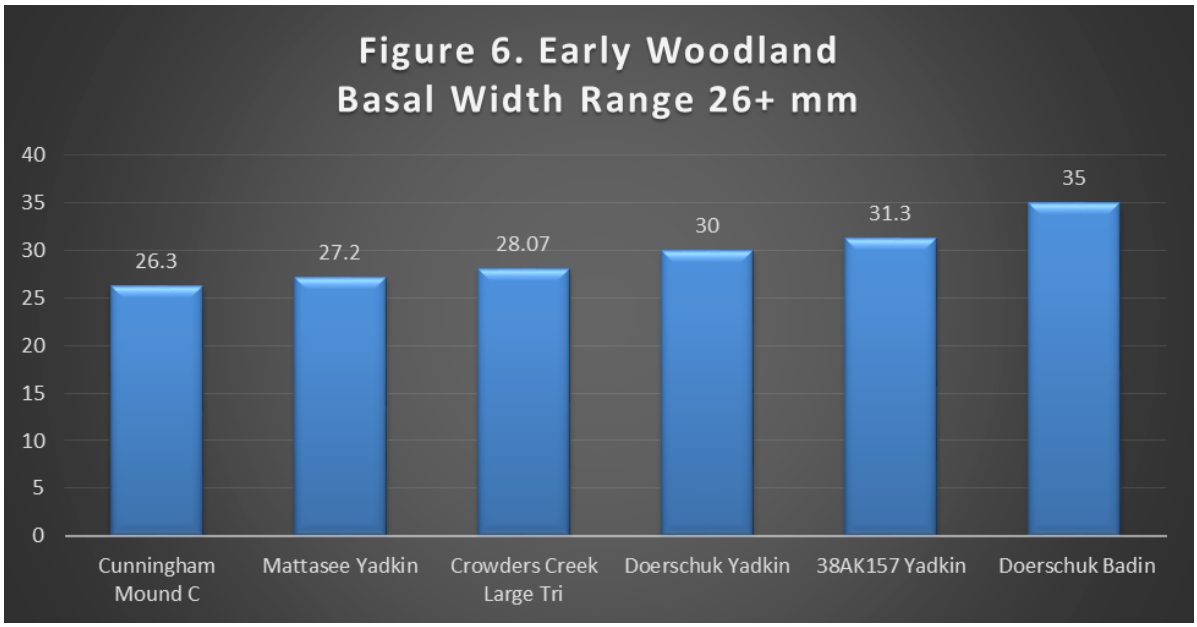

Figure 6. Early Woodland basal width range 26+ mm.

point assemblages. In the following section, I discuss each of the four time periods in the model and the data supporting each.

The Basal Width Decline Model

EARLY WOODLAND 26mm+

Two triangular point types seemingly are associated with the Early Woodland—Badin and Yadkin (Coe 1964). Some claim, rightfully so I think, that the Badin point is a preform for a Yadkin point (Sassaman et al. 1990:164). Badin mean width in the model occurs at the upper and lower end of the Yadkin mean width (Figure 6 and Table 3). Both Badin and Yadkin ceramics occur together in excavated contexts, and the two point types also seem to co-occur. Two sets of Badins were used in the model. The first is from Coe's Doerschuk site work, and the other is 31DH234 from the assembled point database. The triangular-shaped Yadkin point is represented in the database from five sites, and the width mean ranges from 24mm to 31.3mm. The sites are 31DH234 at Falls Lake (Judge and Wetmore 1988), the Haw River Sites (Claggett and Cable 1982), the Mattassee Lake Sites (Anderson et al. 1982); the Doerschuk site (Coe 1964), and site 38AK157 (Sassaman et al. 1993). The Garden Creek Triangular point defined by Keel (1976:130-131) at 24.3mm width mean would fall outside the width range for Early Woodland in this category and he thought these points were equated with Late Pigeon and Early Connestee periods. The Levanna type from the Middle Atlantic and Northeastern U.S. with basal mean circa 29mm would seemingly fit this Early Woodland width range.(Ritchie 1971).

MIDDLE WOODLAND 21-25.99 mm

Large triangular points seem to persist into the first part of the Middle Woodland period (Figure 7). Refuge phase components at 38AK157 produced a variety of stemmed and notched forms, while Deptford components are associated with Yadkin points, and small triangular points are associated with Deptford and cord marked pottery (Sassaman et al. 1993:119-127). Other site assemblages falling in the Middle Woodland category include "Large Triangulars" from 31CH758 and the "Woodland Triangular" type from the Beaverdam Mound site along the Savannah River (Rudolph and Hally 1985). Whatley's (2002:64) "Late Woodland Triangular fits here as well at 23.1. However eliminating his Gilmer County data his "Late Woodland Triangular" median is 20.3mm from Burke, Richmond and Telfair county points.

LATE WOODLAND 16-20.99 mm

> Third, the South Mini block [38AK157] yielded a small sample of Late Woodland pottery that includes cordmarked sherds and two rectilinear complicated stamped sherds of uncertain affiliation. Associated with these sherds in the plowzone were a large number of small triangular points. This small assemblage is significant for being the only well-delineated and isolated Late Woodland assemblage from excavated contexts at the site (Sassaman et al. 1993:103).
>
> Two other examples of complicated stamped pottery are noteworthy. Distinct rectilinear designs are

Figure 7. Middle Woodland baseal width range 21-25.99 mm.

observed on two isolated sherds from the Mini Block in the South Area. One resembles the narrow version of Pisgah Rectilinear Design A (Dickens 1976:172-183) in decoration, but not in vessel form (Figure 56b). The second is from a shouldered vessel with similar design elements, but distinct right angles in the lands (Figure 56e). The pastes of these sherds are different, suggestive of distinct clay sources. The solicited opinions of area archaeologists (David Anderson, David Hally, Adam King, Dean Wood, Mark Williams) concerning the temporal placement of these sherds diverged widely. Estimates ranging from Middle Woodland to Mississippian were offered, and no consensus was achieved. Based on the context of these finds—in an isolated area containing cordmarked sherds, small triangular points, and generally lacking diagnostic Middle Woodland artifacts—we suggest that the sherds date to the Late Woodland period, circa A.D. 500-1000. Similar materials were not recovered from the major excavation blocks (Sassaman et al. 1993:125).

Ward and Davis (1999:100) have pointed to the Uwharrie Phase as "the earliest Late Woodland phase defined in the Piedmont" of North Carolina. The phase is defined from collections recovered at the Doerschuk, Keyuawee, and Lowders Ferry sites. As if true to form, Keyuawee Caraway points (20mm) and Uwharrie triangular points (21mm) fall in the upper Late Woodland range

Table 3. Mean basal width of Badin Points (presumed preforms).

SITE/TYPE	BASAL MEAN	STATE	#	SOURCE	NOTES
Haw River Badin	21	NC	1	Claggett and Cable 1982	
Badins	22.2		2	Judge database	
31NH747 Badin	22.3	NC	3	Moser et al	
38LA64 Badin	24.1	SC	4	Wells 2017	n=2
38GE469	25.7	AC	5	Clement et al 2001:5	
Stoneboro Badin	27.13	SC	6	Judge 2017	n=3
Doerschuk Badin	35	NC	7	Coe 1964	
TOTAL	**177.43**		**n=7**		
Mean w/Doerschuk	25.28		n=7		177.43/7=25.34
Mean wo/Doerschuk	23.34		n=6		142.43/6=23.78

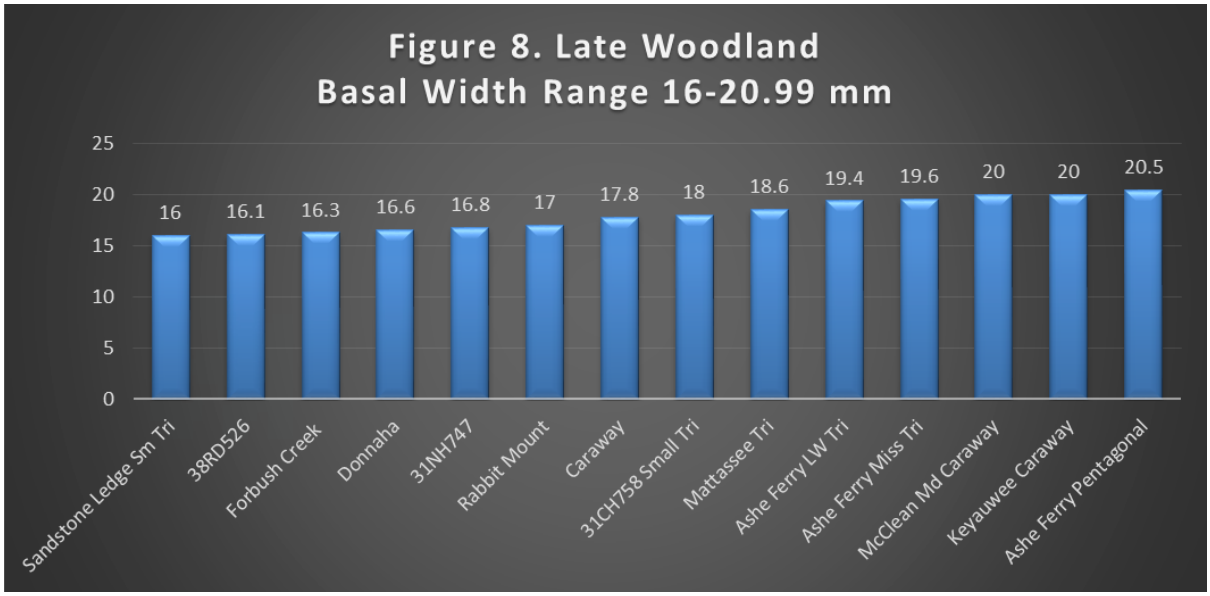

Figure 8. Late Woodland basal width range 16-20.99 mm.

(Figure 8). The end of the period is dominated by a series of sites in the Great Bend region of the Yadkin River excavated by J. Ned Woodall and his students from Wake Forest University, including Donnaha, Porter and Hardy. At the Forbush Creek site, also on the Yadkin River, the combination of six triangular types with a median range from 17.43-20.63mm produces a median of 19.06. On the Santee River at the Mattassee Lakes sites, Anderson et al. 1982 report triangular basal widths (median 18.6mm) in the middle of the Late Woodland range. At the Rabbit Mount site, located along the Savannah River on Groton Plantation, small triangular arrow points range from 25-31 in length with a mean of 26.8, range from 15-19 in width with a mean of 16.3 and range from 3-6mm in thickness with a mean of 4.3 (Stoltman 1974:115). He defines these as associated with the Savannah II and Temple Mound phases, and he associated large triangular arrow points with the Wilmington phase. [While Stoltman (1974) used length as his main point size criteria, I have used his reported basal widths in the decline model].

> Caraway points are normally straight-sided isosceles triangles that averaged 30 mm in length and 20 mm in width. Bases are either straight or slightly concave. This point type was first described by Coe (1937) on the basis of 665 specimens collected during the excavation of Keyauwee Town. While the remaining triangular points from 38FL249 did not all fit the morphological description provided by Coe (1964), they were all categorized as Caraway. Unfortunately, there has been little work in the way of providing solid typologies for the variety of small triangular points. However, table 18 provides a rough morphology of triangular blade types divided by equilateral and isosceles forms, straight, incurvate, or excurvate blade edges, and incurvate, straight, or excurvate bases. Of the 23 triangular points, the most common morphological type is an isosceles point with straight blades and a straight base (N=7 or 30.4%). Isosceles forms outnumbered equilateral forms, consisting of 87.0% of the collection (Trinkley 1993:108).

Rather interestingly, Caraway points of circa 19.07-20 mm basal widths are associated with four sites that have produced Woodland platform and/or monitor type pipes—Keyauwee, Gaston, McLean Mound and Ashe Ferry. Incised platform pipe fragments made of clay are reported from the Deptford site 9CH2 (DePratter 1991:150) and two other sand burial mound sites 9CH18 and 9CH19 in Chatham County, Georgia.

<u>Mississippian/Other Late Prehistoric Societies 11-15.99mm</u>

This category has multiple facets. In the Piedmont of North Carolina and across South Carolina after 1,000 years ago, not all societies adapted the Mississippian manner of life. Following Eric Jones, and others use of the term "non-hierarchical societies", such as the Piedmont Village Tradition, lived contemporaneously and in close proximity with Hierarchical Mississippian polities (E. Jones 2015; Ward and Davis 1999). Thus, this category employees the "Other Late Prehistoric Societies" nomenclature to capture

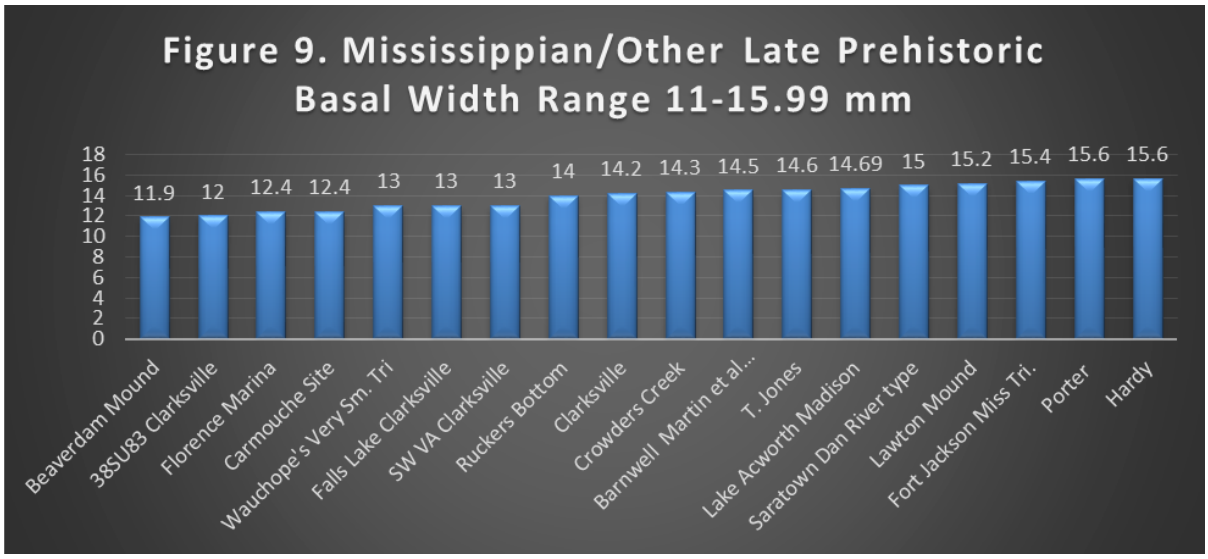

Figure 9. Mississippian/Other late prehistoric basal width range 11-15.99 mm.

non-Mississippian societies (Figure 9). Interestingly, while many aspects of these cultures (such as pottery) were different, my data suggests there seems to be a shared concept or template of the desired basal width of triangular projectile points. This is suggestive of technological reason rather than cultural reasons for the decline in basal width (cf Woodall 2009:3).

John Whatley (2002:80) asserts:

> Mississippian Triangular points have been given a variety of names throughout the Southeast, including Pinellas (Bullen 1975:8) and Madison (Scully 1951; Cambron and Hulse 1975:84). These are described as being Mississippian in cultural affiliation, and show a maximum basal width of just over 20 mm. Hamilton triangular points (Lewis 1955), which feature an incurvate base and blade edges, are placed in a Late Woodland time frame (Cambron and Hulse 1975:64).

Sassaman et al. 1990, using data from the Beaverdam Creek Mound site (Rudolph and Hally 1985:288), use 18mm or less as the basal width below which Mississippian basal widths should fall. A careful look at the Beaverdam data indicates that they included Rudolph and Hally's Type VI—a preform—with basal width of 16.6mm in their study. In my database, I eliminated the preform mean width, so that the largest mean width of the remaining six Mississippian triangular types at Beaverdam is 13.6mm. Even with this slight error, Sassaman et al. 1990 were on target. All Mississippian assemblages in Figure 1 have basal mean widths lower than 15.4mm. These include two mounds sites on the Savannah River—Beaverdam Mound (9EB85) and Lawton Mound (38AL11) and the moundless but palisaded Ruckers Bottom village. Whatley's "Mississippian Triangular" category includes 88 points from 4 Georgia counties with a mean basal width of 14.33 [Not included in 50 site pilot study]. A small triangular point (14.3mm) from 38AK157 seems likely to be Mississippian, as it is less than .5mm from the Rucker's Bottom basal median of 14mm:

> It is not unreasonable to suggest that two distinct late components are represented in South Block, for there is some evidence for a Mississippian component in addition to the more widespread evidence for Late Woodland activities. The data, however, are inconclusive, and therefore of little utility in evaluating the validity of basal width as a temporal attribute (Sassaman et al. 1993:177).

The greatest Mississippian basal width in my database at 16mm, comes from Tennessee's Shiloh Mound Complex dating circa A.D. 950-1350 (Anderson et al. 2013:561) [Not included in the 50 sites for the model], followed by 15.4mm from nine points from several sites on Fort Jackson near Columbia, South Carolina, where some are associated with Pee Dee phase ceramics in the Colonel Creek drainage, a tributary of the Wateree River (Steen and Braley 1992:359). The Fort Jackson sites lie about 20km southwest from the Belmont Neck Mound on the Wateree River, presumably within the province of Cofitachequi. Twenty-two triangular projectile points were recovered from the "Mica House" at the Mulberry site (38KE12) (Wagner 1998) [Not currently included in the 50 sites for the model]. The mean width of those points is 15.09mm. The Fort Jackson and Mulberry basal means are quite

Table 4. Sites with stone platform pipes, stone pipes, and/or gorgets and associated basal width medians.

Site	Width	*Platform Pipe
Forbush Creek	19.07	Stone pipe stem&bowl frags /2drilled pendants/1 engraved
38AK157	19.1	n=27 ground stone gorget, undecorated clay pipe bowl frags
Ashe Ferry Late Wood Tri.	19.4	* ground stone gorget frag
Ashe Ferry Miss Tri	19.6	*
McClean Mound	20	*
Keyuawee Caraway	20	*
Gaston	20	*
9CH19 Sand Burial Mound	20^	Clay pipe frag. ^=scaled from photo DePratter 1991:92 n=2 triangulars. Md= St.Catherines /Savannah
38FL249	20.2	Ground stone gorget fragment. N
38AK155 Small Triangular	20.37	N=17
Ashe Ferry Pentagonal	20.5	*
Deptford Burial Mound	21^	*(clay)^=scaled from photo DePratter 1991:117 n=2 Md= St. Catharines /Savannah
Eared Yadkins	21.2	Judge database n=12
9CH18 Sand Burial Mound	None	* and 2 broken St Cath pots. Md= St Catherines/Savannah

^ scaled from photos, probably not 100% accurate
*Platform pipe

close to those reported by Michael Trinkley et al. (1993) for 38FL249, a site approximately 20 km downriver (as the crow flies) of the Kolb site. Interestingly, both 38FL249 and Kolb are located within 10km of the confluence of Black Creek and the Great Pee Dee River:

> Clarksville triangular points are very small, usually equilateral although a few are isosceles. None contain incurvate sides, although some have excurvate sides (South 1959:145). Coe's (1964:112) published range for the type is 10.0 to 18.0 mm in length and 10.0 to 16.0 mm in width. The specimens from 38FL249 fall slightly outside of this range with the average length being 20.7 mm and the average width being 15.4 mm. Although the length is slightly outside of Coe's range, these points fit most closely with this type description. Both examples were manufactured from rhyolite (Trinkley 1993:108).

My guess is that the Clarksville points found in Zone I of the excavations (EU-12 and EU-13) from 38FL249 are associated with the Pee Dee rim sherds. Both sherds had rosettes, and one included hollow reed punctations (Trinkley 1993:97). Although listed as "OTHER" (includes Pee Dee and Stallings) and thus not discernable as to exact location, Trinkley asserts "There is no evidence of stratigraphic separation of the three primary wares. In fact, only the Stallings and Pee Dee collections (as small as they are) tend to fall out in earlier and later levels, respectively" (Trinkley 1993:98). I looked for triangular point stratigraphy and noticed in the 38FL249 assemblage that the two Clarksville points are from Zone I, 2 of the 3 Eared Yadkins are from Zone II (third from Zone I), the 2 Thelma points are from Zone II, while the 2 excavated Small Savannah River points are from Zone II-Level 1 and Zone II-Level 2 indicating some slim yet tantalizing stratigraphic integrity may be present. However, Caraways from 38FL249 do not support the decline model per se with those from Zone II (basal mean=18.1) slightly smaller than from those in Zone I (basal mean=20.3) albeit both fall within the Late Woodland range of the decline model (16-21mm).

In the Savannah River drainage at the Martin's Bluff site (Stoltman 1974:195), three small triangulars produced a mean basal width of 15mm, and Irene and Etowah-like ceramics were reported from test excavations (1974:192). A fourth Martin's Bluff triangular point, defined as a "large triangular" by Stoltman [he used length not basal width as his large vs. small distinguishing criteria], is <u>not</u> included in calculating the mean basal width of "small triangulars" here. If the large triangular is included the Martin's Bluff basal mean would be 16.5mm. In the Coosa River Valley of Northwest Georgia, the King site's Dallas Excurvate Points and Dallas points averaged 14mm (Hally 2008:231). [Not currently included in the 50 sites for the model].

In the Catawba Valley, Lamar ceramics and small triangular points with a 14.3mm mean were recovered at Crowders Creek by May (1989:40) with uncorrected carbon dates of A.D. 1350, 1430 and 1600. In the Upper Yadkin River, the T. Jones site (Woodall 2009) has a Lamar influenced component, and sites with Dan River ceramics, 31Dh234 (Judge and Wetmore 1988) and Saratown, (Lewis 1951:265) also present mean basal widths within the Mississippian category. Although not included in the pilot study, small triangular points at 38AK155 (Cabak et al. 1996:80) are associated with cord marked, cob marked

pottery and a rock cluster with charcoal producing a calibrated C-14 date of A.D. 1125. One outlier, Ashe Ferry small triangular points from Mississippian features, presents a mean basal width of 19.6mm, close to the Late Woodland/Middle Woodland divide, and this must be reckoned with in the model. Riggs provides a reasonable explanation:

> Because only a small number of projectile points were recovered from Mississippian features, and some if not most of these could date to the preceding Late Woodland occupation, it is not possible to draw any conclusions about possible point assemblage differences; however, given the large proportion of Late Woodland pottery to Mississippian pottery found at the site, the overwhelming majority of the triangular points likely are attributable to the Late Woodland Ashe Ferry phase (Riggs et al. 2015:6-13).

Based on Riggs' assessment above, I have placed the Ashe Ferry Mississippian points in the Late Woodland category in the model. Four sites along Pen Branch on the Savannah River Site in Barnwell County, South Carolina (Table 5), produce triangular points with basal widths ranging from 8-16mm but are not associated with Mississippian period ceramics (Martin et al. 1985).

This is either a case that does not fit the model, and thus debunks its utility, or alternatively this could be the result of upland hunting away from floodplain-oriented hamlets or houses that would produce Mississippian period ceramics.

> Artifacts of Late Woodland-early Mississippian age other than pottery are limited to the small triangular points we mentioned above. Our analysis of these points in Chapter 4 showed that most probably date to the early centuries of the technology, that is, during the first half of the Late Woodland period. The only notable incidence of cluster of points of probable Mississippian age occurred at the streamside rock cluster location of the Rank 2 stream (38AK155). One of the rock clusters at this location was dated to 870± 60 B.P. (see Chapter 3). Thus, the activities involving pottery and heated cobbles recurred intermittently from as early as 3500 B.P. on. This is yet another indication of persistent land use throughout later prehistory (Cabak et al. 1996:167).

In looking at Mississippian versus Piedmont Village Tradition, the basal widths seem to be very similar during the same time frame. (Table 6). "We felt that a focus on social agency would be the most productive approach, inasmuch as there was no discernable difference in the technologies of the two cultural regions, Mississippian and Woodland" (Woodall 2009:3).

What about the Protohistoric Period and Historic Periods? One category of data sorely needed in this study is metric evidence for triangular points from Historic Period Native American sites. At what point do triangular points disappear from the archaeological record? Whatley (2002:79) cites Mark Williams personal communication in 2000 asserting that no small triangular points occur after AD 1350 (650 BP) in the Oconee River valley. In the upper Catawba River Valley, David Moore (2002:236) and Beck et al. (2016:333) report on Burial 1 from the Berry site, an extended adult male burial containing an iron knife, copper disks and a bundle that contained "an intact turtle carapace that held a ceramic elbow pipe made from soapstone tempered clay." A number of stone tools were also recovered, including an Early Archaic notched point, a stone working kit and among other items—four small triangular points (Moore 2002:236). Measurements of these points were not reported.

At Chota-Tanasee on the Little Tennessee River in Eastern Tennessee, small triangular points (Category 39) with mean lengths of 20.72mm, widths of 13.07mm, and thickness of 4.12mm (n=18), were clearly associated with the historic period:

> It is felt that this category represents the decline in flintknapping skill seen in the historic period. This category is felt to represent historic Cherokee manufacture. Twelve of the 20 specimens were recovered in Cherokee

Table 5. Triangular Points from Pen Branch Sites, Savannah River (Martin et al. 1985).

Site #	Components	Basal width	Report Page #	N=
38BR310	E/MW	8	82	N=1
38BR318	LA-LW	9	84	N=1
38BR282	E/MW	13	68	N=1
38BR531	M/LW	15/16	95	N=2
TOTALS		12.2mm mean		N=5

Table 6. Piedmont Village Tradition Sites in the Yadkin River Drainage.

Site	Dates	Width mean	n=	Source	Notes
T.Jones	1400-1600	14.6 mm	54	Woodall 2009:42	Lamar component
Porter	1500-1600	15.6 mm	119	Woodall 2009:42	
Donnaha	800-1300	16.6 mm	225	Woodall 2009:42	
Forbush Creek	1200-1400	19.07 mm	102	McManus 1985:34	
TOTALS	**1350 av**	**16.46 mm**	**500**		**65.87/4= 16.4675 mm**

> features and one was recovered in a burial (Schroedl 1986:351).

The brass triangular point type known as "Chota Triangular" was defined by Polhemus (1970:82-83) as a straight edge, straight base type with 21mm length mean, 14mm width mean, and 0.75 thickness. Schroedl (1986:50) asserted "The mean length and width of the lithic [Category 34-Madison] and metal specimens are very close. There is undoubtly a correlation between the two." Chota was occupied primarily between A.D. 1710 and 1745 based on analyses of Euro-American artifacts recovered from the site (Schroedl 1986:10). A wine bottle glass triangular point recovered from the Yamasee Town of Altamaha (circa A.D 1687-1715) has a basal width of 8mm.

Further afield at Jamestown in Virginia, Blanton et al. (2001) report on triangular points discovered in and near this early British Colonial fort.

> The majority (n=78, 83%) of the triangular types were in the smaller size category with lengths between 1.8 and 3.3 cm [18mm-33mm]. Virtually all of the smaller points were probably true arrowheads… the intensity of occupation appears to have gradually increased over time, peaking during the Middle and Late Woodland periods (AD 500-1600). Although many of the triangular hafted bifaces probably were deposited on the site after 1607, not all of them were. The precise proportion that dates to the fort period will probably never be known. The numerous triangular points of locally available quartzite and quartz are the most difficult to associate with the fort period. They commonly occur on late-dating native sites across the region and could well have been deposited prior to 1607.

I tend to be in agreement with Blanton et al. that the triangular points from Jamestown are Middle and Late Woodland based on my model.

<u>What Does the Decline in Mean Basal Width Mean?</u>

> Something is driving a change in shape between these two time periods and it remains to what extent this is a cultural phenomenon or is the result of technological changes linked to the integration of projectile points into a broader technological system (Fox 2015:508).

The decline in width does not seem to be a stylistic one, so a technofunctional explanation seems appropriate. Declines in basal widths are related to hafting elements and arrow shaft diameters. Some have suggested a lighter point was required:

> An extensive examination of North American arrow specimens by Hamilton (1982:27) revealed that arrow shaft diameter limits the thickness of the point base which can be mounted into the notched or split shaft end. Haft area thickness of actual mounted arrow point specimens was generally no more than 3/16 of an inch. The size of the hafting area, the portion of the projectile point bound to the shaft, has been assumed to correlate with shaft diameter (Corliss 1972; Forbis 1960; Wyckoff 1964). After observing that gross weight, rather than measurements such as length, thickness, or width produced the strongest bimodal distribution, Fenenga (1953) concluded that weight differences best documented dart and arrow points (Blitz 1988:125-126).

The 3/16 of an inch equates to 4.7625mm.

<u>Could Thickness and/or Weight be indicators of bow and arrow technology?</u>

> Data from the Pumpkin Pile site in Polk County, Georgia (Ledbetter 1992) suggest that weight may be the single most important metric attribute for

> discriminating arrow and atlatl dart points for the time period in question (Jones 2015:31).

Jones has demonstrated that Archaic period bifaces of about 5cm (50mm) in length weigh about 10 grams (Jones 2015:31). But what about arrow points? "Although the overall decrease in thickness is perhaps related to reduction in point size, when considered along with the decrease in weight it nonetheless reflects a trend towards lighter, more dynamic projectiles" (Jones 2015:31). The data in Table 7 seem to support a thickness threshold at 5mm, with Woodland points above 5mm mean thickness and Mississippian triangular points below 5mm mean thickness. More data and research is needed to test this hypothesis further. As can been seen in there is not a one to one correspondence between width and thickness decline. A haft area thickness maximum of 3/16ths of an inch (quoted above) converts to millimeters as 4.7625mm. As an example, the mean maximum thickness for 39 small triangulars from E Area on the SRS is 4.5mm, while 5 Yadkin points yielded a mean maximum thickness of 5.2mm (Cabak 1996:71-Table 4-4). By comparison, the Haw River Yadkins (n=9) yield a maximum mean thickness of 6.77mm.

The mean maximum thickness for the four Dunlap triangular groups (n=38) is 4.745mm, while the Mulberry Mica House (Wagner 1998) assemblage (n=22) yielded a mean maximum thickness of 4.03mm (range 3.0-5.1mm). This compares favorably with that reported by David J. Hally from the Little Egypt Site (9Mu102) along Coosawhattee River in Northwest Georgia where the thickness of a sample of 26 whole and fragmentary points ranged from 3.9-4.8mm (Hally 1979:225-226). Ten triangular point categories were defined at Chota-Tanasee. If we eliminate Category 31 described as "unfinished" and Category 35 a "preform", only one category does not fit my thickness prediction—Category 38. This point was equated with the Hamilton type, a Late Woodland/Mississippian type (Schroedl 1986:351). Is that signaling more Late Woodland than Mississippian?

A sample that does not fit this model is from Beaverdam Creek Mound where thickness ranged from 3.1-5.6mm (Rudolph and Hally 1985). [Here as above, I eliminated their Type VI as it is a preform rather than a finished point]. Perhaps the weight threshold between arrows and darts lies in the vicinity of 5.5mm mean thickness, but more work is needed to evaluate the role of thickness over time.

Does the Length of Triangular Points also Decrease through Time?

Browne's early experimental studies showed that arrows with points up to 5cm (50mm) long were effective (Browne 1938, 1940). The largest triangular point mean in my study, thus far, is the Doerschuk Baden at 3.5cm or 35mm—a presumed preform rather than a finished formal tool. Stoltman's work at Groton Plantation used length as a criteria to divide large triangular points from small triangular points (1974:222):

> Actually, the "break" between large and small triangular points was even more marked than the figures indicate: with one exception, all the small triangular points were 33mm or less in length (as opposed to a 37mm minimum for the large points). The one point that had a length of 36mm was only 15mm wide, clearly placing it in the small point category (Stoltman 1974:222).

Additionally, it is proposed that the overall length of triangular projectile points also decreases with time on the order of 10mm per period. Mississippian triangular points are proposed as falling between 10-20mm in length, Late Woodland between 20 and 30mm in length, Middle Woodland between 30 and 40mm in length, and Early Woodland above 40mm in length (Figure 2; Table 1 and 2). Again, as with width, these too are rather arbitrary divisions to be tested by further research. The same three exceptions applied to basal width were also applied to length.

Moving Forward:

The next step is to test the model. Two things are needed: 1) Sites with excavated assemblages that can test the validity of the model stratigraphically and 2) sites with pure components containing triangular and stemmed Woodland points and parallel ceramic assemblages.

> Triangular points indicative of bow and arrow technology are distinct from most of the other triangular Woodland forms, and, as indicated earlier are believed to refer to late prehistoric occupations in the region (Late Woodland and Mississippian). Stratigraphic data from 38BR495, Pen Point and Tinker Creek support this late chronological placement, although in each case, the distribution of triangulars is diffuse. Stratigraphic separation of narrow and broad varieties of triangulars is not observed at any of the sites, except that at 38BR495 the narrow type (i.e. <18mm at base) is more abundant in the upper levels of sites, while the broad type (i.e.>18mm at base) shows a more diffuse distribution. Also at 39BR495 [sic], a stemmed form of small triangular points (Thelma-like) is abundant. The type has diffuse vertical

Table 7. Comparison of mean basal width decline to mean thickness decline from tensites.

Site	Assemblage	Mean Width	Mean Thick	N=	Source
Haw River	Yadkin	25.9	6.77	9	Claggett and Cable 1982
Beaverdam Mound	Wood Tri	24	6.6		Rudolph and Hally 1985
Falls Lake	Yadkin	24	7.7	6/7	Judge and Wetmore 1988
38AK155	Yadkin	22.2	5.2	2/5	Cabak et al 1996
Dunlap	Sm Tri	20.97	4.745	38	Harmon n.d.
38AK155	Sm Tri	19.7	4.5	35/39	Cabak et al 1996
Forbush Creek	Caraway	16.3	4.89		McManus 1985
Mulberry Mica House	Sm Tri	15.09	4.03	22	Wagner 1998
Crowders Creek	Caraway	14.3	4.99	12	May 1989
Beaverdam Mound	Tri	11.9	4.3		Rudolph and Hally 1985

> distribution with a slight modality in relative deep levels, suggesting it may be a technological predecessor of non-stemmed small triangular forms. Confirmation of this must await future recovery of stemmed small triangulars in other buried contexts (Sassaman et al. 1990:175).

Dated assemblages would be even more ideal, but I know I am asking a lot there. Moving forward, the first step will be to obtain AMS dates from Kolb site features containing triangular points and ceramics to see if the Kolb Triangular points match the model as currently defined. Additional assemblages will be added to the database as they are discovered or become available.

Conclusions

The arrow and the bow combined as one entity made for a formidable weapon—capable and efficient as both a hunting device and as a militaristic device. The bow, long used for drilling holes and for friction fire making, became weaponized when combined with a diminutive version of the atlatl dart. Let us face it, bows and arrows have strings attached. Following Hodder (2012), both are bound up in entanglements—some of those entanglements are object to object—part and parcel of a complicated composite tool. Some of the entanglements are made to be rigid—such as tool hafting or fletch binding while others are intended to be quite flexible, such as the bow string and, of course, the bow itself. Simultaneously, the flexible entanglement of the bowstring, wrought with tension needed to propel the arrow, instigated sources of competition—indirectly through hunting and directly through warfare and as such created tensions within and between human societies. These tensions clearly reflect the human to object relationship and the human to human relationship.

Rather unfortunate is the fact that we rarely if ever recover from the archaeological record the entire composite weapon along with its constituent parts—bow, string, shaft, binding, glue, fletching and finally… getting to the point of all of this exercise—the tip… of the iceberg. We recover yet one very small part of the entire complex, multifaceted, multicomponent artifact. We only find either stemmed or triangular arrow points made of stone—one of many materials used for fashioning arrow heads. Understanding changes in the form and size of triangular arrow points through time, is critical to our understanding of ongoing changes via innovations in bow technology as well as ongoing changes in societies becoming ever more complex in the last few thousand years leading up to the point of European invasion and the introduction of firearms. Hopefully, the model presented in this paper is but a mere first step of many in that direction.

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20th-Century Consumerism at the Modjeska Simkins Site

Jakob D. Crockett

Introduction

In this article, I present a three-step methodology for investigating variation in commodity assemblages from the late 19th century onward in an archaeological context. Composed of two phases – an investigation of supply-side economic processes and an investigation of consumer behavior – this methodology is useful for linking production (regional and global scales) and consumption (local scale) strategies, a challenge for any historical archaeology of the modern world. This methodology is composed of three analyses: 1) commodity flow and national market access, 2) relative price indices and socioeconomic status, and 3) market integration and ceramic variation. To illustrate this methodology, I draw on data from excavations at the Modjeska Simkins site, a turn-of-the-20th-century, African-American occupied rental property in downtown Columbia, South Carolina.

> the forests are far away and I am
> no good with the bow and arrow
> and somebody sings on the radio:
> "farewell, foolish objects."
> and all I can do is walk into a grocery
> store and pull out a wallet and hope
> that it's loaded.
>
> – Charles Bukowski (2008 [1967])

To understand variation in an assemblage of commodities from the late nineteenth-century onward requires a two-phase approach: first, an investigation of supply-side economic processes; and second, an investigation of consumer behavior. In this article, I present a three-step methodology for investigating commodity variation in an archaeological context: 1) market integration and ceramic variation; 2) relative price indices and socioeconomic status; and 3) commodity flow and national market access. Together, these steps involve understanding the market conditions and constraints of the environment within which consumer behavior took place.

Consumption practices operate within specific social-historical contexts that partially structure these consumption practices (Crockett 2011). Occupation, income level, socioeconomic status, social environment, and commodity flow place limits on the nature and types of consumption practices available to a consumer. These external market structures exist independent of individual consumer behaviors. While neither dictating nor totally accounting for the specific form of consumption practices, market structures do condition and constrain available options. Thus, to understand particular consumer practices requires an understanding of market or supply-side economic structures within which these practices took place. The methodology presented herein therefore should be understood as a method for linking production (regional and global scales) and consumption (local scale) strategies, identified by Charles Orser (1996) as a necessary challenge for any historical archaeology of the modern world.

To illustrate this three-step methodology for investigating consumerism, I draw on data from excavations at the Modjeska Simkins site (Figure 1) in downtown Columbia, South Carolina (Crockett 2016). Initiated in October 2012, the Modjeska Simkins Archaeology Project was a joint venture between the

Figure 1. Photograph of the Simkins site, circa 1960s. The house at 1320-1/2 Elmwood Avenue is pictured right. The small structure at the left of the photograph is the second generation privy plumbed with running water and sewerage. (Photograph courtesy of Joseph Winter Collection, South Caroliniana Library, University of South Carolina, Columbia).

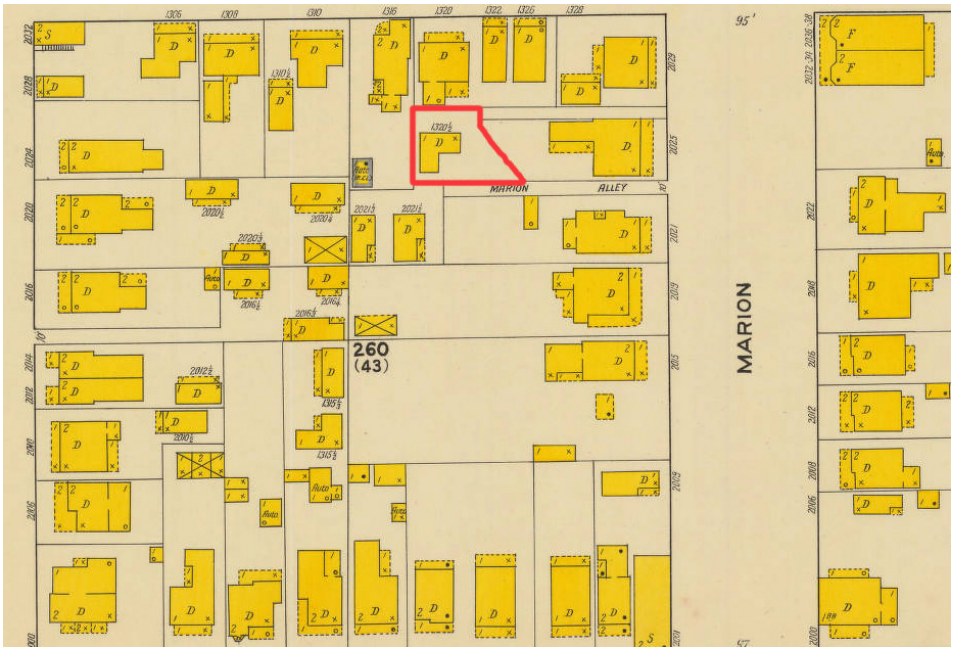


Figure 2. Detail from the 1919 Sanborn Fire Insurance Map of Columbia. Elmwood Avenue is the northern boundary of the block (top), Sumter Street is the western boundary, Calhoun Street is the southern boundary, and Marion Street is the eastern boundary. Outlined is the property at 1320-1/2 Elmwood Avenue (known today as rear 2025 Marion Street). (Courtesy of South Caroliniana Library, University of South Carolina, Columbia).

Columbia Archaeology Program (sponsored by the City of Columbia) and Historic Columbia, a not-for-profit preservation organization. Although the lots at 2025 Marion Street and 1320-1/2 Elmwood Avenue are one property today, historically, the Modjeska Simkins site was comprised of two independent house lots from the 1890s to 1932 (Figure 2). All archaeology and interpretation centered around the smaller house and property at 1320-1/2 Elmwood Avenue, predating the purchase of the lot by the Simkins household in 1932. In other words, the focus of the article predates any association of Modjeska Simkins with the 1320-1/2 Elmwood Avenue property, instead concentrating on the myriad individuals who rented the house and property from the 1890s to 1932.

In the following sections, I begin with an overview of the household demographics of 1320-1/2 Elmwood Avenue (often referred to today as 'rear 2025 Marion Street'), followed by a linking between specific households and the deposits recovered from the first generation privy and the Feature 53Z trash pit. With the household/artifact links established, I present the three-step methodology for investigating consumerism in an archaeological context.

The Modjeska Simkins Site

The significance of the Modjeska Simkins site lies not only with Simkins' occupation of the property, but also the occupation of those who came before but did not make it into the history books. Those individuals who came before – yet remain largely unrecognized by historians – are representative of the vast majority of Columbia's residents. Their lack of recognition is symptomatic of a larger malaise in historical studies, where significance is too often equated with singularity and narrow definitions of achievement. This habit of focusing on individuals who are already known, already equated with greatness, and already deemed significant is outdated.

Such an approach to the past produces histories that ignore the significance of everyday acts of living by the majority of people making up a community. Nonetheless, it is just these everyday acts that produce communities. Shopping, working, allocating resources, playing, interacting with neighbors, fixing meals, and similar activities are the 'stuff' that communities are made of. Community is thus the product of everyday people doing everyday activities and making everyday, often material, decisions. It is this community approach to history that tells us something about how we got from 'there' to 'here' because the process of community production remains the same today. Thus, if we wish to understand the past in a way that tells us something about our world today, we need to produce histories of everyday people using sites associated with the non-famous in ways that allow for inter- and intra-site and temporal comparisons. The pre-Simkins occupation of the site is well positioned to address this gap in local history as well as broader topics of historical significance because of its historic association with working class African American renters and relative isolation from contemporary construction and development activities.

According to the Federal Census and Columbia City Directories, the first record of occupation at 1320-1/2 Elmwood Avenue is 1897 by William Johnson, an African-American painter who rented the property. Between 1897 and 1932 (when the Simkins family purchased the property), 12 different households (18 different individuals) over 16 years are listed for this 35-year period. Table 1 presents a summary of demographic information for each household. All occupants are African American and renters. Of the 12 households, seven of the listed heads of household are male, while five are listed as female. Seven of the 12

Table 1. Summary of available Columbia City Directory information for 1320-1/2 Elmwood Avenue, 1875-1932. All occupants are African American and rent the property.

Year	Head of Household	Spouse	Occupation
1897-8	Wm Johnson		Painter
1899	Waites Moorman	Linda	Carpenter
1903	Matthew Adams		Laborer
	James Schuler		Laborer
	John Schuler		Laborer
1904-5	Eugene Schuler		Driver
	Laura Schuler		Laundress
1906	Laura Schuler		Laundress
1907-8	Elizabeth Geiger		Laundress
	Eugene Schuler		Grocer @ 813-1/2 Hampton Avenue
	Laura Schuler		Laundress
1909	Eugene Schuler		
	Laura Schuler		Laundress
	Elizabeth Geiger		Laundress
1910	Elizabeth Geiger		Laundress
	Sarah Hill		
1911	Shelley Reeves		Laundress
1912	Edw Brunson	Delia	Painter
	Elizabeth Geiger		
1917	Thos Williams		Employee @ Southern Ry
1918	Rafe Davis		Elevator operator @ Jerome Hotel
1919	Annie Barnwell		
	David Wallace		Laborer
	Eva Wallace		
1926	Susie Scott		Cook
	Jasper Wells	Iona	Janitor @ Blossom St School
1931	Carrie Haynes		Maid @ Jefferson Hotel
1932	Carrie Haynes		Maid @ Jefferson Hotel

households take in a least one boarder. Only four occupants stay at the property for more than one year: the Shulers (Eugene, a driver and grocer, and Laura, a laundress) call the property home for four years; Elizabeth Geiger, a laundress, also lives at the property for four years (one year as a boarder with the Shulers); and Carrie Haynes, a maid at the Jefferson Hotel, lives on the property for two years.

Only 3 of the 18 individuals are lacking an occupation listing. Occupations for the remaining 15 individuals include: a hotel maid, four laborers, two painters, three laundresses, a school janitor, a hotel elevator operator, a cook, a carpenter, an employee at the Southern Railway, and an individual listed one year as a driver and the next as a grocer.

The Excavations. Fieldwork took place between October 2012 and February 2013. At the conclusion of excavation, 250 square feel of the site had been opened (Figure 3). Since the significance of the property for this study centers on those who did not make it into the history books, the temporal scope of work was the first documented occupation of the property in 1897 up to 1932. Historic property boundaries guided the spatial scope of work. The historic boundaries of 1320-1/2 Elmwood Avenue formed the site boundaries for archaeological sampling and excavation. Despite modern construction to the north, west, and south, the original property at 1320-1/2 Elmwood Avenue was not impacted by post-1932 block nor intra-site construction activities. The result is a largely undisturbed household-scale window into the turn-of-the-twentieth century.

One of the most exciting discoveries at the site was the assemblage associated with an early privy (Figures 4 and 5). Located in the far southeast corner of the site, along the east property line near the intersection of the south property line (see Figure 3), the privy was a pit feature measuring six-by-six feet. The privy feature had a maximum depth of 2.8 feet (4.05 feet below surface). The privy was composed of six distinct deposits / strata. The uppermost strata is likely associated with the filling of the privy and the construction of the second generation privy.

A total of 940 artifacts (representing 288 MNI) and 79.7 grams of floral material were recovered from the privy pit. Of the 288 minimum number of items recovered, 193 items had characteristics that where assignable a manufacturing date range or introduction date. The artifact with the most recent TPQ date was a 2-1/8 inch diameter hole-in-top style ferrous alloy can (artifact number 55P-56). This style of can was introduced in 1900. No other identifiable artifact had a more recent manufacturing date. Thus, we know that the first generation privy deposit was created in 1900 or sometime thereafter. This does not mean that the privy itself was constructed in 1900 or thereafter, simply that the deposit within the privy was created in 1900 or thereafter. Four additional artifacts had 1890s TPQ dates (artifacts 55N-39, 55N-73, 55P-54, 55P-65), supporting an early twentieth-century deposit creation date event. Three artifacts with closely-spaced ending manufacture dates strongly suggest that the first generation privy deposit was created during the first decade of the twentieth century: artifact 55R-15, a .38 caliber cartridge case had a headstamp ("U.M.C. / S H / .38 S & W") made between 1867-1911; artifact 55P-55, a medicinal/pharmaceutical bottle marked "W.C. FISHER / DRUGGIST / COLUMBIA / S.C." was produced between 1871-1908; the third artifact, 55N-39, was a South Carolina Dispensary bottle produced between 1891-1907.

A second feature associated with the early occupants of 1320-1/2 Elmwood Avenue was uncovered in Unit 53. Designated Feature 53Z, this feature was an ovaloid trash pit feature truncated on the north by a modern trench

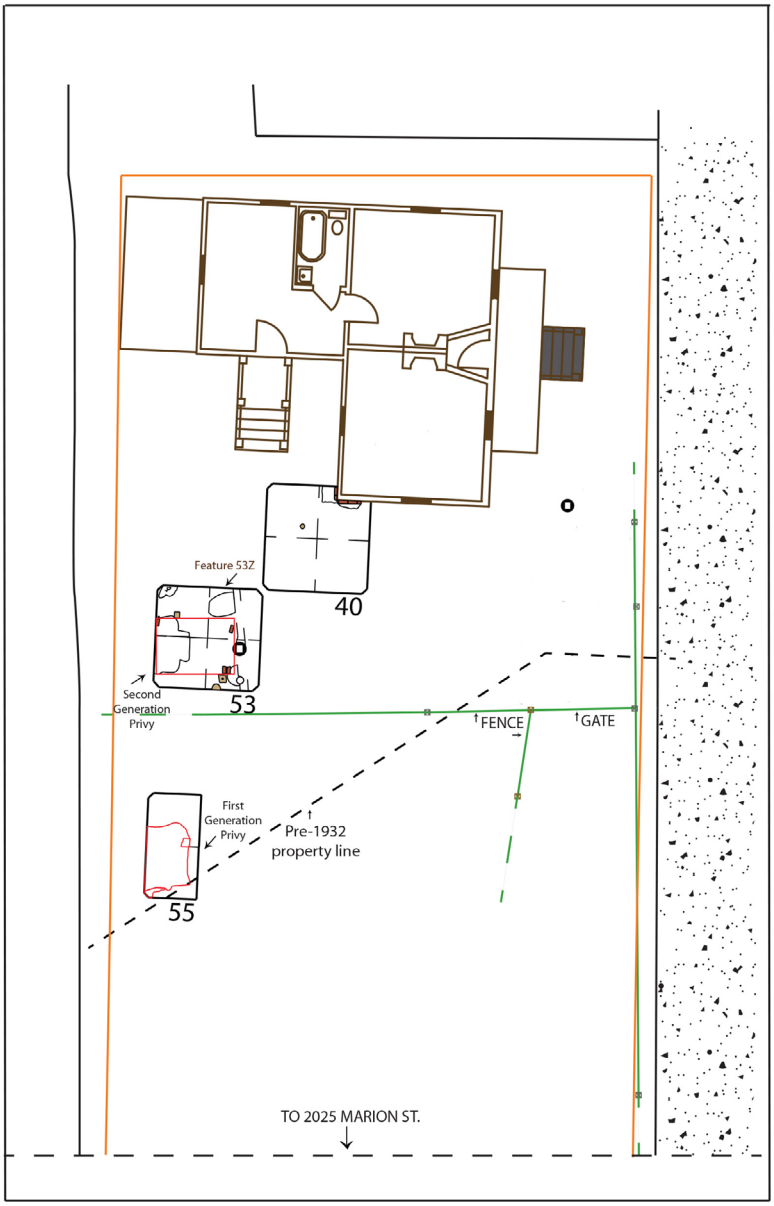
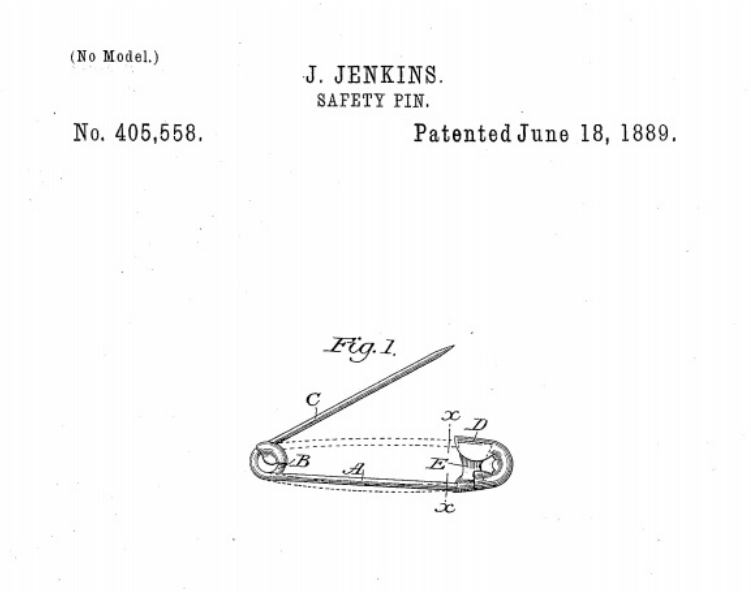


Figure 3. Excavation map of the Modjeska Simkins site. The Feature 53Z trash pit is located at the top of Unit 53. The first generation privy is within Unit 55. No non-building features were uncovered within Unit 40, directly adjacent to the structure at 1320-1/2 Elmwood Avenue. The second generation privy, depicted in Figure 1, is outlined in Unit 53. (Illustration by Joseph Johnson).

Figure 4. Photograph of the first generation privy, Unit 55, before excavation. (Photograph by author, 2012).

feature (see Figure 3). The truncated feature measured 2.7 feet north-south and 2.15 feet east-west. The maximum depth of the feature was 1.8 feet (2.82 feet below surface). Composed of two deposits, the upper, intrusive deposit was a compact sandy clay (subsoil) matrix. The lower deposit was an artifact-rich, loose, sandy loam.

Figure 5. Photograph of the first generation privy, bisected along a north-south axis. The privy was composed of six distinct stratigraphic layers. (Photograph by author, 2012).


(No Model.)

J. JENKINS.

SAFETY PIN.

No. 405,558. Patented June 18, 1889.

Fig. 1.

Figure 6. Detail from patent 405,558. This is the patent used to establish the TPQ date of the Feature 53Z trash pit using artifact number 53Z-49. (Image courtesy of Google Patents).

This medium-sized, well-preserved, trash pit contained a total of 666 artifacts (representing 174 MNI) and 0.0 grams of floral material were recovered from the pit. Of the 174 minimum number of items, 24 items had characteristics that where assignable a manufacturing date range or introduction date. The artifact with the most recent TPQ date was a one-inch safety pin (artifact number 53Z-49). The style of head used on this particular safety pin was patented in 1889 (Pat. No. 405,558) (Figure 6). No other identifiable artifact had a more recent manufacturing date. Thus, we know that the Feature 53Z trash pit was created in 1889 or sometime thereafter. 1889 predates the first known occupants of the property, suggesting the trash pit was created by one of the earlier households during the late nineteenth or first decade of the twentieth centuries. All of the bottles recovered from the trash pit had a maximum production range of circa 1870 to 1920, further supporting an association between the trash pit and late nineteenth or first decade of the twentieth century occupants of the property.

The Structuring Environment of Consumerism

Consumer strategies are, in part, explained by the social characteristics of the consumer, his/her subjective place or status in society, and the employment of individualized consumption strategies and tactics used to help negotiate his/her specific social environment. The study of consumption within an archaeological context begins with as complete an understanding as possible of the external factors influencing consumer options. The value of this type of analysis is that it defines the structure within which consumption practices take place. The depth of such analysis is, of course, dependent upon the nature of the site, sample sizes, and available lines of evidence—both archaeological and documentary—but should include an analysis of market integration, relative price indexing, and commodity flow. These factors, discussed below, are based on etically-derived categories and represent the strongest external constraints upon consumer behaviors and options.

Market Integration. Mark Leone (1999) contrasted ceramic decoration with form by tableware, teaware, food preparation, and personal use goods to produce an index of variation meant to reflect market integration. This index comes from a formula that utilizes whole vessel counts (MNI), the number of forms, and the number of types. By manipulating the variables, the formula stresses either type variation or functional variation. Results from these formulas are used to assess changes in market integration over time. The variation reported by each of these formulas is the product of the degree to which a household is integrated into the market. Specifically, when looking at the index produced by both the Function-Variation and Type-Variation formulas, "the higher the index … the greater the likelihood that individualism and its etiquettes were operative in the household" (Leone 1999:212).

The ceramic variation index is a useful analytical tool for archaeologists interested in assessing the degree to which the residents of eighteenth- to twentieth century households participated in the national market. This usefulness extends beyond the investigation of differential capitalist integration of individual households to included individual and collective identity creation through the consumption of material goods, in both the ethnographic present and the archaeological past.

Relative Price Indices. The hypothesis underlying relative price indexing is that as access to goods increases for consumers, there is an increase in the average ceramic price index value (Miller 1980). Access to goods is measured in terms of socioeconomic status. Socioeconomic status is determined by documented income and the occupation(s) of the site's residents. A relative price index analysis allows for an examination of ceramic expenditure patterns in terms of time, space, and/or functional groups. Relative price indexing assumes that consumers with more disposable income purchase, and therefore discard, more expensive ceramics. Since consumers are very much limited in what they can purchase by available funds, congruence with, or deviation from, expected patterns of 'fit' between socioeconomic status and the relative price values of recovered ceramics is a source of insight into consumer strategies.

Commodity Flow. A commodity flow analysis examines patterns of household consumption from a supply-side economic perspective. The Commodity Flow Model (Riordan and Adams 1985) predicts the spatial distribution of household consumer goods in terms of geographic and market access areas. Geographers use the term commodity flow to describe how goods move from manufacturer to consumer (Pred 1970). Within an archaeological context, manufacturer location is derived primarily from makers' marks. The assumption behind commodity flow is that access to consumer goods is dependent upon the physical availability of goods. Availability of goods, in turn, is dependent upon the factors identified above. In other words, you cannot buy from a store what a store does not carry. Any deviation from the predicted pattern of goods present in an assemblage must be explained. As with relative price indexing, congruence with and deviation from expected patterns of commodity flow are a source of insight into consumer strategies.

Market Integration

The market variation index is a useful analytical tool for archaeologists interested in assessing the degree to which the residents of eighteenth- to twentieth-century households participated in the national market. This usefulness extends beyond the investigation of differential capitalist integration of individual households to include individual and collective identity creation through the consumption of material goods, in both the ethnographic present and the archaeological past. Observed variation within household table and teaware assemblages has been used by archaeologists as support for a variety of interpretations. James Deetz (1996) argues that changes in ceramic types and forms, in conjunction with changes in gravestones and architecture, is the result of a shift during the late 18th and early 19th centuries to a "Georgian," or modern, worldview. This worldview is characterized by an emphasis on the individual and is spread uniformly through social emulation. George Miller (1991) argues that these same changes are the result of a "consumer revolution [which] was driven more by supply than demand… because falling prices… affected a much larger segment of the population than did the process of social emulation" (Miller, in Leone 1999: 199). Rejecting the processual uniformity of Deetz and the passive receptiveness of the consumer implied by Miller, Mark Leone (1999:196) suggests that "ceramic use and change…[is] heavily influenced by participation in a wage-labor and profit-making economy." Since there is differential participation in market and wage-labor systems, and individualism is reflected in ceramics, "there should be fluctuations in the use of matched ceramics from household to household as people…are in or out of the market" (Leone 1999:200). In other words, ceramic variation is a reflection of a household's market integration.

The Archaeological Assumption. Leone (1999) contrasted ceramic decoration with form by tableware, teaware, food preparation and personal use goods to produce an index of variation meant to reflect market integration. This index comes from a formula that utilizes whole vessel counts (MNI), the number of forms, and the number of types. By manipulating the variables, the formula stresses either type variation or functional variation. The Type-Variation formula, which stresses function over ware type, is,

$$(V/F)(W)$$

Where V = the total number of vessels (or MNI); F = the number of different vessel forms; and W = the number of ware types plus primary decorative techniques. The Function-Variation formula, which stresses ware type over function, is,

$$(V/W)(F)$$

The variation reported by each of these formulas is the product of the degree to which a household is integrated into the market.

Results from these formulas are used by Leone to assess changes in market integration over time. Ceramic variation "is not one of inevitable cognitive modernity, as Deetz suggests, nor of ever greater use of ever cheaper ceramics, as Miller predicts. Moreover, the pattern is certainly not a verification of poorer households emulating 'better-off' neighbors" (Leone 1999:197-8). Leone argues that "because eating…[is] rule-bound and leave[s] archaeological traces later, the indicators are matched cups and saucers" (1999: 203-204). Specifically, when looking at the index produced by both the Function-Variation and Type-Variation formulas, "the higher the index… the greater the likelihood that individualism and its etiquettes were operative in the household" (Leone 1999: 212). Leone concludes his study by suggesting that his "result, then, should be taken, not only as a measure of the variable operation of the etiquette–ideology–wage-labor mechanism, but also as a chance to examine other sources to verify whether or not such variation could have been true" (1999: 214).

The ceramic variation index is a potentially useful analytical tool for archaeologists interested in assessing the degree to which the residents of 18th-20th=century households participated in the national market. This usefulness extends beyond the investigation of differential capitalist integration of individual households to include individual and collective identity creation through the consumption of material goods, in both the ethnographic present and the archaeological past. The ceramic variation index is based on two assumptions: first, ceramics were selected and purchased new (in the forms and types desired, in matched or unmatched sets) by the residents of a household; second, ceramic types and forms are reflections of individualism and differential participation in a market system. These assumptions raise an important question, one in which Leone (1999:213) addresses by asking, "does a

Table 2. Ceramic variation for the Feature 53Z trash pit and first generation privy.

	Type (V/F x W)	Function (V/W x F)
Privy		
Tableware	**34.4** (31/9 x 10)	**27.9** (31/10 x 9)
Teaware	**18.0** (9/2 x 4)	**4.5** (9/4 x 2)
Trash Pit		
Tableware	**10.0** (8/4 x 5)	**6.4** (8/5 x 4)
Teaware	**12.0** (6/2 x 4)	**3.0** (6/4 x2)

low index mean that people can exempt themselves from the market, or that they were just too poor to own the ceramics needed to meet the requirements of the index"?

In calculating the variation index, the study is limited to types and forms of tableware and teaware, and includes both ceramics and glass. Standard classifications are used. Function (F) includes forms such as plate, bowl, drinking cup, etc. and is calculated by adding together the total number of forms present, regardless of the number of vessels of a particular form. Ware type (W) includes paste (earthenware, stoneware, porcelain) and major decoration categories (blue-banded ware, geometrically molded, slipware, etc.). As with function, this value is independent of the number of vessels belonging to each type. The total number of vessels (V) is simply a count of the number of vessels in the household.

Findings. Indices of ceramic variation were calculated by comparing ceramic decoration by form for tableware and teaware for both the first generation privy and the Feature 53Z trash pit. Table 2 summarizes these results. For the first generation privy, the ceramic assemblage contained 40 vessels (MNI), 11 different vessel forms and 12 ware types plus primary decorative techniques. The type-variation formula (V/F x W), which stresses function over ware type, produced an index value of 34.4 (31/9 x 10) for tableware and 18 (9/2 x 4) for teaware. The function-variation formula (V/W x F), which stresses ware type over function, produced an index value of 27.9 (31/10 x 9) for tableware and 4.5 (9/4 x 2) for teaware. For the Feature 53Z trash pit, the ceramic assemblage contained 14 vessels (MNI), 6 different vessel forms, and 7 ware types plus primary decorative techniques. The type-variation formula (V/F x W), which stresses function over ware type, produced an index value of 10.0 (8/4 x 5) for tableware and 12.0 (6/2 x 4) for teaware. The function-variation formula (V/W x F), which stresses ware type over function, produced an index value of 6.4 (8/5 x 4) for tableware and 3.0 (6/4 x 2) for teaware.

Discussion. The market integration hypothesis predicts that the ceramic assemblages of households more fully integrated into the market – who have more fully internalized the ideology of individualism and practiced its associated etiquettes – will have a variety of vessel functions (which illustrates segmentation), but few vessel types (which illustrates standardization). Conversely, households less integrated into the market will have few vessels of different functions but a variety of vessel types (Rotman and Bradbury 2002). However, since different rules and degrees of participation existed for different types of goods, an analysis of a ceramic assemblage as a totality obscures subtle differences in social behaviors and consumption practices (Leone 1999). These differences are revealed by examining variation between and within material culture categories.

As Table 2 indicates, the residents of 1320-1/2 Elmwood Avenue had very few specialized vessels. Recovered teaware was limited to cups and saucers. Tableware was limited to plates, bowls, and unidentified flatwares and hollowwares. However, for the privy, there were 10 different ware types plus decorative techniques for tableware and four for teaware. Likewise, there were five different ware types plus decorative techniques for tableware and four for teaware. What do these results suggest? According to Leone (1999) and Shackel (1993), these data suggest that the residents of 1320-1/2 Elmwood Avenue were less integrated into the national market and its associated ideologies. The absence of multiple vessel forms is indicative of a lack of segmenting behaviors. Likewise, the presence of a multitude of different ware types and decorative techniques suggests a household not fully embracing the ideologies and associated etiquettes of an individualistic market system. While these results are intriguing, they raise several questions that need to be addressed. Did the occupants of the household really exempt themselves from the dominant ideology of individualism? If they did exempt themselves, how (and why) did they do it? What other explanations might account for this pattern of material goods? How are these results affected if the features represent not an individual household but an aggregate of households?

Relative Price Indices

Socioeconomic status has been suggested as an explanation for some of the observed variability in archaeological assemblages (c.f., Henry 1987; Miller 1980, 1991; Spencer-Wood 1987b). These arguments assume that people

consume particular goods because of their socioeconomic status. Henry (1987) explains that nearly every individual, and by extension, household, is a member of at least two cultural sub-groups: social class and ethnic group. These are "reference groups," used by individuals to determine appropriate judgments, behaviors, and beliefs (Henry 1987). Social class is generally equated with socioeconomic status, which in turn is determined by documented income level and/or occupation (Spencer-Wood 1987b). The social status of a commodity is related to how much the commodity costs (Miller 1980:39). The assumption underlying the link between socioeconomic status and material goods is that consumers of higher socioeconomic status purchase, and therefore discard, more expensive material goods.

The goal of earlier relative price analyses was to define the degree to which observed variability in artifact assemblages co-varied with socioeconomic status (Henry 1987). Lower socioeconomic status households should have assemblages with lower relative price index values. Similarly, higher socioeconomic status households should have higher relative price index values. Spencer-Wood (1987b:326) notes, however, that "consumer appetite [for more expensive goods] increases with wealth, until it nears the limits of status expression possible with ceramics or other categories of consumer goods."

Interestingly, although never identified as such, the fundamental theory behind relative price indexing is Thorstein Veblen's (1893) idea of conspicuous consumption. In *The Theory of the Leisure Class*, Veblen posited that the powerless emulate the powerful through the consumption of material goods. For the powerful, objects are consumed for their ability to display social prestige or communicate a defined and commonly understood social identity. For the disenfranchised, the motivation to consume objects is based on a desire to emulate this "leisure class." By suggesting that consumers of higher socioeconomic statuses purchase more expensive material goods, a relative price index analysis is actually a method of measuring conspicuous consumption. Not surprisingly, a closer examination of the data within the broader social contexts surrounding the acquisition of goods illustrates that the motivations underlying consumer choice are more complex. Nevertheless, relative price indices do provide a valuable departure point for discussing choice, even though the approach to consumption taken in this article runs counter to Veblen's ideas of emulation.

In 1980, George Miller developed an economic scaling technique to measure the relationship between socioeconomic status and ceramic vessels. This technique determines the relative economic value of a ceramic assemblage, which provides a means to discuss the relative economic level, or socioeconomic status, of the household that acquired, used, and discarded the ceramic goods (Henry 1987). Alternatively, with this technique, the relative economic level of the household can be determined from archival sources, which provides a means to discuss the expected relative economic value of the ceramic assemblage. Lastly, relative economic values can be used to compare the value of one assemblage with another, allowing for an examination of ceramic expenditure patterns in terms of time, space, and/or functional group.

Miller's economic scaling of eighteenth and nineteenth century ceramics is based on the cost of different decorated wares compared with the lowest-priced undecorated cream-colored ware (CC ware) (presented in Miller 1980, updated in 1991). The values of different decorated wares are expressed in relation to a fixed index value of 1.00 for CC ware at various points in time. For example, in 1825, transfer-printed plates had an index value of 3.00, indicating that transfer-printed plates cost three times as much as undecorated CC plates (Miller 1991). Similarly, in 1855, sponged-painted plates had an index value of 1.2, indicating that sponged-painted plates cost 1.2 times as much as undecorated CC plates (Miller 1991). Although redware and yellowware vessels were not included in the price indices, Miller (1980:48) noted that these ware types would probably have an index value of less than 1.00.

However, Miller's price indices are incomplete after 1870 and nonexistent after 1881; therefore, excluding their use on late nineteenth- and twentieth-century sites. To overcome this limitation, Susan Henry (1987) developed a series of relative price scales for ceramic goods for the period 1895 to 1927. Prices for cups/saucers, plates, and bowls were collected from seven Montgomery Ward and Sears, Roebuck mailorder catalogs. Based on these prices, relative index values were generated for different decorated wares relative to the least expensive undecorated ware. Since Miller's CC ware is not a ware type identified in any of the catalogs, "semiporcelain" was used. In all cases, this was the least expensive ceramic type identified in all of the catalogs. Price variability within decorative categories was averaged to obtain a single figure, since variability between, rather than within, decorative categories is the important variable in the analysis (Henry 1987). Additionally, prices from several catalogs were averaged to create indices for different time periods. Since the Feature 53Z trash pit and first generation privy both date to the late nineteenth and first decade of the twentieth century, Henry's ceramic price indices, presented in Table 3, are used in this analysis.

Determining the relative economic value of a ceramic assemblage is fairly straightforward. One first determines the MNI for plates, cups/saucers, and bowls. These form types are then grouped by decorative type. Assuming the assemblage has been dated, the next step is to pick a year from one of the relative price index lists. Next, the index value of each type for that year is multiplied by the number of vessels of that type. The result is a set of three price indices, one each for cups/saucers, plates, and bowls. When the results from each vessel type are summed and divided by the total number of vessels, the result is a mean economic value for the entire ceramic assemblage (Henry 1987; Miller 1980, 1991).

Findings. Both archival and artifactual data were used to

Table 3. Ceramic price indices (adapted from Henry 1987:245).

	Average Price per Dozen			Ceramic Indices		
Decoration	Cups and Saucers	Plates	Bowls	Cups and Saucers	Plates	Bowls
1895-1897						
Undecorated	$1.10	$0.68	$1.00	1.00	1.00	1.00
Molded	1.26	0.75	1.15	1.15	1.10	1.15
Other Decoration *	1.30	0.84	1.19	1.18	1.24	1.19
Transfer-printed	1.49	1.00	1.37	1.35	1.47	1.37
Transfer, gilt	1.73	1.32	1.94	1.57	1.94	1.94
Porcelain	4.12	2.71	2.80	3.75	3.99	2.80
1900-1902-1909						
Undecorated	$0.68	$0.50	$0.72	1.00	1.00	1.00
Molded	1.07	0.73	0.97	1.57	1.46	1.35
Color**, gilt	1.70	1.27	1.71	2.50	2.54	2.38
Porcelain	2.82	2.01	–	4.15	4.02	4.00***
1922-1927						
Undecorated	$2.21	$1.50	$1.51	1.00	1.00	1.00
Molded	2.52	1.63	1.93	1.14	1.09	1.28
Gilt band	3.41	1.70	2.16	1.54	1.13	1.43
Decal-printed	4.69	2.36	2.77	2.12	1.57	1.83
Porcelain	6.10	4.31	4.02	2.76	2.87	2.66

* The 'Other Decoration' category includes hand-painted, sponge-painted, edged and annular style decorations. Since Henry did not include these in her original analysis, relative prices and index values for these decorative types were situated between undecorated and transfer-printed wares.

** The 'Color' category refers to both transfer-printed and decal-printed. Since both decorative techniques existed during this time and their prices are relatively the same, both techniques are combined.

*** Estimated value based on the relationship of porcelain to other categories (no bowl prices available).

determine occupations and ceramic indices. Columbia City Directories provided information on name, occupation (sometimes including the place of work), and address of residence. Archaeological data comes from the Feature 53Z trash pit and the first generation privy. Socioeconomic status was indicated by position within a hierarchy of occupational categories (Spencer-Wood 1987b). Five occupational categories were used: 1) professional and high white-collar (e.g., banker, lawyer, physician); 2) proprietary and low white-collar (e.g., storekeeper, clerk, teacher); 3) skilled trades (e.g., carpenter, blacksmith, train engineer); 4) semiskilled and unskilled (e.g., waiter, teamster, laborer); and 5) unclassifiable, unemployed, and unlisted (adapted from Henry 1987).

An average of occupations for all residents of the 1320-1/2 Elmwood Avenue lot from 1897 to 1910 was used in the analysis. An average occupational ranking was used, since the first generation privy and Feature 53Z trash pit are considered the product of one or more African-American households circa 1897-1910. An average occupation ranking therefore more accurately reflects the socioeconomic status of the household(s) likely contributing to the features. Occupational data used in this analysis is found in Table 1. Based on this data, the average occupation ranking of the site's residents falls between the third (skilled trades) and fourth (semiskilled and unskilled trades) position. Spencer-Wood (1987b) examined the effect several different methods for calculating MNI counts had on ceramic indices. Her results demonstrated that sherd counts, as opposed to MNI counts, consistently underestimated actual ceramic price index values. Two methods for determining MNI counts were tested by

Table 4. Summary of ceramic assemblages for the Feature 53Z trash pit and the first generation privy.

Ware Type	Form	Decoration	MNI
Feature 53Z Trash Pit			
Porcelain	Cup	Painted, Underglazed, Polychrome	1
	Plate	Undecorated	1
Whiteware	Bowl	Undecorated	1
	Cup	Gilded, 'Liquid Gold'	1
	Cup	Undecorated	2
	Plate	Undecorated	2
	Bowl	Opaque Glaze	1
	Saucer	Transfer-Printed	1
	Bowl	Transfer-Printed	1
	Cup	Transfer-Printed	1
Total			**12**
First Generation Privy			
Porcelain	Bowl	Opaque Glaze	1
Whiteware	Saucer	Undecorated	3
	Cup	Undecorated	1
	Cup	Opaque Glaze	1
	Cup	Painted, Underglaze, Polychrome	1
	Cup	Transferprint, Underglaze, Monochrome	2
	Bowl	Undecorated	2
	Bowl	Transferprint, Underglaze, Monochrome	1
	Bowl	Molded	1
	Plate	Undecorated	5
	Plate	Gilded, 'Liquid Gold'	1
	Plate	Edgeware	2
	Plate	Painted, Underglaze, Polychrome	1
	Plate	Transferprint, Underglaze, Monochrome	2
Total			**24**

Spencer-Wood. MNI counts were first calculated from rims only, and second by rims and any other distinctive body sherds that could not be part of any vessel represented by a rim or other body sherd. She determined that the rim and distinctive body sherd method of calculating a MNI value resulted in a more complete vessel count than just using rims alone. For this reason, MNI counts in this analysis are calculated using the rim and distinctive body sherd method.

Table 4 is a summary of the ceramic assemblages from the Feature 53Z trash pit and the first generation privy, sorted by ware type, vessel form, decorative style, and MNI. While many more decorative styles were indicated by individual sherds, only those styles used in calculating MNI values are included here. Further, only whiteware, pearlware, and porcelain vessels were used to determine relative price values. In addition, whiteware and pearlware vessels were amalgamated since a distinction was not indicated in the catalogs Henry used to establish relative prices.

The total MNIs that could account for the Feature 53Z trash pit whiteware and porcelain ceramic assemblage consisted of 12 vessels: 5 cups; 1 saucer; 2 plates; 1 bowl; and 3 other vessels (one flatware and two hollowwares). For analysis, hollowwares were categorized as bowls, and flatwares were categorized as plates. Relative ceramic

price indices for the Feature 53Z trash pit were calculated independently for 1) plates, 2) bowls, and 3) cups/saucers, and a mean ceramic price index value was calculated for the entire ceramic assemblage. For the ceramic plates, the relative price index value is 2.51. Bowls produced a value of 1.92, and a value of 2.28 was obtained for the cups and saucers (the teaware assemblage). Tableware (plates and bowls combined) had a mean ceramic index value of 2.22. A mean ceramic price index value of 2.24 was established for the entire ceramic assemblage. A comparison of ceramic index values by socioeconomic status for the Feature 53Z trash pit indicates that the relative value of the ceramic assemblage and its components (1.92 – 2.51) is well within the expected value range for the socioeconomic status rank of semiskilled and unskilled occupations. Table 5 summarizes the relative ceramic price index results for the Feature 53Z trash pit.

The total MNIs that could account for the first generation privy whiteware and porcelain ceramic assemblage consisted of 24 vessels: 8 cups and saucers; 11 plates; and 5 bowls. Relative ceramic price indices for the first generation privy were calculated independently for 1) plates, 2) bowls, and 3) cups/saucers, and a mean ceramic price index value was calculated for the entire ceramic assemblage. For the ceramic plates, the relative price index value is 1.64. Bowls produced a value of 2.10, and a value of 1.75 was obtained for the cups and saucers (the teaware assemblage). Tableware (plates and bowls combined) had a mean ceramic index value of 1.87. A mean ceramic price index value of 1.81 was established for the entire ceramic assemblage. A comparison of ceramic index values by socioeconomic status for the first generation privy indicates that the relative value of the ceramic assemblage and its components (1.64 – 2.10) is well within the expected value range for the socioeconomic status rank of semiskilled and unskilled occupations. Table 6 summarizes the relative ceramic price index results for the first generation privy.

Table 5. Ceramic indices for the Feature 53Z trash pit.

	MNV	Ceramic Index Values	Occupation Rank*
Cups / Saucers	6	2.28	4
Plates	3	1.92	4
Bowls	3	2.51	4
Mean		2.24	4

* The listed occupation rank is that associated with the corresponding ceramic index value.

Table 6. Ceramic indices for the First Generation Privy.

	MNV	Ceramic Index Values	Occupation Rank*
Cups / Saucers	8	1.75	4
Plates	11	1.64	4
Bowls	5	2.10	4
Mean		1.81	4

* The listed occupation rank is that associated with the corresponding ceramic index value.

Discussion. Of no surprise, consumer choice, particularly with the development of the mass-market during the late nineteenth century, was not practiced uniformly by each household. The primary value of a relative price index analysis is its use in exposing alternate consumption strategies. An index value that is higher or lower than expected, based on documented socioeconomic status, should cause the archaeologist to reexamine the material goods and relevant documents for clues that may not have been previously noticed about the consumption practices and social conditions of the household being studied. It goes without saying that an index value higher than expected is not simply an indication that the site's residents were motivated by emulation and conspicuous consumption.

A close fit between the etically defined socioeconomic status of the residents of 1320-1/2 Elmwood Avenue and the mean relative price index value for the entire assemblage suggests, somewhat anti-climatically, that these individuals were not devoting a disproportionate %age of their income on ceramic goods. Looking only at the mean ceramic assemblage value, however, obscures possible variation occurring within the ceramic assemblage. It is immediately apparent that the prevalent ceramic ware type is teaware (cups and saucers) compared with tableware (plates and bowls) by a ratio of just over 4:3. In order to discern possible differences between these assemblages in terms of ceramic price index values, a t-test for statistical significance was performed on the teaware and tableware assemblages. The null hypothesis is: no difference exists between the relative value of the teaware and the relative value of the tableware in the ceramic assemblage. The calculations produced a t-value of 1.70 with 53 degrees of freedom and a probability of $p<.05$. There is, therefore, a 95 % probability that the relative value of the teaware assemblage is significantly greater than the relative value of the tableware assemblage. This difference indicates that the residents

of 1320-1/2 Elmwood Avenue invested more in their teaware than tableware. Additionally, although not used in the calculations, the assemblage contained fragments of a molded porcelain child's tea set (one cup).

It is worth emphasizing at this point that statistical significance does not equate with social significance. Statistical tests, explains Warner (1998:198), are useful methods for determining similarities and differences. They are not designed to indiscriminately reveal patterns of social behavior or self-evident conclusions. To explore some of these patterns of social behavior that the teaware data indicates and the social significance it may have held for the residents of 1320-1/2 Elmwood Avenue, I examine the place tea held in late nineteenth-century American society.

By the last quarter of the nineteenth century, the act of taking tea was a firmly established, idealized, American ritual of genteel behavior. While the practice of taking tea was initially the product of seventeenth-century European aristocracy, it soon spread across all socioeconomic strata, taking on a diverse range of social meanings for different social groups—from a formal social event to an informal family gathering (Warner 1998). By the late nineteenth century, many African Americans and other socially marginalized individuals sought to demonstrate their suitability to social and consumer citizenship by embracing the materialism that went along with these genteel behaviors (Mullins 1999). This materialism allowed African Americans to represent themselves as full participants in society and consumer culture. To own and embrace the proper material goods meant that one shared the culture's conception of the formal characteristics of respectability (Grier 1988).

The relative price index analysis suggests that the residents of the 1320-1/2 Elmwood Avenue property were living within their economic means, as implied by their occupations; however, the analysis also indicates that they were spending different levels of their income on different categories of goods. Materials associated with the taking of tea are instruments of public display—visible indicators that they shared, and more importantly, understood, the intricacies of how popular culture and ideology defined social respectability. Tablewares, on the other hand, are less visible materials, reserved more for private than public use. From the data, it appears that the households associated with the Feature 53Z trash pit and the first generation privy allocated a greater %age of their available income (and possibly attached a greater degree of significance) to materials associated with genteel behavior and consumer citizenship than to materials reserved for more domestic behaviors.

Commodity Flow and National Market Access

A commodity flow analysis examines patterns of household consumption from a supply-side economic perspective. The Commodity Flow Model (Riordan and Adams 1985) predicts the spatial distribution of household consumer goods in terms of geographic and market access areas. Geographers use the term commodity flow to describe how goods move from manufacturer to consumer (Pred 1970). Within an archaeological context, manufacturer location is derived primarily from makers' marks. The assumption behind commodity flow is that access to consumer goods is dependent upon the physical availability of goods. Availability of goods, in turn, is dependent upon the factors identified above. In other words, you cannot buy from a store what a store does not carry. Any deviation from the predicted pattern of goods present in an assemblage must be explained. As with relative price indexing, congruence with and deviation from expected patterns of commodity flow are a source of insight into consumer strategies.

Geographers use the term commodity flow to describe how goods move from manufacturers to consumers. Commodity flows are composed of five factors: 1) the type of goods being manufactured; 2) the geographical location of the producer; 3) the geographical location of the consumer; 4) the transportation network used to move the goods; and 5) the volume of the goods being moved.

One can look at either a particular commodity flow or at commodity flows (plural). A particular commodity flow is the link that exists between a single manufacturer and a specific area of consumption. For example, you could look at a particular commodity flow between a glassmaker in New York City and the town of Winnemucca, Nevada. This flow would be composed of the commodity type (glass), the number of goods being moved (the volume), and how those goods moved from New York City to Nevada (the transportation network) (Crockett 2003).

Commodity flows (plural), on the other hand, are the sum of all individual flows on a regional, national, or international scale. For example, you could look at commodity flows from the Northeast to the Southwest or from Western Europe to America. In this case, all flows (and their components) are combined to produce an overall picture of how goods move from producer to consumer (Crockett 2003).

The geographer Allen Pred (1970) developed a typology of commodity flows based on industry type and market access. Industry was divided into three types: 1) Raw Material Industries extract raw materials to be transported elsewhere to be manufactured into finished goods; 2) Market Oriented Industries, the industry type examined here, serve regional and national markets; and 3) Labor Related Industries manufacture finished goods that either have very low production costs per unit or are of such high value that transportation costs are not a factor.

Market access was arbitrarily defined as the % of access below New York City. Figure 7 illustrates how Pred divided the county into three main access areas and different %ages of access below New York City. These market access areas are: 1) High Access (0 to 25 % below New York City); 2) Intermediate Access (25 to 40 % below); and 3) Low Access (more than 40 % below New York City). In other words, Pred assumes that the residents of New

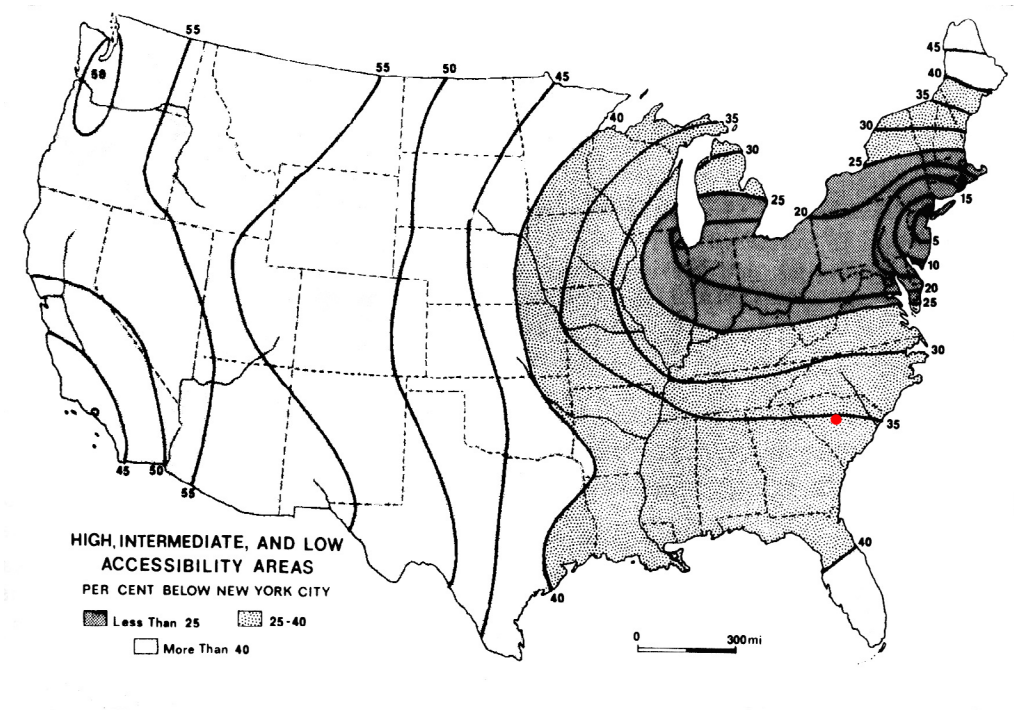


Figure 7. Map showing how Pred (1970) divided the country into market access areas and percentages. The dot indicates the location of Columbia, South Carolina (used by permission of Timothy B. Riordan; redrawn by Ana Albu).

York City have full access to manufactured goods and that consumers living away from New York City have less than full access to those same goods (e.g. a consumer living in Columbia, South Carolina, has 35 % less access to goods than a consumer living in New York City).

There are two different ways of measuring commodity flow—one based on artifact frequency, the other on company frequency. Artifact frequency was developed by Timothy Riordan and William Adams (Riordan and Adams 1985), who applied Pred's typology to several nineteenth- and twentieth-century sites around the country. They hypothesized that: "when located in different geographic regions, sites having the same access to the national market will show greater similarity to each other than to sites having different access, even when located in the same region" (Riordan and Adams 1985:8).

Comparing artifact frequency by access area, Riordan and Adams measured the total volume of goods moving from manufacturers to consumers. This volume of goods is independent of the actual number of flows. For example, a single manufacturer in a given access area producing 1,500 objects of a particular type would be the same as 10 manufacturers in the same access area each producing 150 objects of the same type. It is the volume of goods moving from one access area to another that is important.

In 2001, William Hampton Adams (Adams et al. 2001) suggested a second way of measuring commodity flow based on company frequency instead of artifact frequency. He argued that comparing company frequency by access area avoids biases caused by reuse and artifact breakage. With this approach, the total number of flows between manufacturers and consumers in different areas are measured—independent of the volume of goods moving within these flows. For example, 10 manufacturers in a given access area each producing 100 objects of a particular type would generate the same result as 10 manufacturers in the same access area each producing 500 objects of the same type. It is the actual number of links, or flows, that exist between various manufacturing locations and a particular consumption area that are important.

Elsewhere, I suggested three applications of the Commodity Flow Model (Crockett 2003, 2005, 2011). The first application is that of a predictive pattern—essentially a test for site comparability. Since commodity flow largely determines the range of goods available in a market economy, the Commodity Flow Model is an effective way of testing to see if the site under study is subject to the external factors that comprise commodity flows. In other words, if the pattern of observed goods 'fits' the pattern of expected goods, then observed variation within assemblages is the result of factors other than market location, transportation networks, or production forces. If

Table 7. Summary of Feature 53Z trash pit artifacts (MNI) associated with identifiable maker's marks.

Manufacturer	Type	City	State	Mfg. Date	Access Area	n	Cat. No.
"… RMIO … / … MOR …"	Glass	?	?	?	?	1	53Z-33
?	Glass	?	?	1885+	?	1	53Z-43

observed patterns do not 'fit' expected patterns, then the archaeologist must first account for at least some of the observed assemblage variation by examining commodity flow variables before examining the effects of consumer choice on assemblage composition.

The second application of the Commodity Flow Model is to look at how the national market changed over time. Although this application of the model is not discussed further in this paper, I suggested that over time, Intermediate Access Area manufacturers will increase their flows at the expense of the High Access Area, but in Low Access Areas the increase will be at the expense of the Intermediate Access Area. This occurs since neither Intermediate nor Low Access Area manufacturers are able to overcome the distribution networks already established by High Access Area manufacturers, and, due to transportation costs, Low and Intermediate Area manufacturers are competitive only within their own region.

The Commodity Flow Model is also a useful way of evaluating consumer preference for locally versus nationally manufactured goods—the third application of the model. Preference can be approached in two ways: the first method looks at change over time within the same site, while the second examines how a site compares with national trends. In most studies, local preference for goods is determined by looking at both the ceramic and glass assemblages. However, ceramic goods might not be the best indicators of changing preference for locally produced goods, since the location of these manufacturers is determined largely by raw resource availability. Consequently, comparable manufacturers are not able to develop in other local areas, therefore necessitating the importation of these goods from nonlocal manufacturers, such as those in East Liverpool, Ohio, where quality clay is abundant. Conversely, by applying the Commodity Flow Model to goods produced using materials and technologies that exist independent of geographic location, changes in the preference for locally versus nationally marketed goods are made clearer. A good example of a manufacturing process equally available to all, and one that survives well in the ground, is the glass industry. Note that what is being analyzed here is the flow of glass containers and other goods and not the contents of those containers.

The second method for determining preference for locally versus nationally produced goods springs from an assertion put forth by Paul Mullins (2001). Mullins argued that postbellum African-American tenant farmers participated in the national market to a greater degree than white tenant farmers. This raises the question: is there a way to measure degrees of market participation using only material goods? Commodity flow might be one way. By knowing, at a national level, the artifact volume and company distributions for market access areas for different periods of time, it might be possible to calculate the frequencies for a given site, match the %ages, and see where the site fits within the national market evolution timeline. This might be a good proxy measure for a site residents' degree of participation in the national market; a way of identifying if the residents were participating in the national market to a greater or lesser degree than other comparable sites at a given time. As of this writing, not enough sites have been analyzed for commodity flow to develop a baseline data set to test this hypothesis.

Findings. The Feature 53Z trash pit contained two artifacts representing two different maker's marks. However, neither of the marks were traceable to their location of manufacture. The first generation privy contained 18 artifacts representing 18 different makers' marks. However, only 8 of the marks were traceable to their location of manufacture. Due to their fragmentary nature, four marks were unidentifiable.

Tables 7 and 8 list each maker's mark and its associated market access area. Table 9 summarizes the artifact and company frequency distributions by access area. Taken together, a comparison of artifact frequency by access area for the two assemblages show that 50.0 % of the total number of recovered artifacts with identifiable maker's marks originated within the High Access Area, 50.0 % of the goods came from the Intermediate Access Area, and 0.0 % were from the Low Access Area, while 0.0 % were from the Foreign Access Area. With company frequency by access area, 50.0 % of the companies manufacturing consumer goods imported into the Columbia, South Carolina area were located within the High Access Area, 50.0 % were located within the Intermediate Access Area, 0.0 % were located within the Low Access Area, and 0.0 % of manufacturers were located in the Foreign Access Area.

Discussion. With such a small sample size, it is difficult to draw any definite conclusions. Nevertheless, the data are suggestive. If the Commodity Flow Model is a valid way of determining the degree in which the geographic location of a site within the national market influences the composition of late nineteenth- and early twentieth-century household consumer goods, then there should be a close fit between the model's predicted pattern of artifact distribution and the observed archaeological pattern. Specifically, when artifact frequency is compared by access area, the highest frequency of artifacts will originate within the High Access Area. The next most frequent manufacturing location will be the Intermediate Access Area, with the least frequent U.S. production location in the Low Access Area. Household consumer goods coming into the Columbia, South Carolina, region from the Foreign Access Area will comprise the smallest frequency of artifacts.

Comparing company frequency by access area, the spatial distribution of manufacturers should be comparable to the spatial distribution of artifacts. For U.S. production, the highest %age of manufacturers should be found within the High Access Area, followed by Intermediate Access Area producers and, lastly, Low Access Area manufacturers. Foreign Access Area manufacturers should account for the smallest %age of represented companies.

The Feature 53Z trash pit and first generation privy

Table 8. Summary of first generation privy artifacts (MNI) associated with identifiable maker's marks.

Manufacturer	Type	City	State	Mfg. Date	Access Area	n	Cat. No.
UID	Glass	?	?	?	?	1	55N-34
UID	Glass	?	?	?	?	1	55N-36
"… RCE …" "… BO …"	Glass	?	?	?	?	1	55N-48
"PORC … / FOR MASON …"	Glass	?	?	?	?	1	55N-48
"… MFORD"	Metal	?	?	?	?	1	55N-49
UID	Ceramic	?	?	?	?	1	55N-58
UID	Glass	?	?	?	?	1	55P-24
" … B …"	Glass	?	?	?	?	1	55P-43
UID	Ceramic	?	?	?	?	1	55R-2
UID	Ceramic	?	?	?	?	1	55R-8
"MALYDOR // MANFG. Co. // LANCASTER // OHIO"	Glass	Lancaster	Ohio	?	High	1	55N-51
"I.R.C. CO. // GOODYEAR 1851" – India Rubber Comb Company	Rubber	?	New York	1854–1898	High	1	55P-30
PARIS // INJECTION BROU // 102 RUE RICHELIEU"	Glass	?	New York	?	High	1	55P-53
"U.M.C. / S H / .38 S & W"	Metal	Bridgeport	Connecticut	1867-1911	High	1	55R-15
"… SOUTH …"	Glass	?	South Carolina	?	Intermediate	1	55N-33
South Carolina Dispensary	Glass	?	South Carolina	1891-1907	Intermediate	1	55N-39
"BRIAN E. MIOT // DRUGGIST / COLUMBIA, S.C."	Glass	Columbia	South Carolina	1895-1938	Intermediate	1	55P-54
"W.C. FISHER / DRUGGIST / COLUMBIA / S.C."	Glass	Columbia	South Carolina	1871-1908	Intermediate	1	55P-55

assemblages clearly fit the pattern predicted by both versions of the Commodity Flow Model for the spatial distribution of household consumer goods within the national market. Ignoring the bias caused by small sample size, the residents of 1320-1/2 Elmwood Avenue engaged in consumption practices that deviated little from the practices employed by the majority of U.S. residents during the late nineteenth and twentieth centuries. Considering that by 1900, 65 % of all U.S. production took place in the Northeast (Spencer-Wood 1987a), it is not surprising that 50.0 % of the manufacturers represented were located in the High Access Area. What is surprising is that none of the remaining maker's marks were associated with goods from Low Access Area manufacturers.

Conclusion

This article presented a three-step methodology for investigating consumption practices in an archaeological context. Given that consumption practices operate within specific social-historical contexts that partially structure these consumption practices, this three-step methodology focused on understanding the conditions and constraints of the environment within which consumer practice took place. The first methodological step involved understanding market integration through ceramic consumption practices. This analysis suggests that the residents of the 1320-1/2 Elmwood Avenue property were less integrated into the national market system than the average American. The second methodological step examined the relationship between ceramic consumption practices and socioeconomic status via ceramic price indices and occupation. Data from this analysis suggests that the residents of the 1320-1/2 Elmwood Avenue property were devoting an average %age of their income on ceramic goods. Further, this analysis suggests that residents devoted a statistically-significant greater amount for teaware than tableware. The third and final methodological step involved understanding the flow of commodities and national market access. This analysis suggests that the residents of the 1320-1/2 Elmwood Avenue property were not accessing the national market in any unexpected ways. Together, these three analyses suggest that variation within the material culture of the residents of the 1320-1/2 Elmwood Avenue property was primarily the product of personal choice, resource allocation, and retailer availability. Further, this analysis demonstrated a method for linking production with consumption for a more complete picture of consumerism. Too often, only consumption is looked at with no consideration of market forces. This can lead to a situation

Table 9. Artifact and company distributions by Market Access Area.

	Artifact Frequency		Company Frequency	
	N	%	N	%
Access Area				
Low	0	0.0	0	0.0
Intermediate	4	50.0	4	50.0
High	4	50.0	4	50.0
Foreign	0	0.0	0	0.0
Total		100.0		100.0

where market variation is inadvertently ascribed to individual consumer behavior or choice.

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Analysis of an Allendale/Brier Creek Chert Blade Tool from Lake Marion, Clarendon County, South Carolina

Robert C. Costello

During the fifty year history of the Archaeological Society of South Carolina, discoveries by private collectors and avocational archaeologists have contributed substantially to an understanding of the prehistory of South Carolina. Their contributions, many of which formed the foundation of the South Carolina Collectors Survey as well as the pioneering efforts of Jim Michie in conceiving the survey, were graciously recognized by Charles and Moore (2018) as making their monograph possible. Likewise, recent articles in this journal by Goodyear (2014), White (2016), and Wilkinson (2017) relied heavily upon ongoing surveys of private collections. The relationship between private collectors and professional archaeologists in South Carolina is exemplary and has been a great inspiration and motivation for this author in his efforts to study and document South Carolina artifacts (Costello 2018).

The artifact described herein comprises one member of a surface collection made over a period of 30 years along the shoreline of Lake Marion, primarily in the Goat Island/Cuddo area of Clarendon County, by Ms. Callie Steedley of Summerton, South Carolina. It was brought to the attention of the author by Mr. Zach Hodge, a University of South Carolina Sumter student. Since the subject was reported to have been surface-collected rather than excavated from a chronologically stratified context, its cultural affiliation cannot be determined with certainty. However, initial examination suggested strongly that the possibility of a Clovis technological affiliation should be explored and that this artifact merited in-depth analysis and documentation for the permanent South Carolina archaeological record

The subject was manufactured from Allendale/Brier Creek chert of a type which based upon macroscopic examination most closely fits the description of Category 7a Silicified grainstone of Upchurch (1984). It quite possibly was derived from the general area of the Allendale-Brier Creek Clovis Complex (Sain and Goodyear 2012). This raw material source is approximately 70 miles from the location at which the artifact was recovered. Allendale-Brier Creek chert is a high quality lithic material employed by practitioners of Clovis, as well as subsequent lithic technologies in the Lake Marion area. Data on its geographic distribution among diagnostic artifacts from private collections has provided evidence regarding social behavior of Paleoindians in South and North Carolina (Goodyear 2014).

In the following study, we systematically evaluate this artifact in terms of both qualitative and quantitative attributes which lead to its classification as (1) blade, (2) tool, and (3) possible Clovis technological origin.

The subject is shown in duplex composite view with scale in Figure 1, dorsal surface on left, ventral surface on right. Based upon its parallel or subparallel lateral margins and length/width ratio exceeding 2, the subject fits the broadest definition of blade, e.g. per Andrefsky (2005). The rationale for its classification as a blade rather than blade-like flake is elaborated in the following paragraph. Intentional retouch flaking of its edges and to its proximal end, also to be elaborated below, establishes identification of this artifact as a tool.

Qualitative examination of this artifact was undertaken using the blade attribute value approach of Sain and Goodyear (2012) in order to assess its classification as a blade rather than blade-like flake. The following observations are the basis of this analysis. The subject possesses more than two flake scars parallel to its long axis (Figure 1, left image), a cross-sectional profile that varies from triangular to trapezoidal, relatively parallel lateral

Figure 1. Composite view, dorsal on left, ventral on right.

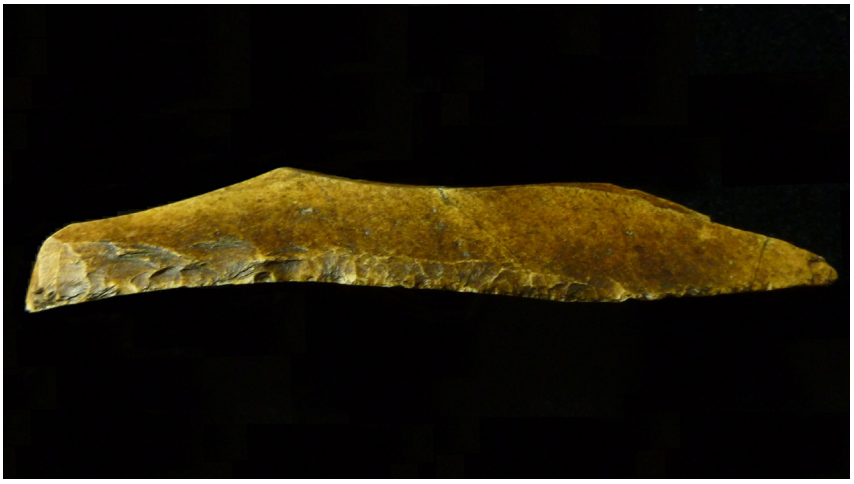

Figure 2. Left lateral edge modifications, proximal end on right.

margins, a platform angle of >60°, a flat, diffuse bulb of percussion, and a distal thickness exceeding its proximal thickness. The preceding leads the author to assign a blade attribute score of 10-12, well above the value of 7 differentiating technological blades from blade-like flakes. Complete absence of dorsal cortex leads to its classification as a tertiary or non-cortical blade.

Further qualitative examination reveals that none of the blade side edges or ends remain unmodified. As

Figure 3. Right lateral edge modifications, proximal end on left.

elaborated below, all edge flaking modifications (retouch) are unimarginal, resulting in classification of this artifact as a unimarginal flake tool per Andrefsky (2005). Retouch of the original blade was accomplished exclusively by using the ventral surface edges as platforms, resulting in all retouch flake scars occurring on the dorsal side. Likewise all original flake scars from the blade manufacturing process appear on the dorsal side (Figure 1, left image). A nick resulting from curation damage is evident as a light-colored area on the ventral surface of the left lateral edge toward the proximal end (Figure 1, right image)

The left lateral edge (Figure 2) exhibits fine retouch, as well as use wear consistent with utilization as a side scraper. The right lateral edge (Figure 3) exhibits initial unimarginal flaking and minimal use wear, with possible light retouch in the center area

The distal end (Figure 4) has been cleaned up by unimarginal retouch which produced angles appropriate for use as an end scraper (Andrefsky 2005:74), but it exhibits no macroscopic evidence of such use. Minor curation damage is evident on the distal end to the right of center

The proximal end (Figures 5a, 5b, 5c) appears to have been modified for hafting. A notch is visible on the right lateral side, and one or more small thinning flakes have been removed from the dorsal surface (Figures 5b, 5c). The size and shape of this area would be suitable for hafting into river cane (Costello and Steffy 2018). The above-described modifications of both lateral edges and of the proximal and distal ends establish classification of the Steedley blade as a tool.

Multiple qualitative observations are consistent with attribution of a possible Clovis technological origin to this blade tool. The ventral surface (Figure 1, right image) is smooth, with minimal visible compression ripples. Likewise, the small platform and minimal bulb of percussion (Figure 5a) are typical features of Clovis blades (Bradley et al. 2010).

Quantitative attributes which have been employed to characterize Clovis blades and blade tools and to distinguish them from blade-like flakes fall primarily into two categories: directly measured quantities and calculations derived therefrom. Directly measured blade attributes employed in this study are mass, maximum length, maximum width, maximum thickness, platform width, platform depth, platform angle, depth of curvature, interior surface length, and angles formed between tangents to the interior surfaces at the proximal and distal ends, respectively. The latter data are employed to calculate degree of curvature. Calculated quantities derived from measured data employed herein are patterned after the datasets of Collins (1999), Bradley et al. (2010), and Waters et al. (2011)

Quantitative attribute data for the Steedley artifact are presented in Table 1. We include comparative mean data from Bradley et al. (2010) and Waters et al. (2011) for known Clovis blades in order to ascertain the degree to

Figure 4. Distal end retouch from dorsal aspect.

which the attributes of the subject artifact are consistent with its possible Clovis technological identity. The Waters et al. dataset represents non-cortical blades, a category to which our subject belongs by virtue of the absence of cortex on its dorsal surface.

Comparison of direct measurements of the Steedley blade with mean attribute values from our selected comparison datasets reveals that the subject is smaller in length, width, thickness, and mass than the mean values for both sets and closer to the values in the Collins et al. dataset than those in the Bradley et al. dataset. Two possible explanations for this result are as follows. First, since the Steedley blade is a tool rather than simply an unmodified blade, its size has been reduced from that of the original blade by its modification as a tool. Second, quantitative attributes of the Steedley blade correspond more closely with those of the Collins et al. dataset than those of the Bradley et al. dataset because the former represents only non-cortical blades that are derived from a later stage of the blade core reduction sequence than are cortical blades. In contrast, the Bradley et al. dataset includes cortical blades derived from earlier stages of the blade core reduction sequence. As an additional comparison, the length of the Steedley blade tool falls within the range of values reported for Clovis blades reported from the Coastal Plain of South Carolina, 74–125 mm, with a mean length of 96.9 mm (Doug Sain personal communicatoin 2018a.

Metric platform attributes, including both small size and a steep platform angle, are consistent with those of both the comparison Clovis blade datasets included in Table 1. It must be noted that Waters et al. evidently defined platform angle in terms of the original platform angle on the core, making it the approximate supplement of the platform angle as defined by Bradley et al. and as employed in our dataset. Data from all three sources agree well within the precision of measurement for this attribute. Also, as noted above, the small bulb of percussion on the ventral surface distal to the platform is also a typical Clovis blade attribute (Bradley et al. 2010).

Curvature data merit further exploration. For a single value of index of curvature to be applicable, blade curvature must be constant in the lateral dimension at any longitudinal position along the blade. In the case of the Steedley blade tool, there is pronounced twist in the orientation of the ventral plane, as elaborated below. The listed value of 5.3 for the Steedley blade index of curvature applies to the maximum curvature at the center of the blade between lateral edges; index of curvature values vary from approximately 2.8 at the left lateral edge to 9.7 at the right lateral edge. Waters et al. did not furnish data on degree of curvature; the value of approximately 21 degrees for the Steedley blade is comparable to the mean value of 25 degrees reported by Bradley et al. for Clovis blades from the Gault site.

Boldurian and Hoffman (2009) introduced another Clovis blade attribute: point of maximum blade curvature. "The *point of maximum blade curvature* is the point along the blade's trajectory at which it expresses its maximum curvature." In the case of our subject blade, the value of this attribute is observed to vary with lateral as well as longitudinal position due to the aforementioned rotational twist in the ventral plane of the blade. Qualitatively, we observe that the point of maximum blade curvature is closer to the distal end on the left lateral edge than on the right lateral edge (Figure 6), due to a reversing rotation or twist of the ventral surface. Although this feature is not reported for blades commonly illustrated as Clovis blades, it merits documentation (Doug Sain personal communication

Figure 5a. Proximal end including platform area at top, ventral view. The dark line in the center represents an ancient healed fracture in the lithic material.

Figure 5b. Proximal end including platform area, dorsal view.

2018b). Possible explanations of this feature in terms of specific blade manufacturing techniques, properties of the lithic material, and lithic fracture mechanics are beyond the scope of this study. By the same token, one cannot determine with certainty whether this blade was manufactured from a conical or wedge-shaped core based upon its curvature, as its variable curvature values lie within the limited ranges of values for both types of cores given by Bradley et al.,(2010) in Table 2.2.

Figure 5c. Proximal end from right lateral aspect.

In summary, although the Steedley blade tool was surface-collected rather than excavated from a chronologically stratified context, comparison of the Steedley blade tool dataset with data from Gault Site Clovis blades (Table 1) establishes consistency with a Clovis technological affiliation for this artifact. As detailed above, many of its quantitative attributes are shown to be within the range reported for blades recovered from stratified Clovis contexts, such as the Gault site in Texas (Bradley et al. 2012) and from several sites reported by Collins (1999). Likewise, its classification as a blade tool rather than blade-like flake tool is supported by its blade attribute value score of 10-12 using the system employed by Sain and Goodyear (2012). Uncertainty in this score is based upon point value to be attributed for the criterion of parallel lateral edges. As described above, its identification as a tool is based upon modifications to both lateral edges, the distal end, and the proximal end.

A Clovis technological presence along the Clarendon County shoreline of upper Lake Marion has been supported by previous studies, including reports by this author. Based upon extensive data from private collections recorded in the South Carolina Paleoindian Database, Goodyear (2014) documented evidence for a Paleo presence in the broader COWASSIE Basin area, which includes the area in which the Steedley blade was recovered. Costello (2016) presented evidence suggesting a Paleo presence including Clovis along the Clarendon County shoreline of upper Lake Marion based largely upon his surface-collected projectile points and preforms that were manufactured primarily from indigenous orthoquartzite. Thus, the Steedley blade tool is not an isolated representative of the Paleo era from upper Lake Marion, but rather is an additional piece of technological evidence of said presence. Since it was manufactured from Allendale/Brier Creek chert, there is a distinct possibility that it represents an export from the Allendale chert quarries near the Savannah River, approximately 100 km distant from the Lake Marion shoreline where it was recovered. Thus, its presence in Clarendon County contributes to data concerning mobility and/or trade patterns of ancient South Carolinians.

It must be noted that a recent report on lithic technology at the Goodson Shelter in Oklahoma, (Eren et al. 2018) has raised serious questions regarding the definitive identification of artifacts as Clovis based solely upon their technological attributes. Thus, the subject is identified herein as possibly rather than probably of Clovis technological origin. Regardless of whether the Steedley blade tool ultimately can be proven to be a product of Clovis technology, the author is convinced that this report constitutes a worthwhile endeavor.

At the time of this writing, the author was exploring the feasibility of further documentation of the features of this artifact via three-dimensional scanning technology,

Figure 6. Right lateral edge view showing twist. Proximal end on left. Note that curvature is greater on right lateral edge (top front) than left lateral edge (bottom rear), and that the point of maximum blade curvature is closer to the distal end on the left lateral edge than on the right lateral edge.

which holds promise of quantitative documentation of features including ventral plane twist. Hopefully, the evolution of South Carolina archaeology will include incorporation of such developing technology into research databases. One can envision artifact databases that include both three-dimensional scans of each artifact and precise location data. Collection of the latter is well within the capabilities of the present generation of "smart phones," and avocational archaeologists should be encouraged to use the technology at their disposal to contribute maximally to the South Carolina archaeological record as The Archaeological Society of South Carolina enters its second fifty years.

Table 1. A comparison of Steedley blade attribute values with average data from Clovis blade collections

	metric data and ratios									platform attributes			curvature	
data set	length	width	thickness	mass	w-l ratio	l+w+t	l/(l+w+t)	w/(l+w+t)	t/(l+w+t)	angle	width	depth	index of curvature	degree of curvature
S	77.58	24.48	8.57	16.18	3.17	110.6	0.701	0.22	0.077	113	5.10	2.22	5.3*	~21°
B	96.2	28.4	12	32.4	3.6	136.1	0.71	0.21	0.09	111	6.9	3.1	8.6	25°
W	81.4	22.9	8.7	17.4	3.80	113.09	0.72	0.20	0.07	111**	7.5	3.0	7.81	N/R

Abbreviations:

S = Steedley blade from Clarendon County, SC

B = average data from Bradley, et al. (2010), Table 2.4, pp. 50-53, for Gault Clovis blades

W = average data from Waters, et al (2011), Table 18, pp. 74-75, for non-cortical regular blades from Gault.

N/R = not reported

Units associated with listed numerical attribute values are as follows: linear measurements in mm, mass in g, angles in degrees, index of curvature a dimensionless ratio.

* The index of curvature varied laterally from 2.8 to 9.7 due to asymmetric twist of this blade. The value of 5.3 is for the center of the blade.

** Waters, et al. listed a value of 69 degrees for the platform angle. 111 degrees, the supplement of 69 degrees, fits the definition of platform angle on the blade employed by Bradley, et al., in their data and by the author in this report.

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Education, Excavation, and Outreach: The Revival of the Coastal Carolina University-Brookgreen Gardens Partnership for Archaeology

David T. Palmer

Abstract

Brookgreen Gardens, a non-profit, outdoor art and nature preserve near Pawley's Island, South Carolina, was home to four rice plantations prior to the Civil War. These were: The Oaks, Springfield, Laurel Hill, and Brookgreen. These and other rice plantations along the Waccamaw neck had the largest holdings of enslaved Africans in North America prior to the Civil War and were owned by the wealthiest men in the United States. The late Professor James Michie of Coastal Carolina University carried out the first archaeological investigations on the Brookgreen Gardens property, followed by projects conducted by other professional archaeologists and avocationals. In 2015, the partnership between Brookgreen Gardens and Coastal Carolina University was revived with the author's hiring as a historical archaeologist to fill a position created in memory of Professor Michie. Investigation of a portion of the Brookgreen property associated with Brookgreen Plantation's slave housing area was conducted in 2016 as part of a Coastal Carolina University archaeological field school, and further work was done as part of a volunteer excavation in 2017. In the course of these latter field projects, the author and project team members found evidence of an additional area with housing for the enslaved of Brookgreen Plantation, as well as a compacted surface that may be the result of yard sweeping at two churches associated with the African-American community of Brookgreen Plantation. We also collected clay samples to source historic brick clay of Brookgreen Plantation and engaged in public outreach with site visitors.

Background

Located in the Lowcountry of South Carolina, part of the Gullah-Geechee Cultural Heritage Corridor, and minutes from present-day Myrtle Beach, Brookgreen Plantation was one of the largest rice plantations in the United States prior to the Civil War (Figure 1). William Allston inherited the property that would later be named Brookgreen Plantation from his father, John Allston, and built a house there in 1763 around the time of his marriage to Anne Simons (Salmon 2006:9). In 1800, Joshua Ward purchased the property from the Allston-Flagg heirs (Salmon 2006:9). His son (and namesake) Joshua John Ward inherited the plantation, and expanded rice production there during the 1840s to make it one of the largest rice plantations in the United States (Salmon 1981:123; Salmon 2006:9).___ At the time of his death in 1853, Joshua John Ward was one of the largest slave holders in the United States (if not the world), with more than 1,100 captive Africans and African Americans on Brookgreen and his other plantations (Joyner 2009:19, 34; Salmon 1981:123). Joshua Ward, Joshua John Ward's oldest son, inherited Brookgreen and adjacent Springfield Plantations from his father, and was the owner of these properties until his death in 1867 (Salmon 1981:123). The ending of slavery with the Civil War resulted in the demise of large-scale commercial rice production in the

Figure 1. Location of Brookgreen Gardens.

South Carolina Lowcountry

Dr. Lewis Cruger Hasell leased the Brookgreen property from Ward's estate after 1867, and later purchased it (Salmon 1981:123-124). The remnants of Brookgreen and neighboring former rice plantations including The Oaks, Springfield, and Laurel Hill were purchased in 1920 by Dr. J.A. Mood of Sumter, South Carolina, who was a sponsor of the Waccamaw Club, which was a hunting club (Salmon 1981:125). Later, the club became the Brookgreen Club, owned in 1926 by W.S. Griffin of Greenville, South Carolina, who lost the property during the depression to the F.M. Credit Corporation (Salmon 1981:125; Tarbox 1981:97). Wealthy New York businessman Archer Milton Huntington purchased the properties, described as "four colonial estates on the Waccamaw" in a real estate brochure, from the F.M. Credit Corporation in 1930, to be a winter retreat for him and his wife, Anna Hyatt Huntington, who suffered from tuberculosis (Salmon 1981:125; Tarbox 1981:97). A sculptor and patron of sculptors, Anna Huntington and her husband established Brookgreen Gardens as a non-profit organzation to exhibit American figural sculpture outdoors amid native flora and fauna, opening the gardens to the public in 1932 (Salmon 2006:45). Since 1932, Brookgreen Gardens has continued to be open to the public and is organized as a public non-profit. The Huntington's purchase had the effect of preserving the vast property (which also includes part of Sandy Island and Huntington Beach State Park) from more intensive development, but their emphasis was on sculpture, not the history and culture associated with the property itself. The history and cultural significance of the plantations and the captive and free residents were added to the mission of Brookgreen Gardens only in recent decades, but staff members are wholeheartedly committed to making up for lost time.

Reviving the partnership between Coastal Carolina University (CCU) and Brookgreen Gardens, as part of a Memorandum of Understanding, I led a team of students and volunteers in an archaeological investigation of part of the Brookgreen Plantation during a May 2016 field school, and a week-long volunteer excavation in June 2017

This project helped to renew cooperation among Brookgreen Gardens and Coastal Carolina University, which had been dormant since the 2004 death of James L. Michie, Coastal Carolina University professor and co-founder of the Archaeological Society of South Carolina (Figure 2). At Brookgreen Gardens, Michie investigated The Oaks Plantation (Michie 1994, 1995b, 1995c, 1996). His plantation archaeology research also included projects on Richmond Hill, Mansfield, Wachesaw, and Arcadia plantations (Michie 1984, 1987, 1990, 1995a, 1997; Michie and Boyle 1996; Michie and Mills 1988). Michie was beloved by his students and volunteers. After his death, his former students and volunteers chose to endow a tenure-track, historical archaeology position at Coastal Carolina University to honor his legacy of research and outreach in the region.

As the first to hold this position, I held several meetings with Brookgreen Gardens' management and with Professor Michie's former volunteers to introduce myself and to assess needs and interests. In discussion with Brookgreen Gardens' management, we decided that identifying the boundaries of the enslaved African and African-Americans living area of historic Brookgreen Plantation should be a priority, because the former plantation is within the publicly accessible areas of Brookgreen Gardens. We also decided that field efforts should prioritize areas that had not previously been explored.

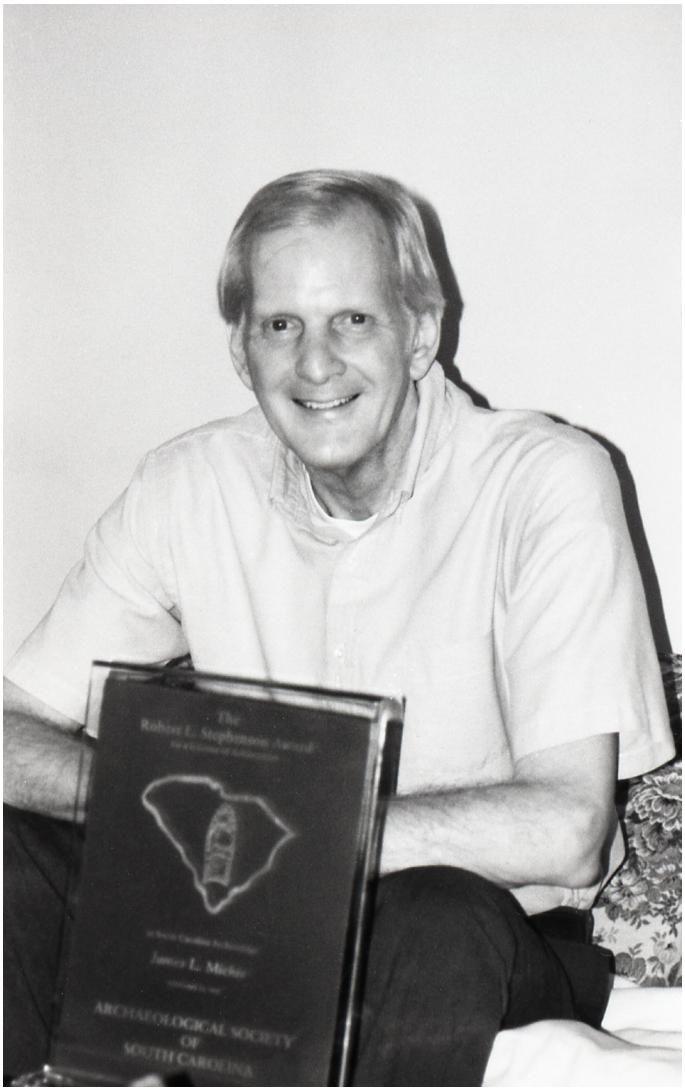

Figure 2. James L. Michie in 1998 (courtesy Coastal Carolina University Media Services).

Archaeological Research at Brookgreen Prior to 2016

The first reported archaeological investigation of the Brookgreen Gardens property was a cultural resources inventory study of portions of the former Oaks and Laurel Hill plantations by Lesley Drucker in 1980, which resulted in eight sites being recorded (Drucker 1980). Two of these are on the former grounds of the Oaks Plantation. The Oaks Landing house site (38GE202) includes domestic structural remains, boat slip features, artifact concentrations from 19th century and early Woodland period occupations, and a shell midden (Drucker 1980:51-69). The Oaks Mill site (38GE203) includes the remains of the brick rice mill on Brookgreen Creek and its associated water channels and feature, as well as a discrete scatter of Woodland period ceramics (Drucker 1980:70-74). At the former Laurel Hill Plantation, six sites were recorded. Site 38GE196 includes the remains of a 1930s house built by the Huntingtons and an earlier 19th-century structure (Drucker 1980:75-77). A small, square tabby foundation of indeterminate function, is 38GE197 (Drucker 1980:78-79). Two enslaved worker occupation areas were recorded, 38GE198 and 38GE201 (Drucker 1980:80-82, 98). A historic earthworks complex, along with the remains of a structure and a probable well, were recorded as 38GE199 (Drucker 1980:83-90). The remains of the Laurel Hill rice mill complex were recorded as 38GE200, the Laurel Hill Rice Mill. This site consists of a fluted brick chimney stack, brick mill building remains, and a barge slip (Drucker 1980:91-97).

The former Oaks Plantation has been the most extensively investigated of the four former rice plantations on the Brookgreen Gardens property. William Weeks followed up on Drucker's initial work at the site with a 1993 survey (Drucker 1980; Weeks 1993). James Michie investigated the rice mill, then focused on the house site and plantation managerial complex of Joseph of Theodosia Burr Alston, conducting block excavations at that site (Michie 1994, 1995b, 1995c, 1996).

Archaeological investigations of the former Brookgreen Plantation began in earnest with a 1997-1998 project directed by William Weeks, Vice President of Facilities and Properties for Brookgreen Gardens. Working from an 1887 map drawn by Marinus Willett (Figure 3), Weeks' team located and excavated the remains of a smokehouse and kitchen associated with the plantation overseer's residence, both of which are now part of the Lowcountry Trail interpretive path (Vivian 1998; Weeks 1999). In 2003, Andrew Agha, also using the Willett map, used shovel test pit survey to locate the approximate boundaries of the enslaved workers' village, noting areas with concentrations of architectural and domestic artifacts, and the degree of integrity/disturbance in the survey area (Agha 2003). Susan McMillan, who had been James Michie's lead volunteer and field assistant, directed surveys in the southern portion of the approximate area of the enslaved workers' village from 2012-2015. McMillan's projects recovered many Antebellum as well as late 19th-and early 20th-century artifacts consistent with domestic occupation, and one feature that may have been a trash burning pit (Daise 2012; McMillan 2012, 2015). No architectural features were found in the course of Agha's or McMillan's fieldwork. The architectural features found by Weeks, and the approximate boundaries of the Agha and McMillan investigations are shown in Figure 4. Landscape feature changes at Brookgreen Gardens since 2003 have occluded the exact positions of the landscape references in Agha's report. Agha did place rebar datums as part of his survey, so once these are relocated, it will be possible to more precisely plot his fieldwork and its results using the coordinates of identified datum points. McMillan and her former volunteers were generous in sharing their reports, working notes, and schematic representations of their survey grid, but these records did not include absolute locations in the form of geographic coordinates. As a

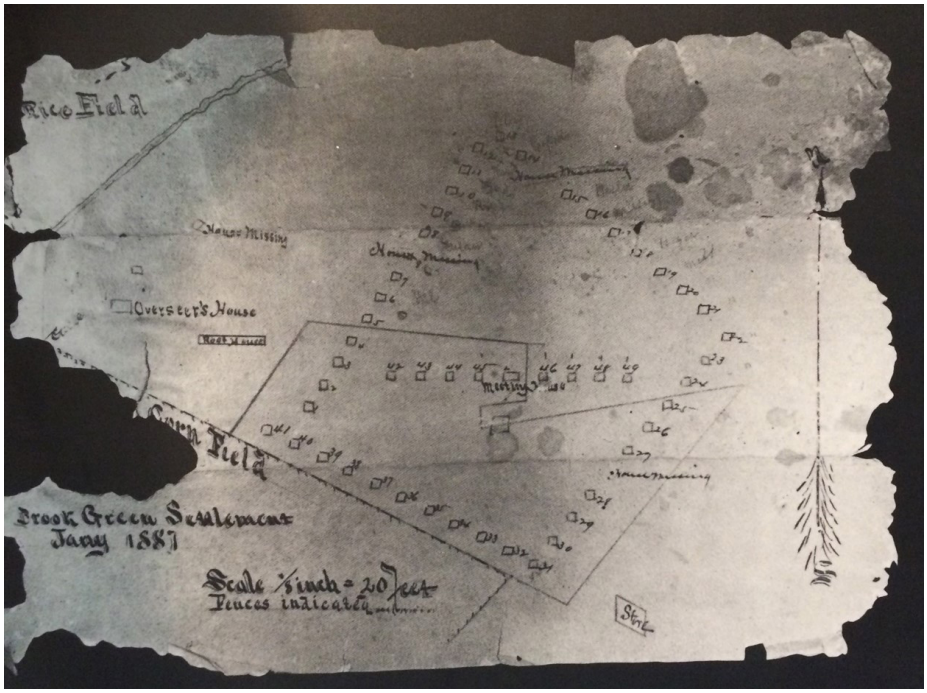

Figure 3. 1887 sketch map by Marinus Willett (Salmon 1981:111).

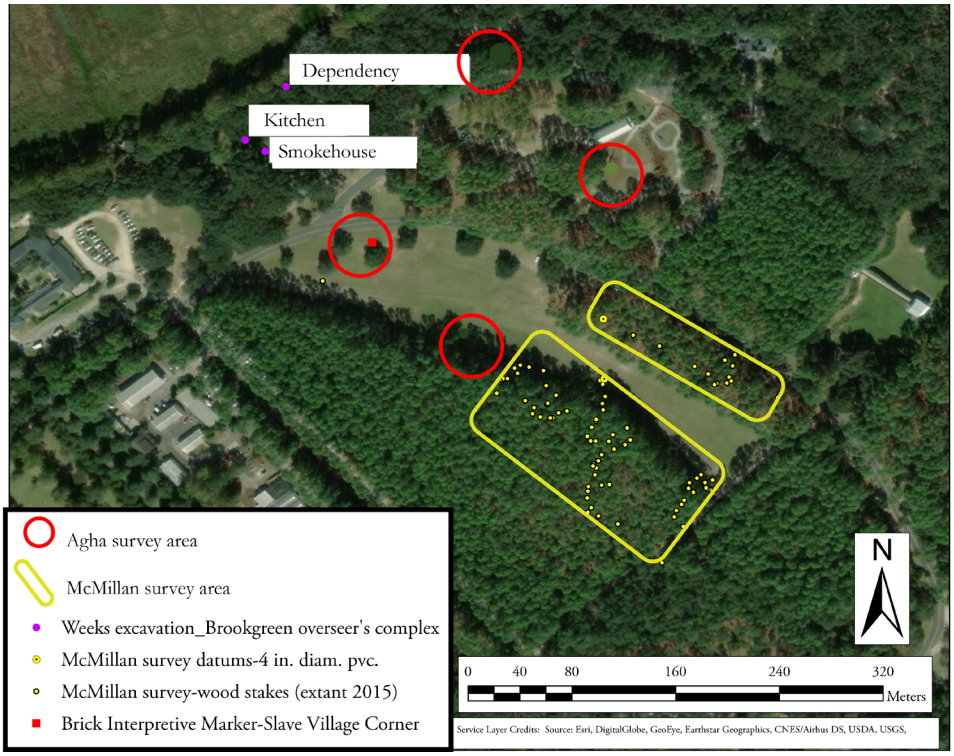

Figure 4. Locations of archaeological investigations of Brookgreen Plantation prior to 2016.

result, I am not able to map all of their survey units with confidence, owing to the incomplete nature of their field records, and lack of a formal map of fieldwork.

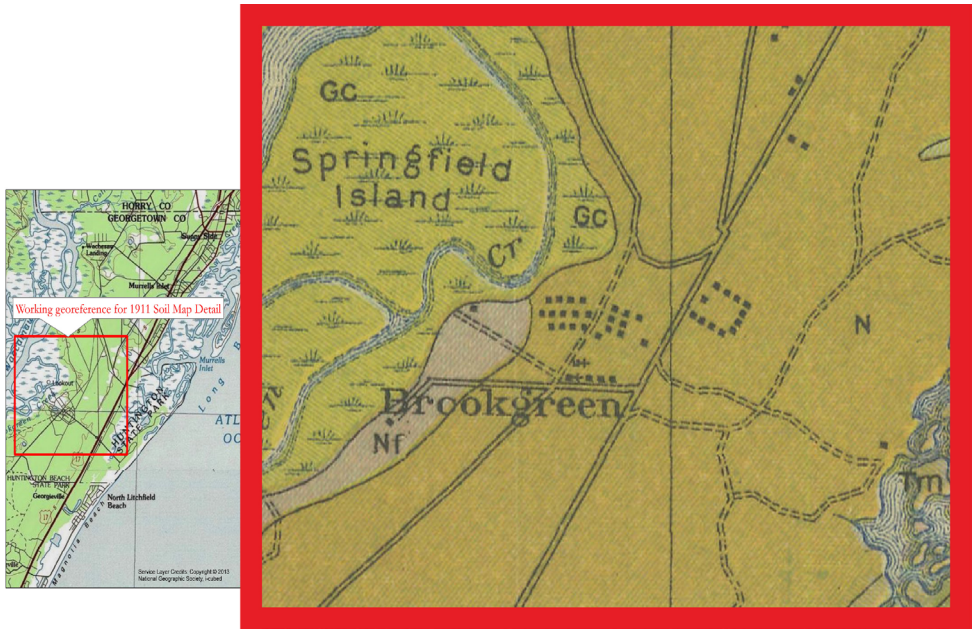

Figure 5. Detail from 1911 soil survey of Georgetown County (McClendon, et al. 1911).

The May 2016 Field School, and the Summer 2017 volunteer week excavation

As with other field schools, my goals for 2016 were multiple: determining the boundaries of the enslaved people's living area (a.k.a. the "slave village") of Brookgreen Plantation, collecting clay samples to begin a study of the source of brick and pottery at Brookgreen Plantation, training undergraduate students in archaeological field methods, and sharing the value of archaeology with the public through outreach activities.

A major research question, with practical ramifications for public interpretation of the site, is the location and extent of the Brookgreen slave village. The exact location and extent is not yet known. What was known prior to 2016 comes from previous archaeological investigation and historic maps (Agha 2003; McMillan 2015; Weeks 1999). The results of these studies point to a plot of land between what is now Joshua Ward Road and William Alston Loop, and a small brick pillar was placed to mark the approximate corner by Brookgreen Gardens.

Our archaeological investigation was guided in part by a 1911 Georgetown County Soils Map located by Joseph Canon, one of my spring 2016 "archaeology of plantations"

Figure 6. 1939 Air Photo which includes Brookgreen Gardens and adjacent rice fields (Agricultural Adjustment Administration, 1939: sheet 4 of 8).

students (Figure 5). This map shows houses laid out in the area now marked with the brick pillar, as well as the south, east, and northeast (Figure 5) (McLendon, et al. 1911). The soils map show structures to the northeast of the presumed slave village location laid out in a similar pattern to those shown as the slave village on an 1887 map drawn by Marinus Willett (Figure 3) (Salmon 1981:111). Outlines of rice fields are still visible along the Waccamaw River, but unfortunately, 1939 air photos do not show evidence of the slave village (Figure 6).

With technical assistance from my Coastal Carolina University geographer colleague, Susan Bergeron, we georeferenced the 1911 map onto modern topographic maps and aerial imagery, which we then used to guide our placement of survey units.

During the 2016 field school, with a group of students and volunteers, we surveyed part of the area with structures depicted on the 1911 map, seeking any remnants of these buildings and their inhabitants. For our survey, we conducted systematic shovel testing at 20 meter intervals, with a total of 35 shovel test pits (Figure 7). In addition to the shovel test pits, we collected artifacts exposed on the surface in the survey area, and augmented these standard, low-tech methods, with ground penetrating radar. With the help of UNC Pembroke Geographer Jesse Rouse, we used GPR to survey portions of our broader survey grid for buried post molds or other archaeological features. Based upon the results of the shovel test pits and GPR survey, we excavated five, one meter square test units

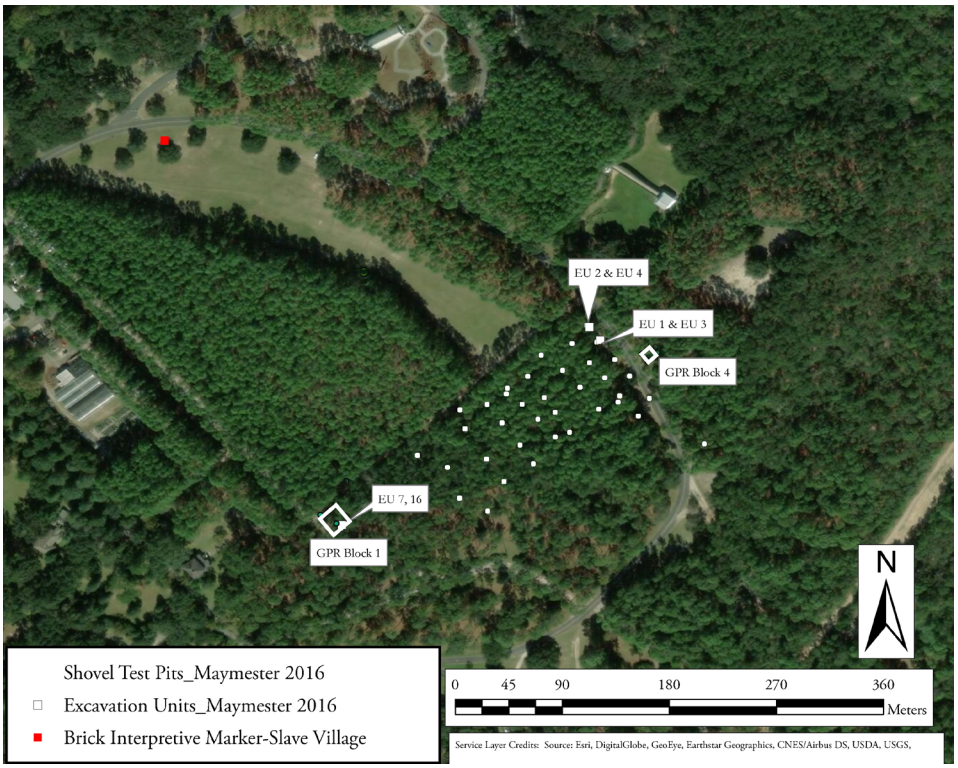

Figure 7. May 2016 archaeological investigations.

We found that artifacts other than charcoal and shell were concentrated in the northeast portion

Figure 8. Post mold features 1 and 2.

of our investigation area. Artifacts were not found in abundance, but were almost exclusively from the Antebellum time period, and associated with domestic occupation. Artifacts included decorated and undecorated ceramics, cut nails, clay tobacco pipe fragments, bottle glass, brick, and some animal bone. Some of the artifacts were of particular interest to us because of their likely association with enslaved African Americans: colonoware pottery sherds and a hexagonal, blue, glass bead.

In the northeast area of our investigation in excavation units 2 and 4, we also found two intersecting, post molds. These were probably the result of a post, likely related to the structures depicted on the 1911 map being reset. Feature 1 looks to have been a later post, or re-setting of a post, that intrudes upon Feature 2. In the field school planned for May 2018, we will try to locate associated post molds, which, if found, would permit public interpretation of the structure and help us to more exactly define the boundaries of the Slave Village via better georeferencing of historic maps to modern maps.

Further to the south, in GPR survey block 1, we found a compacted earthen surface in a 1 x 1-meter excavation unit which we opened up to explore the cause of an anomaly detected by the GPR. During a week-long volunteer excavation of June and early July 2017, students and volunteers worked with me to further explore this surface. We reopened the EU from 2016, and opened up six additional 1 x 1-meter excavation units (Figures 9and 10). The compacted surface was present in all seven of the excavation units. This surface may be the result of yard sweeping, and it is located near one of two churches indicated on the 1911 Georgetown County Soils Map (Figure 5; McLendon et al. 1911). One of these churches was established by African Americans in the Slave Village, and the other was the Waccamaw Mission, established in 1885, which offered Episcopal services and a medical clinic until 1915 (Salmon 1981:124; Tarbox 1981:100). When Huntington purchased the property in 1930, some of the houses in the old slave village were still occupied by descendants, and other descendants had their homes and small farms further to the east (Tarbox 1981: 97, 99, 100, 102). Whether out of a desire to evict these residents from the gardens area, to aid them, or a combination, as Huntington developed the property into Brookgreen Gardens he built new homes to the east (closer to a public road and church) for those still living in the old houses (Tarbox 1981:102). For their subsistence, descendants grew rice and other produce, kept livestock, hunted, and fished (Tarbox 1981: 97-99). We did not excavate through this compacted surface, instead covering it with landscaping

Figure 9. Volunteers exposing compacted surface, June 2017.

Figure 10. Compacted surface exposed, June 2017 volunteer week excavation.

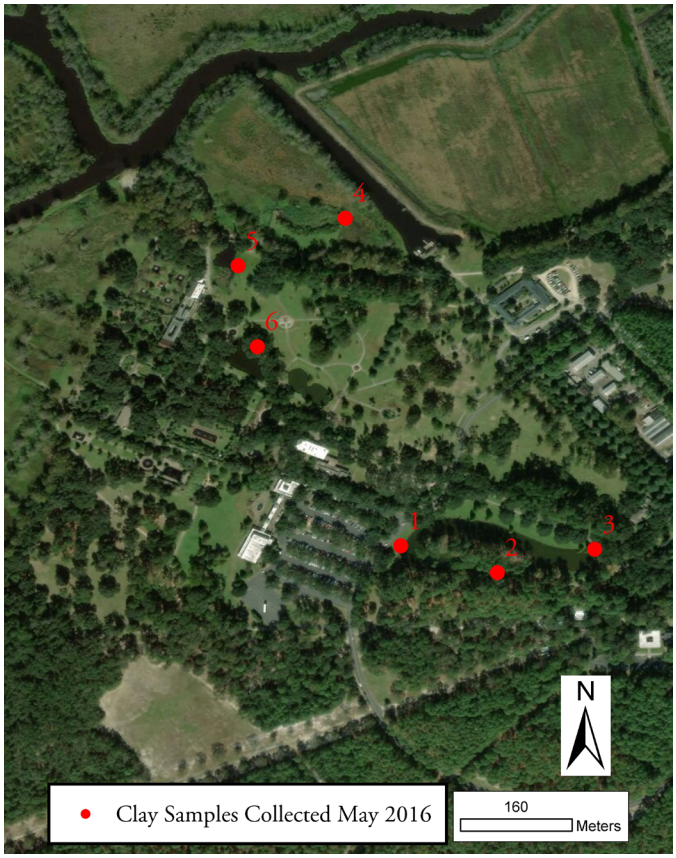

Figure 11. Clay sample collection locations, May 2016.

fabric and backfilling excavation units to allow us to expand horizontally to better define the feature's extent in future excavations.

Materials Sourcing Study: Pottery and Brick Making at Brookgreen Plantation

One research question was about the making of brick and pottery at Brookgreen Plantation by the enslaved. To begin to address this question, my CCU colleague Dr. Carolyn Dillian, an expert in using pXRF to determine chemical signatures for materials, the field school students, and I collected clay from ponds on the Brookgreen property (Figure 11). This was not without some risk, as alligators live in the ponds and nearby creek, and two alligators took an interest in my colleague. Fortunately, having many spotters to warn us when to get out of the water, we were able to use a bucket auger to collect the samples with no unpleasant encounters with the local wildlife. In a preliminary comparison of the chemical "signatures" of the colonoware pottery and a sample of the brick recovered against the clay samples, we found one possible match, (a colonoware rim sherd from EU 2, with clay sample no. 6), that we will explore further in the lab. We analyzed a larger sample of the brick and clay samples with pXRF to compare their chemical signatures (Palmer and Dillian 2018). We found that the large, ornamental pond which some docents had claimed was a historic brick clay source was not, but that a source close to the historic rice fields was a robust match for archaeological brick tested (Palmer and Dillian 2018).

Visitors and Volunteers, May 2016 field school and June/July 2017 volunteer week

In 2016, we were happy to have a group of students from Maryville Elementary School, (Georgetown, SC) visit us as part of their field trip to Brookgreen Gardens. The students were excited to see what we were doing and finding, and also greatly enjoyed the natural outdoor setting of Brookgreen gardens. The students from Maryville, all African American, are part of a mentoring program in which Brookgreen Gardens staff members volunteer to provide positive learning experiences and encourage the students to stay on a path that will allow them to graduate and go on to success in college and beyond.

During the 2016 field school and also the volunteer week in 2017, other visitors stopped by to ask questions about what we were doing and finding. We used these encounters to inform visitors about the rice plantations that existed on the Brookgreen property, and Brookgreen Gardens' intention to expand their public interpretation of these plantations, particularly with regard to the lives of

Figure 12. Dillian guest lecture on pXRF, May 2016.

the enslaved Africans and African-Americans who worked on them.

Field school 2016 Guest talk

Students in the field school benefitted from guest talks by

Figure 13. Daise guest lecture on presenting African American history to the public, May 2016.

invited experts on the history of Brookgreen (Ms. Robin Salmon), materials sourcing in archaeology using pXRF (Dr. Carolyn Dillian), oral history research on African American history in the area (Prof. Jack Roper), and the challenges of interpreting African American history for the public (Mr. Ron Daise) (Figures 12 and 13).

Discussion

We were able to accomplish both our research and our teaching goals with this project, and to renew the archaeological research relationship with Brookgreen Gardens. Future field work at Brookgreen will expand upon our Maymester 2016 and June 2017 volunteer week findings, working out from the known features to further define the Brookgreen Slave Village and recover more data that, along with archival research, will allow us to better understand the lives of the enslaved at Brookgreen Plantation and to present these findings to the public as part of Brookgreen Gardens' programming.

Acknowledgments

The James L. Michie Endowment for Historical Archaeology, Coastal Carolina University, provided funding for some of the travel and other expenses of this project.

I thank Brookgreen Gardens for granting permission for sampling, excavation, and analysis. Brookgreen Gardens' Bob Jewell, Page Kiniry, Robin Salmon, Ron Daise, Jeff Hall, Julia Mills, and Preston Moore contributed to the success of the field schools and volunteer week projects. I also wish to thank 2016 field school students Tyler Vance, Kyle O'Neil, Rachel Whyte, and Joe Wilson, and volunteers John Blair, Joe Cannon, Bill Dudeshyn, Gabriel Frick, Daniel Cross-Turner, Allen Kenny, Nichole Palmer, Amanda Brian, David Mannen, Anatoly Policastro, Frank Policastro, MerryBeth Policastro, and Hal Vivian, as well as 2017 volunteers Becky Cribb, Curtis Leonard, Wendy Trott, Emily Baran, Anne Elder, Henry Garbelman, Riley Reynolds, Susan Hayes Hatcher, Nancy Ray, Mike McFarland, Robert Quinn, Rachel Lopez, and Teagan Smith. Susan Bergeron of Coastal Carolina University and Jesse Rouse of UNC-Pembroke contributed their expertise in GIS and ground-penetrating radar technology to the field investigation and subsequent analysis. Clay and brick sample preparation and XRF analysis was conducted under the direction of Carolyn Dillian of Coastal Carolina University, assisted by Rachel Whyte. All errors are, of course, my own.

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An Analysis of Ceramic Artifacts Regarding the Prehistoric Occupations of the Congaree River

John Dodge

Introduction

On the Congaree River, specifically the stretch between Highway 77 and the Congaree National Park, collector Glenn Holton has combed dozens of sandbars looking for artifacts (Figures 1-2). Twenty-two of those sandbars have yielded a total of 1,549 ceramics. This work represents an analysis of those artifacts.

Mr. Holton kept track of which artifacts came from specific sandbars and bagged them accordingly, to preserve provenience. Not all sherds were collected from all the sandbars, and sherds were not collected systematically over any kind of grid. Rather, in most cases, larger sherds of interest with distinct surface treatments were probably favored over sherds that may have been smaller or more worn down. For this reason, a ratio of types or decorative modes present would probably not be helpful for seriation. However, we can assume the collector did not intentionally ignore any one type, so as a general sampling this method was still useful. The sandbars themselves were assigned informal names not associated with any registered sites. In the names, the first letter, either *S* or *B*, stands for *sandbar* or *bank*. The second letter, either *L* or *U*, stands for *lower* or *upper*, describing the site's relative position on the river. Finally, a number was assigned to differentiate the locations further where necessary. Mr. Holton created a Google map and drew the sandbars into their positions on the river, making it relatively simple to understand spatial patterns and compare the sandbars to recorded sites in the area (Figures 1-2).

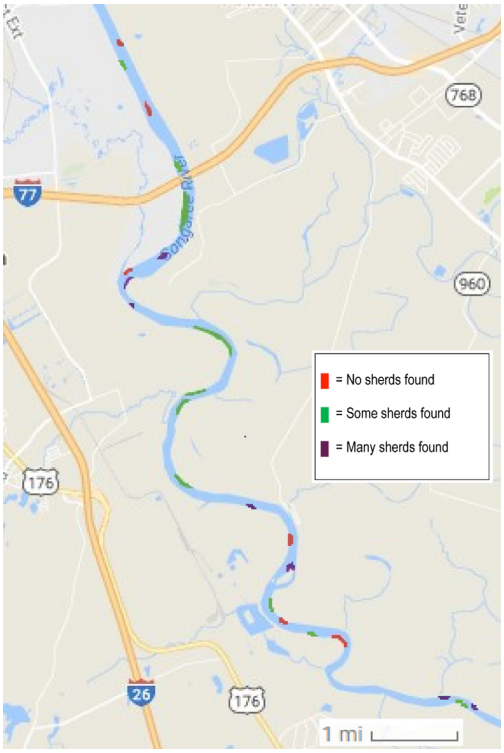

Figure1. Sandbars, first half.

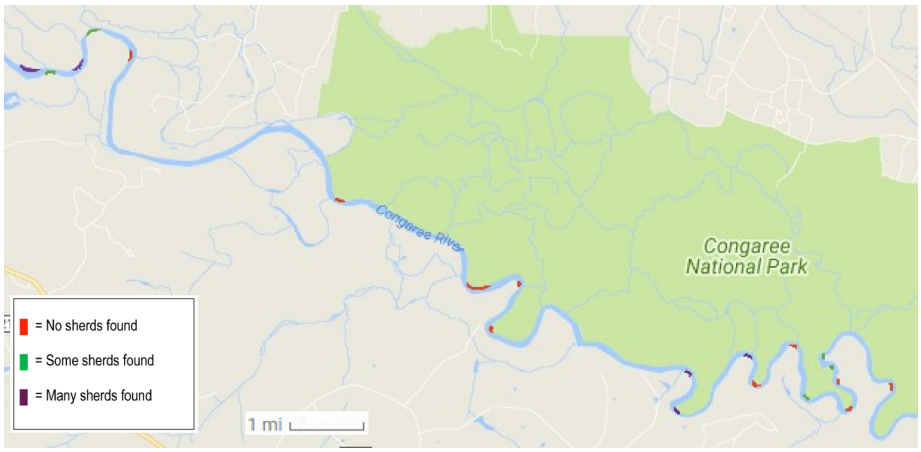

Figure 2. Sandbars, second half.

Apart from a handful of well-researched sites, not much has been done beyond the basic survey level to analyze the Congaree river valley. This collection, therefore, provides for a unique opportunity to do research on a particularly long stretch of the river, with an incredibly high number of quality diagnostic artifacts. The fact that this assemblage was put together by a collector, rather than a professional archaeologist, is exactly what made this possible. Likewise, the care Mr. Holton went to in bagging the sherds by sandbar

Table 1. Total collection by surface treatment/type.

	Complicated Stamped	Plain	Simple Stamped	Check Stamped	Camden Incised	Zone-Punctate Incised	Fabric Impressed	Cordmarked	Cob Impressed	Thoms Creek	Other Incised	Indeterminate.	Historic	Total
SU15	-	1	-	-	-	1	-	-	-	-	-	-	-	2
SU7	-	-	1	4	-	-	-	1	-	-	-	-	-	6
SU6	1	1	2	-	1	-	-	-	-	-	-	-	-	5
BU1	18	19	-	1	2	-	-	-	-	1	1	-	-	42
SU2	198	108	10	44	16	1	6	-	1	1	6	6	3	400
SU1**	47	25	2	12	2	1	-	-	-	-	2	-	-	92
SU8	4	2	-	-	-	-	-	-	-	-	-	1	-	7
SU5	47	55	-	8	2	-	-	-	-	-	-	7	-	119
SU10	10	8	-	2	1	-	-	-	-	-	-	3	-	24
SU11	3	2	-	1	-	-	-	-	-	-	-	2	-	8
SU4	5	4	-	1	2	-	-	-	-	-	-	1	-	13
SU3**	175	83	11	34	13	-	3	-	1	-	-	12	1	334
SU12	4	4	-	4	2	-	-	-	-	-	-	2	-	16
SU19	9	4	1	9	7	-	-	-	-	-	-	4	-	34
SU22	30	9	5	13	2	2	4	3	-	2	2	1	-	73
SL20	10	6	1	19	-	-	2	1	-	-	-	1	-	40
SL21	2	3	-	3	-	-	1	-	-	-	-	2	-	11
SL4	20	25	4	26	3	-	6	-	-	-	1	4	-	89
SL3	2	-	-	2	-	-	-	-	-	-	-	-	-	4
SL10	36	27	-	10	1	-	1	-	-	-	-	7	-	82
SL14	3	2	-	3	-	-	-	-	-	-	-	4	-	12
SL13	3	5	1	2	-	-	-	-	-	-	-	3	-	14
Misc.*	66	26	-	14	7	-	1	-	-	-	3	4	-	122
Total	691	422	38	212	61	5	24	5	2	4	15	64	4	1549

allows the collection to maintain as much geographic information as possible given the circumstances. For those reasons, this collection is useful not only as a potentially invaluable source of information, but also as an example of how archaeologists and collectors can cooperate to expand our collective understanding of the past. This article will first discuss the various surface treatments and decorative modes present in the collection, then the assemblage data from various sandbars will be broken down into clusters and analyzed further. Finally, a comprehensive analysis of the whole collection will be offered. For a complete record of the sherds by surface treatment and sandbar, see Table 1. All photographs were taken with a five-centimeter scale.

Surface Treatment

The Holton collection contains a large and diverse array of surface treatments. The three most dominant types (in order of prominence) are complicated stamped (Figures 3 and 4), plain, and check stamped. For this project, curvilinear and rectilinear complicated stamped sherds were grouped together, but the vast majority appeared to be curvilinear. The most prominent motifs from this collection are typical of the Savannah Complicated Stamped tradition, and, in conjunction with the decorative modes present, are generally associated with the Middle Mississippian period (1250-1400 AD) (Boudreaux 2005:11). The plain sherds were typically not assigned a time period for this project unless they appear with decorative modes, in which case those modes were used for dating. Although some check stamping appears on Mississippian vessels, the vast majority of check stamped sherds from this collection were of the Deptford variety, making them representative

Figure 3. SU1-1 Complicated Stamp.

Figure 4. SU3-2 Complicated Stamp with Applique.

Figure 5. SU2-1 Camden Incised.

Figure 6. SL10-2 Camden Incised.

Figure 7. SU4 Camden Incised.

of the Early to Middle Woodland period (600 BC-AD 500) (Anderson 2015).

Other common surface types recovered include Camden Incised, simple stamped, and fabric impressed. Different varieties of fabric impressed sherds span across the chronology, though most often they are associated with the Middle Woodland or early Late Woodland periods. National Parks Service (NPS) archaeologists found carbon dates of 710-770 AD +/- 30 and 680-740 AD +/-30 (leaning towards Late Woodland) in association with fabric impressed sherds from the Congaree Swamp Woodland Mound site (Siebert and Hardy 2012). Simple stamped sherds also see continuity but are most commonly associated with the Early and Middle Woodland period (Anderson 2015). Camden Incised wares, however, have not yet found a definitive place in the chronology.

First identified and defined by George Stuart in the 1950s at the Guernsey site, Camden Incised pottery is typically thought to have "common variations such as incising over check stamp, and incising over simple stamp. A distinctive inclusion is the incised horizontal lines beneath the rim" (Steen 2018:86). In his Fort Jackson synthesis, Carl Steen discusses the radiocarbon dates associated with this type so far.

> If the type has been correctly identified there are carbon dates associated. A date obtained from a hickory nut shell in Include 2 at 38SU13 received a date of 950+/-30BP (Beta 470308)... 38SU13 was damaged by soil borrowing, and two includes were salvaged. In 1974 George Stuart collected most of a pot from the Guernsey site, the type site for Camden Incised... An AMS date of 1050 +/-30 BP (Beta 472514) was obtained from soot on this vessel in the present work. In 1984 the USFS (Elliott 1984) obtained a carbon date of 1,400AD for pottery identified as this type at the Tyger Village site, in Newberry County. These sherds were not available for examination, however, and the context should be re-examined before the date is accepted as relevant to the Camden Incised type. In 2012 UNC (Davis et al 2015) obtained a date of 1,290AD for a very similar ware that they referred to as Twelve Mile Creek ware, so it is possible that the people using this pottery started moving into the area between about 1,000 and 1,400AD. (Steen 2018:174)

These dates, if truly representative of the type, seem to place Camden Incised somewhere between the Late Woodland and Early Mississippian periods, suggesting that this may be a transitional type between the two. This collection contained a total of 54 sherds of Camden Incised pottery spread out across the river. A sample of sherds identifiable as Camden Incised were photographed and included for reference (Figures 5-11).

Figure 8. SU2-1 Camden Incised.

Figure 9. SU12-1 Camden Incised.

Figure 10. SU19-2 Camden Incised.

The remaining types only represent about 1 % of the collection but seem to fit with the trend set by the majority types. The first, cob impressed, appears as a minority type in the Early Mississippian period Teal phase (AD 900-1050; cal AD 1000-1150) of the Pee Dee River Valley (Boudreaux 2005: 79), as well as the Lawton phase (AD 1100-1250) of the Middle Savannah River Valley. Only two cob impressed sherds were identified in this collection. Similarly, cordmarked pottery is most often associated with Deptford phase occupations of the Middle Woodland period (Anderson 2015), but also dominates Late Woodland Savannah River collections. It is also found as a minority type in Middle Mississippian phases, like the Hollywood phase, as well as the Teal phase of the Early Mississippian period (Boudreaux 2005: 43, 79). The four Thom's Creek sherds represent the only possible Late Archaic (ca. 2000-1000 BC) artifacts, though there is overlap into the Early Woodland period (Anderson 2015). In this collection, one Thom's Creek punctated sherd was identified, along with three which seem to have been dowel impressed. The late extreme from the collection was even more of an outlier, represented by a single Lamar Incised sherd from the Late Mississippian Lamar period (AD 1350-1600) (Williams 2017), whose exact origin along the river unfortunately could not be recorded.

The final type, Zone Punctate Incised, is identified based on incising over otherwise undecorated surfaces in a variety of shapes, which is typically enclosed and then "filled" with solid punctates. Carl Steen reports on a similar sherd (from site 38RD975) in his Fort Jackson synthesis (Steen 2018: 178). This decoration co-occurs with Camden Incised in this collection as well as the Fort Jackson synthesis, and could possibly represent another transitional surface treatment between the Woodland and Mississippian periods. However, site 38RD975 contained multiple components represented by Deptford check and Mississippian complicated stamped pottery, so it is impossible to definitively

Figure 11. SL4-1 Camden Incised.

Figure 12. SU2-5 Zone-Punctate Incised.

Figure 13. SU15 Zone-Punctate Incised.

Figure 14. Zone-Punctate Incised (SU1-1, SU22-1, SU22-2).

link the two based on current information (Steen 2018: 173). Five sherds with this surface treatment appeared in this collection (Figures 12-14).

Decorative Modes

Decorative modes are a prominent feature of this collection and represent one of the best ways to identify Mississippian sherds from this part of the country. These modes largely reflect decorations associated with the Town Creek-Irene Axis tradition. Named by Jefferson Reid in 1967, this Axis represents a prominent interaction sphere among the Mississippian peoples living between Savannah and Pee Dee Rivers. Among other things, the existence of this tradition allows researchers to use diagnostic modes to attach dates to artifacts and therefore sites. Specific decorative modes and rim treatments appear and disappear in the record at fairly specific dates. For example, the reed punctations, nodes (Figures 15 and 18), pellets, and rosettes (Figure 16) from this collection appear around AD 1250 to 1300 and remain in use until about AD 1375 to 1400. This means that these decorations can be used to verify the presence of a Middle Mississippian component. Slightly later in the chronology (AD 1350 to 1400), rim strips appear. Punctated rim strips disappear around 1450 AD, while other types continue into the protohistoric period. Incising and folded rims appear even later in the chronology, around AD 1425 to 1475. (Cable et al. 1999: 2-3). Given this information, Mississippian ceramics within the scope of this axis can be dated to a fairly specific time period. This tradition and the modes that appear within it are an integral part of the chronology provided by this collection.

One anomaly present in the modes includes what I have called a "wavy rim" for the purpose of this paper. This rim treatment is not, to my knowledge, specifically mentioned in the literature of the area and does not appear to be included in the Thoms Creek-Irene Axis tradition, but was distinguishable enough to warrant its own informal group. This treatment always appeared on plain sherds with a fine

Table 2. Group A surface treatments.

	SU7	SU6	BU1	SU2	SU1	Group A
Complicated Stamped	-	1	18	198	47	264
Plain	-	1	19	108	25	153
Simple Stamped	1	2	-	10	2	15
Check Stamped	4	-	1	44	12	61
Camden Incised	-	1	2	16	2	21
Zone-Punctate Incised	-	-	-	1	1	2
Fabric Impressed	-	-	-	6	-	6
Cordmarked	1	-	-	-	-	1
Cob Impressed	-	-	-	6	-	6
Thoms Creek	-	-	1	1	-	2
Other Incised	-	-	1	6	2	9
Indeterminate	-	-	-	6	-	6
Historic	-	-	-	3	-	3
Total	6	5	42	400	91	544

Figure 15. SU2-1 Punctated Node.

Figure 16. SU5-1 Rosettes.

grey paste and was identified based on a rim that curved slightly toward the exterior of the vessel, and a lip that was carved into multiple points; each having one sloping side and one steep side. It is not clear exactly where this treatment falls in the chronology. A few examples are included for reference (Figure 19).

Clusters

With the exception of a few outliers, sherd-yielding sandbars could be grouped into semi-distinct clusters (Figures 1-2). I have separated them into four distinct groups for this paper. These groups are made up of sandbars yielding what was deemed to be a significant number of sherds, which happened to be geographically close enough to one another to contain sherds from the same source or sources. These groupings are labeled alphabetically, according to the flow of the river (the first sandbar appearing in a table would be "A" on the map, the second "B", etc.).

The first table in each section provides the total number of each different type of sherd appearing on each sandbar in the group. The second table provides a description of the different decorative modes present in each group, differentiated by the sherd type they appeared on (plain vs. complicated stamped). In the next section, I have included a map labeling any sites in the general area that include an Archaic to Mississippian occupation, courtesy of Archsite, as well as the location of the sandbars as they were noted by Mr. Holton. Finally, a detailed look at the sherds and analysis of potential components represented by the collection was provided for each group.

A few unique and noteworthy artifacts are pictured in this paper with the cluster they were associated with. These include one ceramic pipe bowl (Figure 17), one discoidal (Figure 18), a large complicated stamped sherd with a distinct motif (Figure 3), a complicated stamped sherd with rim treatment and incised appliqué (Figure 4), two sherds potentially utilized as hones (Figure 20), and a strap handle (Figure 21).

Group A

The first group, Group A, is made up of sandbars SU7, SU6, BU1, SU2, and SU1 (Figure 22) (Tables 2-3). This cluster of sandbars contained the most sherds overall,

Figure 17. SU1-1 Pipe Bowl.

Figure 18. SU2-1 Node on Discoidal.

Figure 19. SU3-2 Wavy Rim.

Figure 20. SU3-2 Potential Hones, Simple Stamped and Plain.

Figure 21. SU3-2 Strap Handle.

due in part to SU2 being so large. As you can see from the table, group A was largely comprised of complicated stamped sherds, followed by plain in order of prominence, with a not-insignificant number of check stamped.

Of the eight sites within the vicinity of Group A, 38RD0101 (1), 38LX0112 (2), and 38RD1161 (7) seem to be the most closely associated with the river. The first, 38RD0101, bore evidence of Middle Woodland, Mississippian, and "Unknown Prehistoric" component. 38LX0112, on the other hand, just included a Mississippian components. The last, 38RD1161, is only listed as "Unknown Prehistoric." The other sites, though less closely associated with the river, could still be useful for understanding the occupations. They are listed below.

38LX0068 (3): Late Woodland, Mississippian
38RD0087 (4): Late Woodland, Mississippian
38RD1160 (5): Unknown Prehistoric
38RD1158 (6): Mississippian, Unknown Prehistoric

Table 3. Group A modes.

	Complicated Stamped	Plain
Reed Punctates	32	9
Nodes	3	3
Pellets	0	0
Rosettes	2	3
Rim Strips	3	6
Folded Rim	12	3
Wavy Rim	0	0
Other Punctate	0	1
No Mode	226	133
Total	264	153

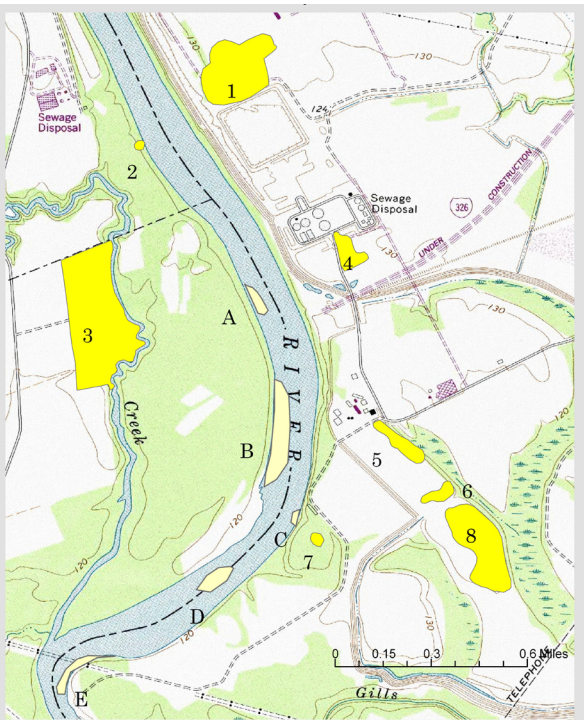

Figure 22. Sandbars in Group A overlaid onto map of sites. Sandbars in alphabetical order: SU6, SU6, BU1, SU2, SU1. Sites in numerical order: 38RD0101, 38LX0112, 38LX0068, 38RD0087, 38RD1160, 38RD1158, 38RD1161, 38RD1157.

38RD1157 (8): Late Woodland, Mississippian, Unknown Prehistoric

Analysis. This group appears representative of the total collection. The Middle Mississippian component seems to be the largest represented, based on the high concentration of complicated stamped pottery present. Decorative modes, such as rosettes and reed punctates on plain rims, suggest that the earlier portion of the Middle Mississippian (1250 A.D. on) are represented, while the rim strips and folded rims are evidence of a continued occupation up through 1400 A.D. and perhaps further. The Middle Woodland sherds (check stamped, simple stamped, cordmarked) make up another significant portion of the sherds collected from this area. This group also holds many of the Camden Incised sherds, which is the only salient evidence of an occupation between the Middle Woodland and Middle Mississippian, excluding the six fabric impressed sherds.

The findings from sites near the area seem to corroborate the collection from the sandbars. Many displayed evidence of a Mississippian occupation, including two of the three which seemed to be most closely associated with the river. Only one site had a Middle Woodland occupation listed, but it was close to the river and situated upstream from all sandbars in the group. The Late Woodland Period, which was listed in many of the recorded sites, seems to be represented in the collection by the 21 Camden Incised sherds.

Group B

Group B is made up of sandbars SU3, SU12, and SU19 (Figure 23) (Tables 4-5). This group was similar to group A, in that complicated stamped sherds were by far the most prevalent overall, followed by plain, and then check stamped. This group also contained the most Camden Incised sherds, despite being second in terms of overall size. The recorded sites on this part of the river were sparse. Artifacts associate with 38CL0066 (1) could potentially be washing downstream, but considering how many sherds were found on SU3, I feel it is more likely that there are sites unaccounted for in this area. The other two sites are less likely to be associated with the group, because they are located downstream. They are included, however, to provide a general understanding of the documented components of this river section.

38CL0066 (1): Unknown Prehistoric

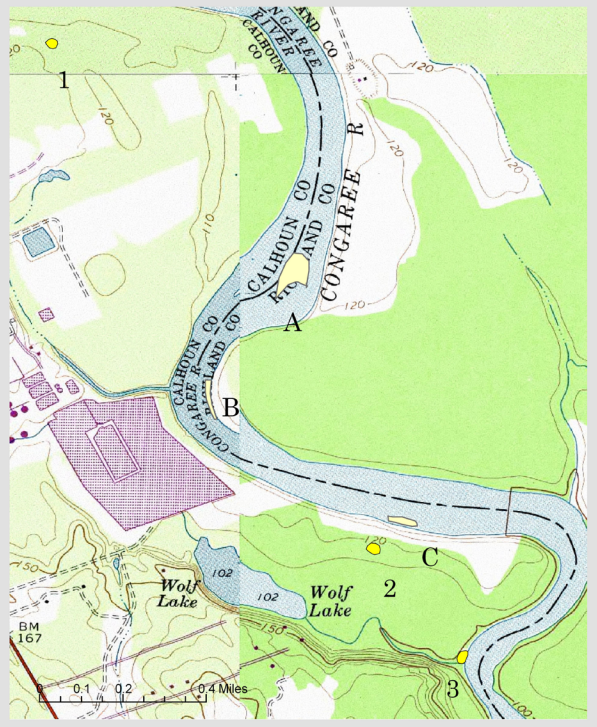

Figure 23. Sandbars associated with group B overlaid onto map of sites. Sandbars in alphabetical order: SU3, SU12, SU19. Sites in numerical order: 38CL0066, 38CL0021, 38CL0013

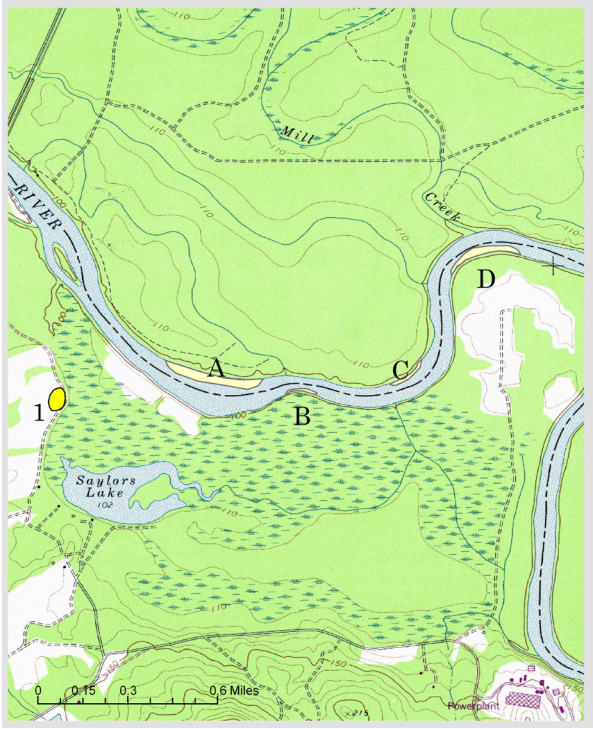

Figure 24. Sandbars in group C overlaid onto map of sites. Sandbars in alphabetical order: SL20, SL21, SL4, SL3. Site: 38CL0010.

38CL0021 (2): Late Archaic, Late Woodland
38CL0013 (3): Early Archaic, Unknown Prehistoric

Analysis. Most of the modes in this grouping occurred on plain sherds. Like group A, the most prevalent modes were reed punctates. This frequency and breakdown of decorative modes is indicative of the Middle Mississippian period, specifically between 1250 and 1450 (or possibly later) AD, using the reed punctates as a starting point and the rim strips as an endpoint. There is ample evidence, as well, for a Middle Woodland occupation, due to check stamped pottery appearing in high numbers. This group also contained the highest concentration of Camden Incised sherds, which presumably dates to the Late Woodland to Mississippian transition. There were no Thoms Creek sherds in this collection, meaning no evidence for an early occupation.

Evidence from the three recorded sites seems to suggest an Archaic occupation in the area, which the sandbars did not reflect. Likewise, while the sandbars identified a major Mississippian occupation, that was not the case in the recorded sites, unless that information is included in the "Unknown Prehistoric" occupation within the sites.

Group C

Group C is made up of sandbars SL20, SL21, SL4, and SL3 (Figure 24) (Tables 6-7). Only one recorded site containing prehistoric artifacts is documented on this section of the river. Its position upstream from the sandbars suggests that it could have a relatively high probability of being associated with the finds in this part of the collection.

38CL0010 (1): Unknown Woodland

Analysis. This group differed from the other groups in terms of sherd concentration. The dominant surface treatment in this cluster of sandbars was check stamping. The complicated stamped sherds still made up a significant portion, but this could suggest that the Woodland occupation was larger than the Mississippian in this area. There was a low sampling of sherds featuring modes in this part of the river, perhaps due to the low overall sherd count. Only two sherds total had modes: one punctated node, and one with both rosettes and reed punctates. Both were plain, and both were representative of the Middle Mississippian period. The presence of site 38CL0010 does lend weight to the findings on the sandbar, as it confirms a Woodland occupation nearby.

Group D

Group D is made up of sandbars SL10, SL14, and SL13 (Figure 25) (Table 8-9). These sites were all upstream from the sandbars and are therefore potentially related; however, the winding nature of this river section makes it unclear how far a sherd could effectively travel.

38CL0017 (1): Early, Middle, and Late Archaic. Early, Middle, and Late Woodland
38CL0031 (2): Early Archaic, Mississippian
38CL0100 (3): Early, Middle, and Late Archaic. Early, Middle, and Late Woodland. Mississippian

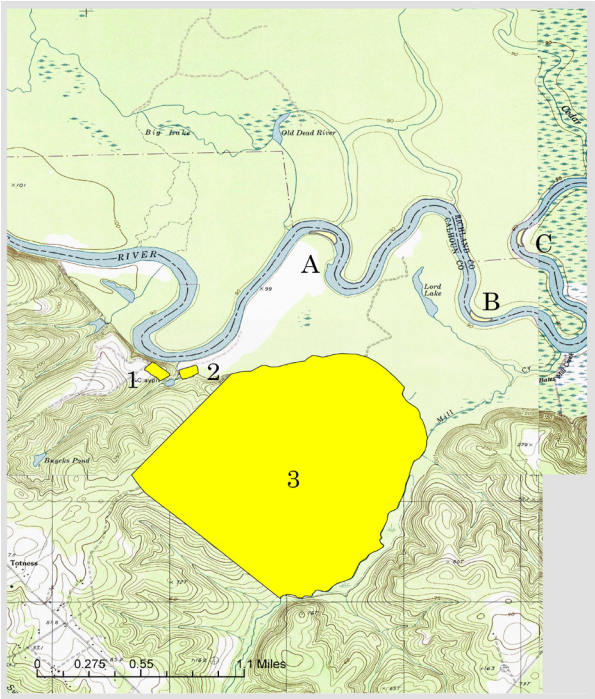

Figure 25. Sandbars associated with group D overlaid onto map of sites. Sandbars in alphabetical order: SL10, SL14, SL13. Sites in numerical order: 38CL0017, 38CL0031, 38CL0013.

Analysis. This group was the smallest of the four in terms of sherd count, but the composition looks more like the first two groups than the third. The most popular surface treatment was complicated stamped, which points towards a Middle Mississippian occupation, and the check stamped sherds are indicative of the Middle Woodland. Very few other sherds were found, which makes it hard to say anything with any degree of certainty, but the Camden Incised and fabric impressed wares could potentially represent the Late Woodland to Early Mississippian period. The sites from this portion of the river all confirm the three periods indicated by what was found on the sandbars, though the archaic component of the sites was not supported by the collection.

Results of Analysis

This collection is diverse, but it does heavily favor a few specific decorative types. In terms of total sherd count, and disregarding undecorated sherds, complicated stamping makes up well over half of the collection. If we can assume that the collector was not too heavily biased towards complicated stamped sherds, this suggests that the portion of the river covered by this collection was home to a substantial Middle Mississippian occupation. The second most prominent type, check stamping, is likely associated with the minority types of simple stamped and cordmarked sherds. These sherds together represent another significant portion of the collection and are likely indicative of a sizeable Middle Woodland occupation. We do see some fabric impressed sherds that seem to date to the early part of the Late Woodland period, but the more common Late Woodland type is Camden Incised. If we can assume that it is unlikely that the area was abandoned totally between the Middle Woodland and Middle Mississippian occupations, and that whoever was occupying the area must have left behind some kind of pottery, I think that this research makes a good case for Camden Incised pottery fitting into that Late Woodland/Early Mississippian timeframe. There was continuous occupation before and after that point, and none of the other minority types quite fit. Camden Incised sherds, on the other hand, are relatively common in the area and have been associated with carbon dates from a component which would otherwise be all but missing in the material record. There are only four artifacts in the collection that are likely from the Archaic or Early Woodland periods, and without the presence of lithic artifacts, this collection does not support the presence of any particularly large early occupations. Likewise, the rectilinear complicated stamping common during Early Mississippian occupations was noticeably absent, along with most of the distinctive rim decorations of the Late Mississippian. The only clear example of a Late Mississippian artifact appeared in the form of a single Lamar Incised sherd lacking an exact location. Folded rims, which could be associated with the early part of this period, appear in a low frequency.

Therefore, according exclusively to the sandbar findings in this collection, and with the caveats that only occupations from the Late Archaic to Mississippian periods are represented, and the sampling method can only be considered representative of settings right along the river, I would propose the following general chronology for this area. There was likely a small, Late Archaic and Early Woodland occupation represented by Thoms Creek, and potentially some simple stamped pottery. It was not until the Middle Woodland period, however, that a substantial occupation appeared in the area. Then, that occupation underwent a transitional period represented by the Camden Incised type, assuming we can trust the few dates attached to those sherds. After that, we either see a substantially reduced occupation during the Early Mississippian period, or (as is perhaps more likely) the Late Woodland type Camden Incised continued to be in production until the Middle Mississippian period. This could be supported by later dates associated with this type, including the 1290 and 1400 carbon dates mentioned above (Steen 2018:174). This period (Middle Mississippian) represented quite possibly the largest single occupation in the area, based on the sheer number of complicated stamped sherds that are present. Based on rim treatments and decorative modes, this collection contains sherds from the early Middle all the way to the late Middle and beginning of the Late Mississippian. After that, either the styles we associate with Late Mississippian societies never caught on in the area, the occupation effectively disappeared, or it shifted to other parts of the valley or other river valleys.

This collection and the corresponding analysis are

useful, but far from comprehensive. In most of the paper, a lack of sherds has been attributed to an absence of the corresponding occupation; however, there are a few alternatives that should be considered. Firstly, this collection is biased heavily towards ceramics simply because lithics do not show up on sandbars often. Ceramics are extremely useful diagnostic artifacts—except when the occupation you want to identify did not use ceramics. This is particularly relevant to Archaic occupations in this collection. Extremely little from the Archaic shows up, but that could be due to the lack of vessels in use, not the absence of human beings from those time periods. Furthermore, this collection covers a massive tract of land along the river, but it does not cover much at all as far as sites off the river are concerned. Only deposits in or near the riverbank would wash out into the sandbars, leaving many deposits unaccounted for. Because of that, it is quite possible that any apparent lack of artifacts in this collection could be the result of a change in settlement preferences. In concrete terms, the people occupying the valley during the Early Woodland period could have chosen to live away from the river for any number of reasons. Then, around the Middle Woodland period, they could have started to move closer, favoring sites near the river. This seems to have continued to be the case right up until the very end of the Middle Mississippian occupation. Then, perhaps for geopolitical reasons, the Late Mississippian people chose to move their settlements away from the river again.

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Table 4. Group B surface treatments.

	SU3	SU12	SU19	Group B
Complicated Stamped	175	4	9	188
Plain	83	4	4	91
Simple Stamped	11	-	1	12
Check Stamped	34	4	9	47
Camden Incised	13	2	7	22
Zone-Punctate Incised	-	-	-	-
Fabric Impressed	3	-	-	3
Cordmarked	-	-	-	-
Cob Impressed	1	-	-	1
Thoms Creek	-	-	-	-
Other Incised	-	-	-	-
Indeterminate	12	2	4	18
Historic	1	-	-	1
Total	333	16	34	383

Table 5. Group B modes.

	Complicated Stamped	Plain
Reed Punctates	6	14
Nodes	1	2
Pellets	1	2
Rosettes	0	3
Rim Strips	5	8
Folded Rim	1	0
Wavy Rim	0	1
Other Punctate	0	1
No Mode	178	62
Total	188	91

Table 6. Group C surface treatments.

	SL20	SL21	SL4	SL3	Group C
Complicated Stamped	10	2	20	2	34
Plain	6	3	25	-	34
Simple Stamped	1	-	4	-	5
Check Stamped	19	3	26	2	50
Camden Incised	-	-	3	-	3
Zone-Punctate Incised	-	-	-	-	-
Fabric Impressed	2	1	6	-	9
Cordmarked	1	-	-	-	1
Cob Impressed	-	-	-	-	-
Thoms Creek	-	-	-	-	-
Other Incised	-	-	1	-	1
Indeterminate	1	2	1	-	4
Historic	-	-	-	-	-
Total	40	11	89	4	144

Table 7. Group C modes.

	Complicated Stamped	Plain
Reed Punctates	0	2
Nodes	0	1
Pellets	0	0
Rosettes	0	1
Rim Strips	0	0
Folded Rim	0	0
Wavy Rim	0	0
Other Punctate	0	0
No Mode	34	32
Total	34	34

Table 8. Group D surface treatments.

	SL10	SL14	SL13	Group D
Complicated Stamped	36	3	3	42
Plain	27	2	5	34
Simple Stamped	-	-	1	1
Check Stamped	10	3	2	15
Camden Incised	1	-	-	1
Zone-Punctate Incised	-	-	-	-
Fabric Impressed	1	-	-	1
Cordmarked	-	-	-	-
Cob Impressed	-	-	-	-
Thoms Creek	-	-	-	-
Other Incised	-	-	-	-
Indeterminate	7	4	3	14
Historic	-	-	-	-
Total	82	12	14	108

Table 9. Group D modes.

	Complicated Stamped	Plain
Reed Punctates	0	0
Nodes	0	0
Pellets	0	0
Rosettes	0	1
Rim Strips	0	0
Folded Rim	0	0
Wavy Rim	0	1
Other Punctate	0	0
No Mode	42	32
Total	42	34

Archaeological Society of South Carolina Hilton Head Island Chapter for Archaeology

Captain George R. Stubbs

This is a history of the Hilton Head Island Chapter, from its founding days to the present time, which was presented at the Society`s 2018 annual and 50th anniversary meeting. The Chapter`s founding was the culmination of efforts by Mike Taylor, an archaeologist and the then president of the Coastal Discovery Museum; Marge Tolly, who would become the first president of the Chapter; and George Lewis; who was the then Society`s president. Mike and Marge met during the October 1992 South Carolina Archaeology Month and determined that a chapter on the Island should be formed. Working with George, the Chapter`s Constitution and Bylaws were written, and the Chapter came into being. Membership has averaged about 35 persons interested in archaeology and history.

The Chapter conducts monthly meetings in the Coastal Discovery Museum. The meetings are open to the public from January to May with a break during the summer and reconvening in September, October, and November. We normally hold a Christmas social early in December, before everyone departs for the holiday season. A professional archaeologist is always invited to be the guest speaker.

During the 1990s, Hilton Head was rapidly being developed and archaeological surveys were required at each building site. Chapter members volunteered hundreds of hours assisting in these explorations. The latest survey was for the Cross Island Parkway where a number of prehistoric sites were identified. Of interest, the harvested oak trees were sent to Boston to be used in the overhaul of the *USS Constitution*.

The Chapter`s stewardship of the Green Shell Enclosure for the South Carolina Department of Natural Resources (SCDNR) began in 1993. The Green Shell Enclosure is a fortified Indian village dating from the 1300s and is part of the defensive network of the agriculturally oriented inhabitants from the Mississippian Period. The villagers lived and farmed outside of the moat and palisade protecting the enclosure. Several acres are enclosed by the palisade and the shell ring. Skull Creek, which borders Hilton Head`s west side is the final protective feature.

Additionally, during the 1990`s, the Chapter assisted Jim Spirek in his survey of Port Royal Sound. Port Royal Sound is one of the largest and deepest saltwater ports on the East Coast and is located just north of Hilton Head. One of Jim's quests was to locate the lost French brigantine *Le Prince*, which sank in the Sound several centuries ago. It was not located, but we know where it is not!

Over the years, the Chapter has conducted over 45 field trips to archaeological and historical sites (Figures 1 and 2). Often, we visit a site that has been discussed by the month`s guest speaker. The Chapter has visited such sites as Forts Pulaski, Jackson, Fremont, Stuart, Morris, and Scriven; archaeological sites such as Topper, Ocmulgee, Heyward Point, and Stoney-Baynard Plantation ruins; and historically important churches such as the Old Sheldon Church and The Parish Chuch of St. Helena in Beaufort. Our problem is that we have practically exhausted the supply of sites within the one-hour or so radius of Hilton Head. Most recently, we visited an 18th-century shipwreck that is being excavated on a Hilton Head beach by the SCDNR`s Marine Division. It is located near the 18th tee of Harbour Town Golf Course, but can only be reached by boat.

From early on, the Chapter has supported the Society`s Fall Field Day and has often provided a booth with many artifacts, including ceramic sherds and projectile points. The Coastal Discovery Museum is the curator of all artifacts recovered from archaeological surveys from Hilton Head Island and surrounding Lowcountry areas. The Chapter spent over five years cataloging this collection which should be of use to future researchers.

A monthly newsletter was started in 2002. Typically, it contains a message from the president, the guest speaker`s topic and a discussion of it, as well as the speaker's biography. Also included are the minutes from the last meeting, an article about archaeological news from somewhere in the world, and other items of interest. The newsletter is promulgated by email to about 175 interested persons in the area, as well as being posted in the Chapter page of the ASSC web site.

The Chapter is now assisting Dr. Matt Sanger of Binghamton University, NY, and his exploration of the Sea Pines Shell Ring, which is dated to be over 4,000 years old. The Shell Ring is located in the middle of the Sea Pines Forest Preserve and is in pristine condition. It turns out that Hilton Head is the epicenter of shell rings on the East Coast from Florida to North Carolina. Dr. Sanger located over a dozen shell rings on the island by Lidar investigation. There were many more, but unfortunately the shells of most are now in driveways and sidewalks on the island. An interesting feature is one half of what is believed to be

Figure 1. Pictured is the 2009 field trip participants to the colonial plantation of W. B. Sams on Dataw Island.

a building foundation was excavated in the center of the shell ring. The remaining half will be excavated in 2018, and, if in fact it is a building, it will be one of the oldest on the East Coast. Dr. Sanger expects to continue exploring the shell ring for three or four more years.

Annually, the Chapter conducts an artifact identification program called "What the Heck is It?" on the first Saturday of October. State archaeologist Dr. Jon Leader and Brockington's Dr. Eric Poplin have wonderfully supported the program by volunteering their time each

Figure 2. Pictured is the 2009 field trip participants to Wormsloe Plantation in Savannah.

year to identify and date artifacts brought in by members and the general public. Many interesting artifacts have been brought in, such as Civil War swords, African dolls, Civil War crypto devices, and many, many sherds and projectile points.

The Chapter assisted in the planning, support, and execution of the initial and follow-on two years of the Arhkaios Archaeological Film Festival developed and conducted by our good friend Jean Guilleux. The film festival is held the last week of October annually and is one of two conducted in the United States. Unhappily for us, Jean relocated the film festival to Columbia, South Carolina in 2017.

Other activities in which the Chapter has participated include the 2015 National Resource Discovery Day held in the Savannah National Wildlife Refuge where we provide an archaeology table and the annual Hilton Head History Day where the Chapter provides docents for tours at the Green Shell Enclosure.

Chapter presidents in order from the beginning are Marge Tolly, Ed Johnston, George Stubbs, Jean Guilleux, Duane Pickett, and our present president, Dave Gordon.

My Time with the ASSC

Carl Steen

I started doing archaeology in South Carolina (SC) in 1981, and quickly learned about, and joined, the Archaeological Society of South Carolina (ASSC). The First Ten Years volume of SC Antiquities was my textbook for SC archaeology, and I would still recommend it to anyone who wants to learn about the subject. I did not realize it at the time, but the ASSC was founded on different principles than groups in other states. In many cases, similar organizations are run by professionals, and non-professionals are expected to follow their lead. Here, the society was started by non-professionals, who were then joined by a forward looking state archaeologist, Dr. Robert L. Stephenson.

I will not name every name, but the most important non-professionals, to me, were Jim Michie, Tommy Charles, Wayne Neighbors, Walt Joseph, Sammy Lee, and Bob Parler. Jim and Tommy were especially important, not just for their research contributions, but because they started out as non-professionals and, through hard work, became professionals. Unlike many archaeologists I did not grow up collecting arrowheads, and in my time at the College of Charleston (I was a 25-year-old senior when I got my first archaeology job), I had only taken a single archaeology class: an introduction to archaeology that covered the whole world. So, I came into archaeology with less knowledge than most non-professional members of the ASSC.

To me, Jim and Tommy were living proof that you did not need to spend a lifetime in school to be an archaeologist. I did go on to finish my BA and get an MA, and Jim did the same, but Tommy retired as a long-time professional with no advanced degree. His publication this year entitled *Prehistoric Chipped Stone Tools of South Caroliana* clearly demonstrates that we all can contribute, regardless of our level of education and the circumstances that led us to archaeology. It is not an elitist field. There was a (now) politically incorrect bumper sticker when I got into the field: "Archaeologists are the Cowboys of Science." When the field first began it was indeed, elitist, but by the time I got my start there was a glut of jobs and a shortage of people to fill them. In that respect, it was a good time for an anthroplogy student looking for a job: something you cannot always say! And even today there are more jobs available to anthropologists who want to do archaeology than, say, ethnography.

So, I bought the First Ten Years volume, and joined the ASSC, waiting anxiously for every volume of Antiquities and attending every conference. And the conference was much different than we have now, especially the banquets that were held afterwards. The banquets were fun, and generally featured a prominent out-of-state speaker, but it seems that such events were on their last legs even in the 1980s. The early society was almost desperate to communicate. In those days, most of the time when you heard about archaeology it had to do with pyramids and such. When Jim Michie started collecting, it was not even clear that, say, triangular points, were newer than Clovis points. In fact, one of Jim's first projects, which he did with volunteer's before the ASSC had even been formed, was aimed at demonstrating that the stratigraphic relationships Joffre Coe had found in NC were replicable here.

When I got into archaeology, about 15 years later, it was a brand new world. The study of humans and the past had evolved considerably, as ideas about race, class, and what was important about the past had changed. In fact, my first field job was on a plantation site. Historical Archaeology in the South had gone from studying the main house at plantations to studying the homes of the poor and enslaved.

This was a result of changes in our social order that spurred new environmental regulations that required government funded projects or activities covered by Federal permits to "consider" cultural resources, just as they would natural resources. Well, before you "consider" them you have to find them, and once you find them you have to assess them. Most archaeological sites are evaluated under Criterion D of the National Register of Historic Places. This asks if a site can provide information "important" for understanding past human behavior? In a state that never had much of a professional archaeological presence it could be argued that nearly ALL sites had that potential. And soon thereafter, David Anderson and Genalee Muse, as well as Mike Trinkley, demonstrated this clearly by producing papers regarding 19th-20th-century tenant sites, based on Cultural Resource Mangement (CRM) projects.

In 1980 the University of South Carolina formed its Public Service Archaeology master's program to fuel the need for CRM professionals. This brought in a dozen or so new faces every year for a long while. The Institute of Archaeology also brought in a new group of professionals. Soon the old guard had been somewhat swamped by the new crowd, many of whom were liberal Yankees! As a result the society evolved from a group of like minded people from across the state, to a group of like minded people from across the country, indeed, from around the

world. Interest in the post-conference banquet began to wane after this. Professionals working in the field all week didn't want to spend their entire weekend on a work related activity. If you were from anywhere but Columbia you either had to spend the night, or drive home after the party. I do not recall any tales of DUIs or accidents, but where archaeology is discussed, beer is frequently imbibed. In the 1980s, driving under the influence was mostly met with a "Drive careful now, you hear?" but in the 21st century, not so much. So nowadays, we have the keynote speaker give the last talk of the day, and everyone goes their way afterwards.

While this is safer and saner, it has had a detrimental effect, as the lack of socializing has contributed to a looser bond among the membership. Professionals and non-professionals do not get to interact as much, and some of the things my fellow professionals care passionately about and would bend your ear for an hour talking about, are difficult to convey in a 20-minute paper. And that is another thing. Conference papers nowadays are often only 15 minutes. In my own case, I feel that I am reading so fast that probably no one understands what I am trying to say. And before you say "Reading?", I have to say that if I am going to make any sense at all in 15 minutes I have to have everything written out in advance or I will go on a ten minute tangent and forget to say what I stood up to say.

So, our conference has changed to where it is more structured and less fun. For non-professionals it can probably be extremely boring to watch a series of papers on topics of interest to the presenters, who, frequently, are graduate students deeply involved with thesis topics that few of us understand or appreciate. But what we are doing as a profession is not for entertainment purposes, which is another change for the ASSC, as for the founders, it was emphatically for fun and entertainment. Fall Field Day was started to bring some of the fun back into the society, and it has (with the usual ups and downs) succeeded. That is, when people attend. There was a large and enthusiastic crowd at the first one I attended. Through the years, however, attendance waned, and we decided to hold the event in cities across the state to drum up local enthusiasm. While we did get a decent local crowd, for the most part, it did not translate into any huge increase in the membership rolls, and very few people followed the event the next year.

So, I have been a member of the ASSC for nearly 40 years at this point. Although it has evolved fundamentally, it has stayed the same in many ways. Our members have always had an interest in the archaeology of the state, though the details of what we consider "archaeology" has varied over time. I started working with professionals who would tell you to throw all of the historic "trash" out, and then worked with people who wanted to save every last brick fragment. Nowadays, looking at the reality of the concept of permanently curating collections, throwing that junk out seems like a good idea! But, thanks in part to the ASSC and groups like it, we are at the point where we can safely decide what needs to be saved, and what can be sacrificed. When the ASSC first got started no one knew what to expect. Now we have found the sites, discussed the results and ramifications from various perspectives, and can begin to deal with new and substantive questions.

BOOK REVIEWS

Peterkin, Julia Mood. Black April. **1927. The Bobs-Merrill Company (no ISBN #; Out of print).**

Julia Mood Peterkin is perhaps best known in the world of anthropology for her work with Doris Ulmann in the non-fiction publication of Roll, Jordan, Roll (1933), a collection of photographic images of agrarian African Americans for which she wrote the commentary. However, that book was her last of five, the previous four being comprised of works of fiction. Peterkin wrote these novels between 1924 (Green Thursday—well-received by black readers) and 1932 (Bright Skin). Her work dealt almost exclusively with African-American characters, and the bulk of it was published during the Harlem Renaissance, a time when African-American culture was popularly seen as exotic and intriguing. Her second novel, Scarlet Sister Mary; however, won the Pulitzer Prize for fiction literature in 1929, however it was not well-received by southern white readers and was banned from some public libraries, including Peterkin's own local public library.

Julia Mood was born in Laurens, South Carolina in 1880. At the age of 17, she graduated from Converse College with a master's degree. In 1897, she took a job as a school teacher in Fort Motte, SC, and in 1903, she married William George Peterkin, owner of Lang Syne Plantation. The plantation entailed 1,500 acres and employed about 500 workers, all of African descent—some of whom were doubtlessly formerly enslaved, and many more who were descended from the enslaved people of the plantation. Julia Peterkin wrote her fiction novels on Lang Syne Plantation and based her characters on the black workers around her. Her third book, Black April, was recommended to me by Christopher Judge, co-director of the Native American Studies Center in Lancaster, SC. About a week later, Carl Steen, president of Diachronic Research Foundation in Columbia, SC, left a copy in my office chair, doubtlessly to spare it being lost in the surrounding clutter. The book, now out of print, was weathered, and the front cover was barely readable. I gingerly opened the aging book. The inside revealed a print date of 1927. Steen informed me later that this copy had survived the disastrous flood of 2015. He stated, "I wiped it off with a damp cloth and set it on the shelf to dry. That's all."

Upon reading, the novel was in unexpectedly robust condition, white threads still holding together its thick yellowing pages, and the binding still holding firm. The volume is itself an historic artifact.

Black April is set on two coastal plantations, Sandy Island and Blue Brook (Judge suggests they may be based on postbellum Sandy Island in Horry County, SC), sometime after the invention of the automobile. The plantations are both run and managed by African-American sharecroppers. White people are referred to in the book and are acknowledged as the owners of the land; however, the never make any appearance. Only their bighouse looms as an ever-present symbol of their enduring authority.

The story opens with the expectant birth of the main character, Breeze. It is explained from Breeze's grandfather's perspective that his daughter, Breeze's young mother, has returned from visiting Blue Brook, having become pregnant during the sojourn. Breeze's father, the foreman of Blue Brook, is named April, for whom the book is entitled. Breeze's grandfather, also named Breeze, begat Breeze's father on a visit to Blue Brook years earlier. In other words, Breeze's parents are also half-siblings. These themes of incest, promiscuity, and paternal absence/neglect continue throughout the book.

Such themes fall under the dark shadow of racial stereotyping, however, we must bear in mind that Black April was written in 1928, when such stereotypes were not viewed as objectionably as they are today. Indeed, Julia Peterkin and her sister-in-law, Genevieve Peterkin, were active proponents for the advancement of civil rights for blacks.

When Breeze is about twelve, the oldest of multiple siblings, his mother receives a visit from Cousin Big Sue, the white plantation owner's cook (it is explained that the "buckras," or white people, only come south to the plantations to hunt and fish, and only during cool months) from Blue Brook.

She has come to collect young Breeze. Breeze's mother is overburdened and poor. Cousin Big Sue says she has more than enough money and food, and her own children have grown and moved away—one to ""Fluridy. Or maybe it was Kintucky', she wasn't certain," and one (daughter Joy) "to college in town." She could use the help of a young boy like Breeze with her chores at Blue Brook.

During the ensuing years, through young Breeze's "education" at Blue Brook, Peterkin gives the reader a look into early 20th-century plantation sharecropper life. Breeze learns about witchcraft and superstition. He learns about religion and the Bible. Both are equally real in his world.

Both are equally wonderous. Both are equally frightening. At one point, Breeze asks Uncle Bill if there are any white people in heaven. Uncle Bill responds that there might be, because white people know tricks which blacks do not.

Life on the plantation is hardworking and often violent. Breeze is regularly flogged by Cousin Big Sue, using a leather whip she keeps hanging handily on her wall. Another character, Leah, April's wife, is murdered (without legal or social repercussion). Yet another character, Brudge, is also assaulted without consequence. The quotient of violence and intimidation on the plantation hangs at the whim of the foreman, April (who never acknowledges fatherhood of Breeze or any of his other "yard children").

Work on the plantation is carried out in much the same fashion as it was during times of slavery. The workers are no longer "property"; however, they work together in the same manner as slaves had—hoeing, ditching, plowing, planting and picking as a coordinated team under April's yoke of brutality.

April is a figure of tyranny, reminiscent of Wolf Larsen in Jack London's The Sea Wolf (1904). He is hard and callous. He is strong and merciless. He assaults his (unacknowledged) son, Sherry, and banishes him from the plantation. He bites a chunk of flesh from the face of a "town church" preacher before the congregation. He rules the plantation as Wolf Larsen rules his arctic ship; with austere brutality and intimidation. And like Wolf Larsen, April doesn't seek the salvation of his own humanity until it is too late.

Late in the story, Joy returns to Blue Brook. She is thin, sickly, and weak. Only by living the "healthful" life on the plantation does she regain her health and strength. She marries April, but when she is thought to be dying of an illness, it is discovered she does not have "Death Fever," but is pregnant. She is pregnant by Sherry, one of April's "yard children."

Meanwhile, Breeze approaches an early manhood. By fourteen, he is given the reigns of his own mule with which to plow. He is told by Uncle Bill that the time has come for him to go into the "wilderness" and to pray for a calling or a sign. Breeze takes the advice seriously, as he is sincerely frightened by the prospect of burning in hell for all eternity. Breeze goes into the forest seeking a vision. He prays until he is exhausted and falls asleep. When he awakes, he finds he has been pursued into the woods by a young girl, Emma, and it is with her that Peterkin implies Breeze's repetition of a self-perpetuating cycle.

Black April stands on its literary merit alone. Its themes are compelling, its plot is well-laid and tragic, and its characters are fully developed. However, the book has value beyond its genre. Peterkin's work serves as a unique and vivid historical backdrop to the voluminous 1938 WPA Slave Narratives. Most of the interviews in the narratives are with individuals describing recollections of conditions and incidences occurring before, during, and since the American Civil War. Interviewees give some physical descriptions of their remembered landscapes, relationships, and experiences, but they were not authors. Combined with Peterkin's tapestry of picturesque and somewhat romantic scenes (e.g. old rice fields, ebbing and flowing tidal creeks, religious events, & etc.), the Slave Narratives are given a boost of imagery and social context. Many of the beliefs and superstitions of the characters in Black April are echoed ten years later in the narratives. Black April lends social context to the dualistic embrace and adaptation of both Christianity and traditional African/African-American folk beliefs. Peterkin's book allows us to place the WPA Narratives within a framework of social structure.

Tariq Ghaffar, an archaeologist with the South Carolina Department of Natural Resources (SCDNR), began his career in cultural resource management in 1990. Since that time, he has worked for most CRM organizations in the southeastern United States.

Goodyear, Albert C. and Christopher R. Moore (editors). 2018 Early Human Life on the Southeastern Coastal Plain. University of Florida Press, ISBN 978-1-68340034-9.

Goodyear and Moore's edited volume *Early Human Life on the Southeastern Coastal Plain* brings together research that spans multiple disciplines (archaeology, geology, geography) and time periods (pre-Clovis to Archaic). The papers in this book argue for earlier pre-Clovis occupation (chapters two and three), use geology, geomorphology, and sedimentology to identify early archaeological sites (chapters four, five, and ten), and map movements of groups on the landscape (chapters seven, and eleven through thirteen).

The first section of the book tackles the issue of the pre-Clovis occupation of the southeastern Coastal Plain, beginning with a discussion of the Topper site in the second chapter. Goodyear and Sain's chapter argues that the the smash core reduction lithic technology of the Topper site is more typical of Old World Paleolithic technology than it is of bifacial technology of the Clovis period. They also offer a point-by-point refutation of critics who argue that the artifacts found in the white Pleistocene alluvial sands (WPAS) are geo-facts rather than human made. Though there is little doubt that the WPAS artifacts are indeed artifacts, the authors do not present much in the way of an argument against vertical displacement of artifacts from the WPAS to the Pleistocene terrace, where the oldest pre-Clovis occupation is thought to occur.

Like the chapter on Topper, Ensor argues that lithic artifacts—this time from Alabama—more closely resemble those of the Middle Paleolithic than they do later Clovis assemblages. Ensor asserts that the lithic industries of

the Capps and Shelley sites are Levallois-like rather than Clovis-like. Though the author is convinced of the similarities between Capps and Levallois, he seems appropriately hesitant to use the morphological similarity to argue that the two technologies date to the same time period.

While chapters two and three concentrate their efforts on artifact assemblages, the following two chapters are more about geology and geomorphology than archaeology. Hemmings et al. focus their attention on the depositional history of the Vero site in Florida. This chapter is meant to simply summarize what is known about the Vero site to date and includes interesting discussions of its history as an archaeological site, excavation methodology, and a lengthy discussion of the site's soils and geomorphology. The chapter ends with little more than a brief mention of the actual archaeology of the site and no analysis or interpretation of the artifacts.

In the following chapter, Scott Harris uses GIA-corrected bathymetry to establish the location of the shoreline after the last glacial maxim, with the ultimate goal of discovering possible submerged Paleoindian sites.

Smallwood et al.'s chapter seven is great because it begins to move the subject of the book from geology back to archaeology. Smallwood et al. use paleo-point types and distributions of raw materials to discuss changes in land use from the Clovis period through the Dalton period. The authors note that Allendale has the highest concentration of all point types from any period, and one is left wondering whether the scale and popularity of the Topper site skewed the results with increased collections from this area.

The next three chapters again focus on geology and paleoclimatology. Chapters eight and nine work together to summarize what is known about the Younger Dryas boundary impact event and its consequences for life in the Southeast. Chapter ten discusses the ways shallow, sandy sites are formed in order to understand how climate affects them. The authors conclude that commonly used archaeological excavation methods (10 cm arbitrary levels) mask clear stratigraphy.

Chapters eleven through thirteen finally begin to move the book from geology back to archaeology and artifact assemblages, this time to track how different groups interacted with each other and moved around on the landscape.

Bridgman Sweeny begins this section with her study of side-notched bifaces. Based on variations in the Early Archaic Side-Notched horizon (Taylor, Bolen, and Big Sandy bifaces), Bridgman Sweeny uses social network analysis to map the ways Early Archaic groups interacted on what she terms the "bandscape."

Similar to Bridgman Sweeny's chapter, Thulman's research uses geometric morphometrics to infer social learning environments from variations in the hafts of Bolen bifaces. His analysis demonstrates that side-notched corner-notched types seem to overlap temporally in Florida, but not elsewhere.

Unlike Bridgman Sweeny and Thulman, Wilkinson uses raw material quality and distribution rather than biface morphology to discuss how people utilized the inter-riverine zone between the Savannah and Congaree/Santee drainages. His data showed that Archaic groups were using the inter-riverine zone for more than seasonal foraging trips and that these distributions do not reflect territorial boundaries.

The book concludes with chapters by David Anderson and Joseph Schuldenrein. Though Anderson does a good job of summarizing the arguments presented throughout, Schuldenrein's chapter is somewhat perplexingly placed after Anderson's. Since it is a summary of the history of human ecology and geoarchaeological research, Schuldenrein's chapter seems better placed earlier in the book, between chapters nine and ten; its inclusion at the end makes the book feel unfinished.

Early Human Life on the Southeastern Coastal Plain thoroughly covers current research ranging from the timing of the pre-Clovis occupation to Archaic interactions. This book reflects the current state of research of this time in that it is heavily skewed toward geoarchaeology and geomorphology. While this type of research is interesting, and its implications for archaeology are obvious, it does not escape notice that the title of the book is *Early* **Human Life**, yet few of the chapters actually focus on this aspect of research. Paleoindian archaeology will benefit greatly from more research, such as conducted by Smallwood et al., Bridgman Sweeny, Thulman, and Wilkinson.

Jessica M. Cooper received her M.A. in Anthropology from the University of South Carolina in 2017 and her B.A. from George Mason University in 2011. She has been doing archaeology in South Carolina since 2012. Her research interests include the Woodland period in the Southeast, lithics, and feminist archaeology.

ABOUT THE CONTRIBUTORS

David G. Anderson is a Professor in the Department of Anthropology at the University of Tennessee, Knoxville. He has written ca. 250 books, monographs and technical papers on past human occupations in the Southeast and beyond. An ASSC member since 1973, he has conducted work at many locations in South Carolina, including at Cal Smoak, Mattassee Lake, along Congaree Creek near Columbia, and along the Savannah River.

Christopher Judge is the Assistant Director of Native American Studies at the University of South Carolina Lancaster and directs the Native American Studies Center. He teaches anthropology and archaeology courses and conducts the weekly Kolb site all-volunteer archaeology lab on Thursdays.

Brent Burgin is the Archivist at the Native American Studies Center at the University of South Carolina Lancaster. Brent is also the USC Lancaster Archivist and curates the papers of the Archaeology Society of South Carolina. With the assistance of many others, he recently helped created the Native South Carolina Digital Archive, an ongoing endeavor. www.nativesouthcarolina.org

Jakob D. Crockett is a native of Salt Lake City, Utah, who earned his PhD in anthropology from the University of South Carolina. He is the founder and Program Director of the Columbia Archaeology Program, a non-profit education and cultural heritage organization. His research interests revolve around archaeology of the contemporary world, the manufacturing of history, commodities, heritage, memory, and the use of space. When not digging square holes, Jakob enjoys working with metal and taking things apart to see how they work.

Robert C. Costello earned his PhD in Biochemistry from Stanford University in 1970. Since 1980 he has served on the faculty of USC Sumter, where he currently holds the rank of Professor of Chemistry. Since 2008, he has been involved in collaborative research in archaeology with Kenn Steffy, which has resulted in several presentations and publications. He received the 2011 ASSC Article of the Year Award for his *South Carolina Antiquities* article *Macroscopic Analysis of an Allendale Chert Flake Tool Assemblage from Northeastern Lake Marion*.

David Palmer grew up in northeast Florida. He earned a B.A. in Archaeological Studies at Boston University, a M.A. in Anthropology at Louisiana State University, and a Ph.D. in Anthropology at the University of California, Berkeley. Palmer is an Assistant Professor of Anthropology, and the James L. Michie Endowed Professor of Historical Archaeology in the Department of Anthropology and Geography at Coastal Carolina University.

John Dodge is an archaeologist from Barnwell, South Carolina. He received his B.A. in Anthropology with a minor in Geography in 2018. He has since enjoyed working with various prehistoric artifacts of North America, both in the field and the lab. His interests broadly include prehistoric ceramics and lithic technology of the Southeast, applied GIS technology, Mississippian motifs and iconography.

Carl Steen is a native of the South Carolina Lowcountry. He received a Bachelors Degree in Anthropology at the University of South Carolina and a Master's Degree in Anthropology at the College of William and Mary. He is president of the Diachronic Research Foundation, a non-profit corporation dedicated to research and historic preservation.

Captain George R. Stubbs received a senatorial appointment to the US Naval Academy, graduating with distinction with the Class of 1958. Selected for and graduating from submarine school, he served the next 27 years of his Navy career in the submarine force. He commanded USS Skipjack (SSN-585) and the US Naval Submarine Base, Pearl Harbor, Hawaii. He developed an interest in archaeology during his Navy tours in Naples, Italy, where he spent time investigating Roman ruins. Pursuing a second bachelor's degree in archaeology from Thomas Edison State University, Trenton, New Jersey, he became an advocational archaeologist. Upon his retirement to Hilton Head, he pursued this interest and served several terms as president of the Archaeological Society of South Carolina and its Hilton Head Chapter.

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