REFINING SOAPSTONE VESSEL CHRONOLOGY IN THE SOUTHEAST

Kenneth E. Sassaman
South Carolina Institute of Archaeology and Anthropology

The development of radiocarbon dating in 1949 revolutionized prehistoric archaeology. Almost instantly, radiocarbon dating put into absolute order the relative chronologies archaeologists had assembled from stratigraphic sequences and artifact crossdating. Further advances enabled the calibration of radiocarbon years to calendar years. This control over time helped to usher in an era of rigorous research, with studies aimed specifically at the causes and consequences of culture change, including the origins of pivotal innovations such as pottery and agriculture.

Although radiocarbon dating has been incredibly beneficial to archaeology, it, like anything else, has its limitations and misapplications. Because the technique is designed to measure the decay of radioactive isotopes remaining in once-living tissue, radiocarbon dating can be applied to only organic matter. Thus, many of the things archaeologists wish to date, such as stone points and potsherds, cannot be dated directly. Instead, archaeologists look for organic matter that is associated with the inorganic materials they want to date. Contexts such as pits, postholes, and burials provide the direct associations archaeologist seek. Unfortunately, such contexts are not always available, so archaeologists often determine ages for objects through indirect association with organic matter. Used uncritically, this practice introduces ambiguity to radiocarbon chronology. Add to this the problems of postdepositional disturbance and contamination, and radiocarbon dating can indeed be very deceiving. Too often, dates are accepted or rejected because of preconceived and untested assumptions about the ages of diagnostic artifacts, rather than the contexts of the samples themselves.

Soapstone vessels in the Southeast are a case in point. Long-

assumed to be the precursors of pottery, soapstone vessels have not been dated very precisely with radiocarbon dating. They are widely recognized as elements of Late Archaic technology, meaning that they ought to date from 5000 to 3000 years before present (B.P.), but very few dates of direct association are available. Because pottery has been dated to as early as 4400 B.P. in the Savannah River valley and nearly as early in Florida, soapstone vessels would have appeared earlier than 4400 B.P. if they were indeed the precursors of pottery. In both areas of early pottery, however, stratigraphic evidence suggests that soapstone vessels postdated the inception of pottery by several centuries (Bullen 1972; Bullen and Bullen 1961; Elliott 1986). The chronological relationship between these two technologies is apparently more complicated than ever imagined.

To refine the chronology of soapstone vessels in the Southeast, I began in 1995 a project using accelerator mass spectrometer (AMS) methods of radiocarbon dating. The AMS method is an advance in radiometric dating that enables very minute samples of organic materials to be dated with great precision. Instead of the multigram samples required by conventional means, reliable AMS dates can be obtained on just a few milligrams of carbon. This has obvious benefits for sampling contexts that before had much too little organic material to date. Of course, the problems of indirect association between samples and artifacts remain, so AMS has not categorically improved the quality of radiocarbon chronology. However, organic matter that adheres to an artifact by virtue of its function in prehistory circumvents the potential pitfalls of indirect association. Examples include the mastic of a haft element, residue inside a pipe bowl, and, of greatest relevance to the subject of this paper, soot on the exterior walls of soapstone vessels.

I report in this paper the 11 AMS dates I have obtained thus far from soot collected from soapstone vessels sherds from sites in Georgia and neighboring states. The results suggest that soapstone vessels are not as old as generally assumed, and that they indeed postdate the inception of pottery across much of the Southeast. After reviewing the methods and results of these preliminary dating efforts, I address briefly some of the implications of this refined chronology for Late Archaic technological change.

SOOT DEPOSITS ON SOAPSTONE VESSEL SHERDS

The exterior surfaces of sherds from soapstone vessels often show traces of carbon deposits, or soot. David Hally (1983) and James Skibo (1992) have conducted experiments to determine the factors responsible for soot formation on vessel exteriors. Soot is formed from the deposition of the by-products of wood combustion. On vessel surfaces well above the level of open fires, soot consists of solid carbon and oxidized wood resins. This type of soot is tenacious, adhering strongly to surfaces even after rubbing or washing. It is found most often near the rim of a vessel, but, like other types of soot elsewhere on vessel surfaces, it can be very patchy in distribution.

Because soapstone vessels usually have exterior surfaces that retain the chisel marks of manufacture, its rim and upper body sherds are especially good environments for soot preservation. Even after rigorous cleaning, soapstone vessel sherds often retain small bits of soot in the deep crevices of chisel marks. I suspect that soot deposits have gone undetected in many such cases. Although I cannot provide actual numbers, at least one-fourth of the hundreds of soapstone vessel sherds I have inspected in the past few years have held traces of soot.

Carbon deposits on vessel sherds can, of course, form from processes other than cooking over open fire. Recycled uses involving fire or incidental burning in postdepositional contexts are alternative causes to consider. However, if the criteria for vessel soot formation outlined by Hally and Skibo are followed, sampling soot for AMS dating can be highly reliable. Large rim and upper body sherds are preferable because they provide sound information on the distribution of soot. Smaller sherds with soot are amenable to sampling so long as the soot is restricted to the exterior surface. Carbon deposits on any of the fracture planes of a sherd are a possible sign of postdepositional alteration and must be avoided. Because we are interested in dating the use of soapstone vessels, and not sherds per se, we have to be sure that soot sampled from sherds formed when the vessel was whole. Even then soot can accumulate over a long period of time, with some burning off and new soot deposited over old. Inasmuch as soapstone vessels were used over many years, if not decades, soot dates reflect either the average age of uses or, more likely, the latter years of use-life. The typical margin or error for AMS dates (roughly 100 to 300 years at

plus or minus two standard deviations) likely encompasses the entire use-life of most soapstone vessels. Other factors affecting the actual age of AMS soot dates, such as the age of wood used in cooking fires, cannot be dismissed as irrelevant. Nevertheless, AMS dating of soot is, without question, the most reliable and accurate means available today to refine the chronology of soapstone vessels. Its application to the soot deposits of ceramic vessels is likewise very promising (e.g., Stephenson 1990).

Sampling soot from sherd surfaces is a relatively simple matter. After establishing that soot has likely accumulated from vessel uses, and not postdepositional causes, the sooted surface is scanned with low-power magnification to locate likely sample points. Patches of soot that are thick and unbroken are preferable, but I have had good results with thin, spotty deposits. A clean dissecting probe or dental pick is used to pluck soot from the sherd surface and onto a clean square of aluminum foil. With sherds that have not been cleaned since being recovered from the ground, grains of sand or clay will likely accompany the soot. This is not a problem, as the radiocarbon lab removes clastic material and other contaminants in their preparation of an accelerator target. My lab of choice, Beta Analytic of Miami, recommends 50 mg of soot, although they can get reliable results with as little as 5 mg. Some of the samples I have submitted to them were indeed quite minuscule, and results have been consistently satisfactory. With large, well-sooted sherds, heavier samples are of course feasible, but they need not exceed 50 mg. I believe it ill-advised, for instance, to scrape all the soot from a sherd to get a sample large enough (i.e., 1 g) for conventional dating. Instead, I collect two or more AMS-sized samples when possible, dating one and saving the rest for later use. Multiple dates will allow for independent verification, while future advances in dating will no doubt increase the precision we enjoy with AMS techniques today. Any soot remaining on sherd surfaces after sampling must be preserved by wrapping in aluminum foil and storing in a clean plastic bag. This recommendation applies as well to sherds collected from primary contexts. Cleaning should be restricted to light brushing to remove soil matrix. In most cases soot deposits are very tenacious, and I have had success with samples taken from sherds kept in cigar boxes for 20 years. Still, it is always wise to avoid contamination and destruction of soot by treating it as a delicate and valuable archaeological treasure. Finally, sherds sampled for soot need to be catalogued for provenience data,

formal and metric attributes, and any other relevant information. I collect plan and profile drawings of every sherd sampled, and, whenever possible, a small sample of the soapstone for possible sourcing analysis.

RESULTS OF AMS DATING OF SOOT

As of February 1997, my inventory of AMS soot dates from soapstone vessel sherds includes 11 dates from 10 sites in 4 states (Figure 1). Three dates come from two sites on the U.S. Department of Energy's Savannah River Site (SRS) in South Carolina. As my home territory, so to speak, the SRS contains dozens of upland sites with soapstone vessel sherds, but none with preserved feature contexts. When sooted sherds from the Tinker Creek site (38AK224) were uncovered in 1994, I took the

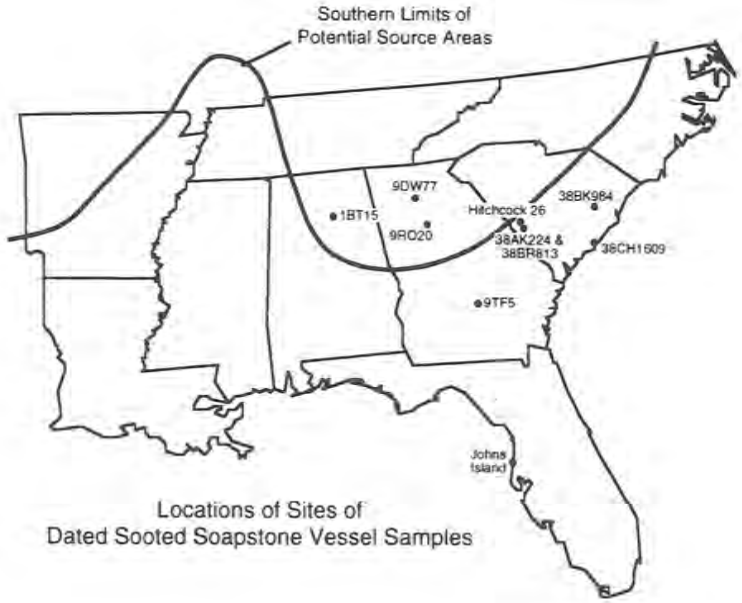

Figure 1. Locations of sites with sooted soapstone vessel sherds dated by AMS methods.

opportunity to experiment with AMS soot dating. Having received satisfactory results with this sample, I began collecting other samples from throughout the region. Archaeologists Albert Goodyear, Bill Stanyard, Michael Finn, Frankie Snow, and Steve Webb provided samples from sites in Georgia, Alabama, and Florida. At my suggestion, Eric Poplin acquired an AMS date on soot from a sherd at a Berkeley County, South Carolina site (38BK984) he excavated recently. Two other South Carolina samples were provided by Kevin Eberhard and Mrs. Betty Stringfellow. Samples collected from several other sites await additional funding.

Table 1 provides all relevant data on the 11 AMS dates acquired thus far. The measured C14 age of these samples ranges from 3620 ± 60 to 2590 ± 40 radiocarbon years before present (B.P.). Ratios of C13/C12 that correct for fractionation adjust the dates by no more than 50 years, usually 20 years. Calibration does little to change the relative differences among the dates except in the case of the youngest two from Johns Island, Florida and 1BT15 in northeast Alabama. What appears as a 120-year difference in measured radiocarbon years is merely 25 calendar years after correction and calibration. I thus assume that these dates are roughly contemporaneous. I comment below on their anomalous chronological position relative to the other nine dates.

The sherd with the oldest date in the inventory, 3610 ± 60 B.P., is from 9DW77, a rockshelter in north Georgia excavated recently by Steve Webb (1997). This sherd and another, conjoining piece comprise a large portion of an oblong vessel at least 25 cm tall. The heavy layer of soot across most of its upper exterior surface was sampled in two locations. At 79 cm below surface, the specimen was deeply buried in a stratigraphic sequence with substantial Middle and Late Archaic deposits. Stratigraphic associations with projectile points and other artifacts classes were ambiguous, but given the buried context and the size of the soot sample, there is no reason to doubt this date.

Lending further credibility to the soot assay from 9DW77 is a conventional date on feature charcoal from another site in the area excavated by Webb (1997), 9CK713. Feature 9 of this open-air site included two soapstone vessel sherds, one of which was sooted. Charcoal from this feature yielded a measured C14 age of 3620 ± 80 B.P. (Beta-90344), nearly identical to the soot date from 9DW77. Correction for C13/C12 is not possible for lack of isotopic

Table 1. Radiocarbon Dates and Related Data for Soot Samples from Soapstone Vessel Sherds in the Southeast.

Site (Prov.)	Lab Number	Measured C14 Age BP ±1 sigma	C13/C12 Ratio	Coventional C14 Age BP ±1 sigma	Calibration Intercept (BC)	One-Sigma Calibrated Range (BC)	Two-Sigma Calibrated Range (BC)	Reference
9DW77 (L9-68-1)	Beta-92523	3620 ± 60	-25.9	3610 ± 60	1945	2025-1890	2130-1765	Webb 1997
9TP5 (Surface)	Beta-84699	3500 ± 60	-28.0	3460 ± 60	1750	1875-1805 1795-1685	1910-1620	this report
38BR813 (20D)	Beta-92522	3440 ± 60	-24.0	3460 ± 60	1750	1875-1805 1795-1685	1910-1620	this report
9RO20 (TU19-L3)	Beta-93458	3430 ± 80	-26.3	3410 ± 80	1690	1765-1615	1900-1510	Stanyard 1997
38AK-Hitchcock 26	Beta-84698	3340 ± 60	-26.2	3320 ± 60	1605	1670-1515	1735-1440	this report
38AK224 (140C-2)	Beta-95681	3320 ± 50	-25.8	3300 ± 50	1535	1630-1510	1685-1440	this report
38BK984	Beta-81405	3200 ± 60	-26.1	3180 ± 60	1430	1504-1400	1535-1305	Poplin et al. 1997
38CH1609 (Surface)	Beta-89079	3180 ± 40	-26.7	3160 ± 40	1420	1440-1400	1505-1380 1335-1330	this report
38AK224 (321C-1)	Beta-79986	3160 ± 60	-25.0	3160 ± 60	1420	1490-1390	1525-1285	this report
Johns Island, FL	Beta-89077	2710 ± 40	-28.2	2660 ± 40	815	825-800	855-790	this report
1BT15 (908-74-1)	Beta-89078	2590 ± 40	-26.5	2570 ± 40	790	800-775	810-760 670-550	Finn 1996

ratio data, but since it is a date on charcoal there is no reason to expect a correction factor greater than a few decades.

Together the two independent dates from sites in north Georgia set the baseline antiquity for soapstone vessels at roughly 3600 radiocarbon years B.P. Soot dates from other Georgia sites are a century or two younger. From site 9RO20 in north-central Georgia, Bill Stanyard (1997) recovered a sooted soapstone sherd that returned a conventional date of 3410 ± 80 B.P. This and other vessel sherds were included in an assemblage Stanyard attributes to the Mill Branch phase of the Late Archaic period. The soot date and Stanyard's feature date of 3540 ± 60 B.P. is a few centuries later than the time range given for Mill Branch in the middle Savannah River valley (4150-3800 B.P.), where it was defined by the work of Ledbetter (1991) and Elliott (et al. 1994). Still, the 9RO20 artifact inventory is very similar to Mill Branch assemblages in the middle Savannah, except, that is, for the addition of soapstone vessels at 9RO20. I suspect that Stanyard is absolutely correct in proposing a cultural-historical link between the middle Savannah and north-central Georgia, and, as I elaborate on in the conclusion of this report, this connection may help to explain the origins of soapstone vessel technology in the region.

The third soot date from Georgia is 3460 ± 60 B.P. for a sherd collected by Frankie Snow from the surface of the Squeaking Tree site (9TF5) in the Ocmulgee Big Bend. Numerous soapstone vessel fragments were accompanied by a large number of plain fiber-tempered sherds at Squeaking Tree (Snow 1977:9). Given the surface context of this assemblage, however, the association between soapstone and pottery is uncertain. Snow (1977:11) has indicated that the association between soapstone and pottery at other sites in the area is highly erratic.

A fourth soot date of 3460 ± 60 B.P. from a Barnwell County, South Carolina site (38BR813) matches the Squeaking Tree date precisely. Late Archaic pottery was in stratigraphic association with this soapstone specimen (Mark J. Brooks, personnel communication 1997), as it is with virtually all soapstone vessel finds on the SRS and in the middle Savannah. Two nearby Aiken County sites provide additional soot dates of 3320 ± 60 B.P. (Hitchcock 26) and 3300 ± 50 B.P. (38AK224; Tinker Creek). The latter site produced another sooted sherd dated to 3160 ± 60 B.P. All three of these middle Savannah sites are upland locales, where assemblages of Thom's Creek and Refuge pottery routinely contain

soapstone vessel sherds. Conversely, soapstone vessel sherds are rarely recovered apart from pottery. As alluded to earlier, soapstone vessels appear at sites in the middle Savannah many centuries after pottery was introduced. The oldest pottery is concentrated at sites along the Savannah River, especially at Stallings shell middens dating from 4400 to 3500 B.P. These sites are abandoned after 3500 B.P. as populations dispersed throughout the uplands. It is under these circumstances that soapstone vessels appeared locally. The four soot dates thus far obtained from upland contexts support this conclusion.

In the lower Coastal Plain of South Carolina we find a similarly late appearance for soapstone vessels. Soot dates of 3180 ± 60 B.P. from 38BK984, excavated by Eric Poplin (et al. 1997), and 3160 ± 40 B.P. from 38CH1609, surface collected by Mrs. Betty Stringfellow, verify that soapstone vessels were part of a well-established Thom's Creek ceramic industry on the coast. As many as nine centuries of pottery manufacture elapsed before soapstone vessels appeared on the seen. The nearest sources of soapstone are some 250 km away, well beyond the cultural range of Thom's Creek pottery. The extent of soapstone importation to the coast cannot be determined at present, although judging from Mrs. Stringfellow's relatively large collection, it was probably significant. At locations far from quarries, soapstone was recycled so often that the incidence of vessels on the coast may be woefully underestimated.

Finally, two especially late dates were obtained from the soot of sherds from sites in Alabama and Florida. A sample collected by Al Goodyear from the Johns Island site north of Tampa returned a date of 2660 ± 40 B.P. Even later is the date of 2570 ± 40 from the Blackburn Fork site (1BT15) in northeast Alabama (Finn 1996). This period of radiocarbon years is characterized by especially erratic rates of cosmic radiation, hence, drastic alterations in relative age through calibration. The upshot is that these dates are nearly identical in calendar years. This is an important correlation because as isolated dates they appear anomalous; together they lend some credibility to the suggestion that soapstone vessel technology made a reappearance in limited parts of the Southeast after disappearing across much of the region after about 3000 B.P. In the two cases reported here, soapstone vessels are clearly associated with well-established ceramic vessel technology. The Blackburn Fork case is especially interesting because of the large assemblage of sandstone,

as well as soapstone, bowl fragments recovered with Wheeler and Alexander pottery. The site's excavator, Michael Finn, is undertaking extensive research to document the associations between stone vessels and pottery throughout Alabama and the surrounding region.

To summarize, the suite of 11 soot dates obtained thus far represents a range of about 1100 radiocarbon years. The sample is too small to infer clustering within this range, although there are suggestions of geographical patterning. For instance, the oldest dates are from samples near the soapstone sources of north Georgia, with outlying uses of roughly the same age in nonsource locations downriver from north Georgia quarries. Later uses occur in more remote nonsource locations of the Atlantic and Florida Gulf coasts. All occurrences of soapstone vessels in nonsource areas postdate the local adoption of pottery.

It is beyond the scope of this report to compare the AMS soot dates to the entire inventory of purported soapstone dates for the Southeast. However, assuming for now that the oldest soot date is a reasonable baseline date for soapstone technology across the region, claims for dates exceeding roughly 3600 B.P. are worth reviewing briefly. To anticipate the results, none of the claims for earlier dates stands up to critical scrutiny.

EVALUATING OLD DATES

Of the few reported dates for soapstone vessels in the Southeast exceeding 3600 (uncalibrated radiocarbon years) B.P., only one is from a feature context. At the Falcon Field site in Fayette County, Georgia, Dan Elliott (1989:51) found a soapstone vessel sherd at the top of a rock cluster and basin-shaped pit some 18-33 cm below surface. A 0.25 g sample of charcoal collected from the base of the pit returned a date of 4170 ± 150 B.P. after extended counting. In his report, Elliott described this as the oldest date for soapstone vessels in the Southeast, but has since expressed doubts about the association (Dan Elliott, personal communication, 1996).

Other early dates for soapstone vessels in the Southeast are based on stratigraphic interpretations and crossdating. One of the key sites to establish the stratigraphic and temporal priority of soapstone vessels over pottery is Gaston in Halifax County, North Carolina. Best known from Coe's 1964 report on the Formative Cultures, the Gaston excavations were largely the effort of Stanley

South (1959). Gaston contained several feet of stratified alluvial deposits, with a buried Savannah River Late Archaic component overlain by 15 inches of sterile sand and then capped by a series of feature-rich Woodland components.

Sixty-two sherds of soapstone vessels were recovered from Gaston investigations, according to Coe (1964:122). He briefly describes the contexts of these finds, enumerating how many came from Woodland pit features, the Woodland midden, and the underlying strata. Although the majority of the soapstone sherds came from Woodland pits, he did not believe "that this stone ware was associated with the ceramic period, but rather that these fragments were brought up from the lower levels by the digging of deep pits" (Coe 1964:112). He concluded that the "majority of evidence, therefore, indicated that the point of origin of these steatite pot fragments was the Savannah River level" (Coe 1964:112-113).

My examination of Coe's published data does not corroborate this conclusion. The fact that the majority of the soapstone sherds was recovered from Woodland features is suspicious enough, but considering that none of these intrusive features relocated Savannah River Stemmed points to Woodland contexts makes the Late Archaic attribution all the more tenuous. What is more, of the 23 soapstone sherds found in excavated level context, none appear to have come from the same buried stratum that yielded Savannah River Stemmed points. As best as I can tell from Coe's published data, all soapstone vessel sherds from Gaston that were not in Woodland pits were stratigraphically superior to Late Archaic artifacts. I must conclude that Coe's assignment of soapstone sherds to the Late Archaic was derived from a priori assumptions, not the evidence from Gaston. Unfortunately, his uncalibrated radiocarbon date of 1944 B.C. for Savannah River period hearths at Gaston has been taken as evidence that soapstone vessel technology dates back to 4000 years B.P.

A second North Carolina site that has been influential in perpetuating greater antiquity for soapstone vessels is Warren Wilson in the Appalachian Summit region. Keel's (1976) report of excavations at Warren Wilson focused on the Early Woodland Swannanoa component, which was contained in a thin, buried midden called Zone B. Below Zone B was a thicker stratum, Zone C, that contained a Savannah River Late Archaic component.

Some 763 sherds of soapstone and a whole vessel are reported

from the Warren Wilson site by Keel (1976:187). Just over 400 of these sherds came from Zone B, the Swannanoa stratum, and another 211 came from the overlying surface stratum. The five soapstone sherds in features were associated with Swannanoa pottery. The remaining 138 sherds were from the Late Archaic stratum. Because these various contexts were sampled unequally, Keel extrapolated ratios for soapstone sherds per unit area. He calculated a ratio of 0.02 sherds per square foot for Zone A and 0.05 for Zone B. Keel reports a whopping 1.3 sherds per square foot for the Late Archaic stratum, Zone C. This is either a typographical error of 0.13 or a mathematical error, for it predicts a total sherd count of 5,460 sherds for Zone C, more than 5,000 over the actual count. I recalculated the ratios using Keel's published inventory to arrive at a virtually equal distribution of 0.063 and 0.066 sherds per square foot for Zones B and C, respectively.

If we consider only the portion of Warren Wilson that was excavated completely through Zone C (200 Trench; 1200 square feet), then 11 percent of 227 soapstone sherds were from Zone A, 59 percent from Zone B, and 30 percent from Zone C. If we calculate ratios by unit volume, rather than unit area, the relatively thin Zone B would have a much inflated soapstone sherd density. If we consider the horizontal distribution of soapstone sherds relative to Swannanoa ceramic sherds we find consistent positive covariation. All indications are that the soapstone vessel assemblage from Warren Wilson is Swannanoa in age, not Savannah River Late Archaic. It is probably no older than 3000 B.P. Keel (1976:187, 211) recognized that soapstone vessels must have continued into Swannanoa times, although he believed there was "little doubt that the majority of the steatite vessels was made by the Savannah River folk" (Keel 1976:187). Again, empirical evidence from Warren Wilson does not support this claim.

It is not my intent to criticize the work of Coe or Keel, for the apparent bias they had for putting soapstone vessel technology ahead of pottery was pervasive. Other examples from early work include Rouse's (1951:240) prediction that stone bowls would someday be found in preceramic contexts in Florida, despite their absence from the many preceramic sites he surveyed in the Indian River area. None have turned up to date, and I think Ripley Bullen (1972:21) was keen on that a long time ago.

William Webb and colleagues reported on a number of contexts for soapstone and sandstone vessels at shell-midden sites

in the middle Tennessee River valley. Because of incomplete reporting, it is difficult to reconstruct the exact contexts of many such finds. However, the Perry site is an obvious case of misassignment. Here an infant was buried with shell beads, a terrapin shell, a limestone celt, and large portions of a soapstone vessel. Stratigraphic data provided by Webb and DeJarnette (1942) show that this burial originated at the pottery level. Only one other soapstone sherd was recovered from Perry, but the site contained several sandstone vessel sherds distributed "sparingly at depths within and below the pottery zone" (Webb and DeJarnette 1942:79). The numbers they provide show that more than half of the sherds came from the upper two feet of deposits, what they call the pottery zone, and that none of the sandstone sherds was found in levels devoid of pottery (Webb and DeJarnette 1942:77-78). They go on to suggest that "it would seem certain that a few vessels of sandstone and steatite were in use at this site long before pottery was known or used on this midden" (Webb and DeJarnette 1942:79). Nothing in the evidence they present would lead me to such a conclusion.

That the precedence of soapstone vessels over pottery was so fixed in the minds of many archaeologists can be traced to the evolutionary thinking of the time, as well as the particular circumstances of early investigations of soapstone technology. Accounts of soapstone quarries by Putnam (1878), Holmes (1897), Bushnell (1926), and others, taught us a great deal about the extraction and shaping of vessel preforms, but nothing about the age and function of vessels. None of these sites contained stratified deposits, and associated implements were limited to tools of extraction and initial shaping. Quarries produced no evidence for habitation, hence they lacked pottery and other traces of post-Archaic occupations. This alone would appear to have reinforced in the minds of many prehistorians that soapstone vessel technology was a prepottery industry.

DISCUSSION AND CONCLUSION

To summarize, the radiocarbon chronology for soapstone vessels in the Southeast does not exceed circa 3650 uncalibrated years B.P. Claims for earlier origins do not hold up to critical scrutiny. In many areas of the region, soapstone vessels did not appear until after ceramic vessel technology was adopted locally. Certainly there are locales at which soapstone vessels predated the

local use of pottery. Examples include the early appearance of soapstone vessels in north Georgia, as reported here, as well as later uses in Tennessee (Chapman 1981; Childress and Buchner 1993; Faulkner and McCollough 1974), where pottery was an especially late addition to local inventories. Still, I suggest that the use of soapstone vessels in any area of the Southeast, whether preceramic or not, cannot be understood apart from the innovation of pottery. If we consider the specific historical and cultural contexts for early container technologies, we find, I believe, that the alternative uses of stone bowls or pots involved more than simply utilitarian concerns.

The history of soapstone and early pottery in the Savannah River valley illustrates how nonutilitarian concerns may have shaped the choices individuals made regarding the uses of alternative vessel technology (see Sassaman 1997). To summarize briefly, soapstone and pottery were among the material emblems of ethnicity that distinguished Piedmont from Coastal Plain populations. Before pottery appeared on the scene at about 4400 B.P., soapstone had a long history of use as a raw material for cooking stones and bannerstones among Piedmont residents. The use of pottery was initiated by Coastal Plain residents. Their first vessels were flat-bottomed basins used for indirect-heat cooking with soapstone cooking stones and other rocks. Soapstone did not outcrop in the Coastal Plain, so it had to be acquired through direct, long-distance procurement, or, more likely, through alliances with Piedmont neighbors. Pottery was not adopted by individuals occupying the Piedmont, not even after innovations for direct-heat cooking rendered soapstone slab cooking unnecessary. I have argued elsewhere (Sassaman 1993) that the resistance to technological change may have been grounded in efforts to perpetuate alliances predicated on soapstone exchange. I further suggested that the apparent ethnic distinctions between Coastal Plain and Piedmont groups paralleled gender relations as regards cooking technology, with females responsible for pottery innovations and men in control of soapstone acquisition and trade.

The relationship between ethnicity and gender becomes clearer when we consider the social organization of early pottery using groups. By 4000 B.P., Coastal Plain residents began to spend more time in the Fall Zone and lower Piedmont of the middle Savannah River valley. Their composition at this point may have resulted from the assimilation of Piedmont and Coastal Plain

residents into one group, though marriage and other means. However, the emerging cultural expression we refer to as Stallings appears to have been organized by rules of exclusion. Analysis of the technology and decoration of Stallings pottery suggests that Stallings Culture followed rules of marriage whereby women remained in their natal territories, while their mates were recruited from outside (Sassaman and Rudolphi 1995). Men who were lineal descendants of Piedmont groups may have been able to marry Stallings women and then join their wives' groups, but there is nothing to suggest that such men were able to take Stallings brides away from their natal lands. The inequity of this arrangement may have been disadvantageous to Piedmont groups attempting to sustain themselves biologically and socially. Over the 200 years during which Stallings Culture rose to prominence (i.e., 4000-3800 B.P.), Piedmont groups became increasingly remote. Known today as the Mill Branch phase, small enclaves persisted in the uplands of the middle Savannah during this period, but completely abandoned the area after 3800 B.P. Rather than simply "evolve" into a succeeding "culture," members of Mill Branch affiliation appear to have relocated into portions of north-central Georgia (see Stanyard 1997), where they maintained a traditional lifestyle. Here they began to make and use soapstone vessels.

In one sense, soapstone vessels can be viewed as a technological solution to challenges facing descendants of Mill Branch Culture. On the other hand, they certainly had knowledge of pottery, and there is nothing yet from the archaeological record to suggest they experienced any new demands on cooking technology. Rather, the greatest challenges may have been in establishing new alliances and relations with regional neighbors and to build a new cultural identity from the remnants of their traditions. In this regard, soapstone vessels embodied the raw material of tradition (soapstone) and the form of innovation (pottery) that paralleled both the ethnic distinctions of their history (Mill Branch/Stallings) and the gender relations underwriting inequality (men:outsiders; women:insiders). For them, soapstone vessels may have symbolized the mediation of contradictions (ethnicity, gender) that had undermined more open, egalitarian social relations. Shortly after appearing, soapstone vessels were exported great distances into peninsular Florida, the Gulf Coast, and, eventually, to Poverty Point. They clearly had a conspicuous role in the intergroup relations of regional populations, many of which, by this time, had

developed, or at least had access to, full-blown pottery technology. Alliances directed away from the middle Savannah River valley may have themselves contributed to the collapse of Stallings Culture. Classic Stallings Culture with its elaborate pottery, large shell middens, and concentrated riverine settlement pattern, dissolved at about 3500 B.P. Appearing at the very same time, for the very first time in the area, were soapstone vessels.

I would never suggest that the specific events and consequences recounted for soapstone vessels and pottery in the Savannah River valley will explain their patterns of use elsewhere in the Southeast. Rather, my intent has been to show only that specific histories and cultural contexts do matter. A simplified explanation for the uses of soapstone vessels and pottery will not suffice. The problem is complex, involving not only utilitarian concerns, but also cultural values, traditions, power relations, and the like. Aside from all the theorizing and analysis required, I could not have even begun to reconstruct the complexities of middle Savannah uses of pottery and soapstone without reliable chronology. The AMS dating of soot on soapstone vessels is helping to improve the regional chronology of this technology, but much more work is needed. For now the data have shown that our preconceptions about technological evolution are perhaps the greatest hindrance to improving our knowledge about the actual experiences of our prehistoric subjects. As we continue to apply new techniques and methods to expose the details of specific histories, we must remain open minded to alternative explanations for the things we now believe to be certain.

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RETHINKING EARLY MISSISSIPPIAN CHRONOLOGY AND CULTURAL CONTACT IN CENTRAL GEORGIA: THE VIEW FROM TARVER (9JO6)

Thomas J. Pluckhahn
Southeastern Archeological Services

Taxonomy in archaeology should be viewed as a system of working hypotheses which may be changed as the evidence warrants and opinion changes. Walter W. Taylor

So much of the basic cultural history for Georgia was developed during the Works Progress Administration (WPA) excavations at Macon that those who are familiar with the sequence cannot help be impressed when they visit the city today. From Napier Avenue to the old Lamar farm, to the small stream known as Swift Creek, the landscape in and around the city of Macon reads like a veritable roster of Georgia ceramic types. While most of the types that were defined during the WPA work in the region have survived the test of time, a few were never well defined and have caused considerable confusion over the years. This is particularly true with two simple stamped pottery traditions, Mossy Oak and Vining. Recent excavations at the Macon area provide greater resolution of the cultural chronology for central Georgia, particularly in regard to simple stamped pottery. Moreover, the results provide important insight into intra-regional interaction during the Early Mississippian period.

BACKGROUND

Almost exactly sixty years ago, at the height of the WPA archaeology program, Gordon Willey directed excavations at the Mossy Oak site (Walker 1994:23). As summarized later by Charles Fairbanks (1952:286), the excavations at Mossy Oak revealed a deposit of simple stamped pottery in stratigraphic levels below a