

CHAOS THEORY AND CALUMET CEREMONIALISM IN
SOUTHWESTERN NORTH CAROLINA

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Calumet ceremonialism was widely practiced by Native American and European colonial groups in the Great Plains and Southeast during the late seventeenth century and the early eighteenth century. Cultural practices associated with smoking calumet pipes have roots in the prehistoric past, but the spread of calumet ceremonialism across the Southeast was associated with the spread of European colonists and colonialism. Calumet ceremonialism served the needs for groups to have a means of creating balance, and of setting the stage for peaceful interaction and exchange, during a period marked by considerable instability and dramatic cultural change. The presence of a redstone elbow pipe bowl fragment from the Coweeta Creek site in southwestern North Carolina demonstrates the participation of Cherokee towns in calumet ceremonialism, despite the remote location of this site in the southern Appalachians, far from major European colonial settlements, and far from areas such as the Mississippi River Valley and the upper Midwest where such pipes are much more common.

Los grupos de nativos americanos y los europeos de las colonias de las Grandes Llanuras y del Sureste practicaron la ceremonia de calumet extensamente a finales del siglo XVII y principios del XVIII. Las prácticas culturales asociadas al rito de fumar las pipas calumet tienen sus raíces en el pasado prehistórico pero la difusión de la ceremonia de calumet por el Sureste fue producto de la expansión del colonialismo y colonos europeo. La ceremonia de calumet proporcionó un mecanismo para crear un equilibrio entre los grupos y un marco para la interacción e intercambio pacíficos durante un periodo marcado por considerable inestabilidad y un cambio cultural drástico. La presencia en el sitio de Coweta Creek, en el suroeste de Carolina del Norte, de un fragmento de la base de la cazoleta de una pipa en piedra roja muestra la participación de los asentamientos cheroquis en la ceremonia de calumet; a pesar de la ubicación remota de este sitio en el sur de los Apalaches, lejos de importantes asentamientos coloniales europeos y lejos de áreas como el valle del río Misisipi y los estados del norte del Medio Oeste, donde estas pipas son mucho más comunes.

During the late 1800s, James Mooney (1900), an ethnologist with the Bureau of American Ethnology at the Smithsonian Institution, compiled and recorded many Cherokee myths and legends related to him by Cherokee elders in western North Carolina. One of the historical myths he recorded recounts a visit by Iroquoian-speaking Seneca warriors from the Northeast to make peace with the Iroquoian-speaking Cherokee in the southern Appalachians (Mooney 1900:367–370). There is no specific calendrical date that can be attached to the events related in this myth—entitled “Ga’na’s Adventures Among the Cherokee”—but the Seneca and other groups from the Northeast are known to have raided the Cherokee and other native groups in the Southeast and Midatlantic during the late 1600s and the 1700s (Bowne 2005; Ethridge 2010; Hatley 1993; Marcoux 2010; Merrell 1987, 1989, 2006; Mooney 1900; Oatis 2004; Perdue 1987; Ramsey 2008; Richter 1987, 1992; but see Perdue 1987:140–141). According to the story about Ga’na’s visit to a Cherokee town, when the Seneca arrived, dancers entered the town carrying eagle feathers and shouting, and they asked the townspeople to gather in the townhouse, the typical form of Cherokee public architecture. With many people in the Cherokee townhouse, the Seneca chief proposed that the Seneca and Cherokee stop attacking each other, and he gave the Cherokee chief a belt of wampum as a material symbol of a diplomatic commitment by the Seneca. The following day, after considering the conditions set by the Seneca speaker, the Cherokee town agreed to his proposal, and both the Seneca and Cherokee agreed to “bury” their weapons and to end the animosity between them—as happened in 1768, for example, when the Iroquois and the Cherokee agreed to a truce, after a long period of simmering rivalry and conflict (Perdue 1987:145–146).

Regarding the ceremonial approach to the Cherokee town by the Seneca dancers with eagle feathers, Mooney (1900:493) wrote that:

The method of ceremonial approach here described was probably more or less general among the [Eastern Woodlands] tribes. On the [Great Plains] the visitors usually dismount in sight of the other camp and advance on foot in slow procession, chanting the “visiting song,” while the leader holds out the red stone pipe, which is the symbol of truce or friendship.

Regarding the belt of white wampum given by the Seneca to the Cherokee, Mooney (1900:494) wrote that:

As is well known, white was universally typical of peace. The traditional peace-pipe of the Cherokee was of white stone and the word itself is symbolic of peace and happiness in their oratory and sacred formulas. Thus the speaker at the Green-corn dance invites the people to come along the white path and enter the white house of peace to partake of the new white food...As already noted, every paragraph of an ambassador’s speech was accompanied by the delivery of a string or belt of wampum to give authority to his words, and to accept the belt was to accept the condition or compact which it typified. On the plains the red stone pipe took the place of the wampum.

According to another oral tradition recorded by Mooney—“The Mounds and the Constant Fire: The Sacred Old Things”—the Cherokee are said to have possessed “a great pipe, carved from white stone, with seven stem-holes, so that seven men could sit around and smoke from it at once at their peace councils” (Mooney 1900:397). It is tempting to identify the white

color of the sacred Cherokee pipe noted here as a symbol of peace and purity (Gearing 1958, 1962; Hudson 1976; Lankford 1987, 1993). The references to seven stemholes and the seven men present at “peace councils” probably relate to the seven traditional Cherokee clans (Gilbert 1937, 1943; Mooney 1891, 1900; Perdue 1998; Persico 1979).

Lieutenant Henry Timberlake visited the Overhill Cherokee settlements in eastern Tennessee in 1761 to read proposed articles of peace and alliance between the English colony of Virginia and Cherokee towns. With the leaders of all the Overhill Cherokee towns present at the Chota townhouse, Timberlake read those articles, after which Timberlake wrote that “the peace-pipe was smoked,” and, then, one of the most prominent and powerful Overhill Cherokee town leaders spoke in favor of peace with the English (King 2007:17). After this speech, Timberlake was presented with pipes from several different Overhill town leaders, as a sign of peace, and a token of friendship (King 2007:18; West 1934:263).

Timberlake did not record the colors and materials of the pipes presented to him during this event at Chota, but several days later he found himself in the townhouse at Citico, and he described a pipe prepared during a dance as follows (King 2007:21; Power 2007:78; Williams 1927:65).

During this dance the peace-pipe was prepared; the bowl of it was red stone, curiously cut with a knife, it being very soft, tho’ extremely pretty when polished. Some of these are of black stone, and some of the same earth they make their pots with, but beautifully diversified. The stem is about three feet long, finely adorned with porcupine quills, dyed feathers, deers hair, and such like gaudy trifles.

From this passage, it is clear that the bowl of the peace pipe at Citico was made of soft, red stone. Timberlake participated in smoking this peace pipe, and as was the case at Chota, many people individually offered pipes for him to smoke.

This description by Timberlake of smoking a peace pipe at Citico has been cited as evidence that eighteenth-century Cherokee groups smoked calumets (West 1934:263), and, indeed, calumet pipes have been found at eighteenth-century Cherokee settlements in eastern Tennessee (Chapman 1985; Polhemus 1987:816–819; Schroedl 1986:375–378). On the other hand, Timberlake also wrote that during the dance at Citico, after he had smoked “the peace-pipe,” many other people then presented him with different pipes from which to smoke (King 2007:20–21). If calumet pipes were sacred possessions, and if only select individuals were considered keepers of such pipes (West 1934:263–265), then there may have been a significant difference between the peace pipe that Timberlake smoked in the Citico townhouse, and the myriad other pipes that townspeople from Citico invited him to smoke during the same event.

For the Cherokee and other native groups in southeastern North America, white symbolized peace, wholesomeness, and purity, while red and black symbolized blood, war, and death (Hudson 1976:126–127, 132, 274, 416; Lankford 1987:38–39, 1993; Power 2004:134–137, 2007:53–54). From this perspective, it makes some sense that Cherokee peace pipes may sometimes have been made of white or light-colored stone, although Timberlake clearly noted the presence of red and black stone pipes. Such pipes were smoked at diplomatic events involving Cherokee town leaders, the leaders of other Native American groups, and European colonists (Mooney 1900:390, 397, 493). As noted by Mooney (1900:485), native groups on the Great Plains smoked red stone pipes as part of peace ceremonials. Whatever colors would have been appropriate in different cultural settings, the point is that the Cherokee and other Native

American groups had pipes that were smoked at community events and diplomatic events. Such pipes—that is, the stone bowls, and the stems—were known to French colonists as calumets (Blakeslee 1981; Brown 1989, 2006; Drooker 1997; Hall 1977, 1983, 1987, 1997; Paper 1988; Turnbaugh 1975, 1977, 1979; West 1934:231–270, 826–851). Calumet ceremonialism was not recorded by Spanish explorers during the 1500s, but French colonists saw calumets and participated in calumet ceremonies with many different groups in the Great Lakes region, in the Mississippi River Valley, and along the coast of the Gulf of Mexico during the late 1600s and early 1700s (Ethridge 2010:130–131, 138, 154, 175, 177, 181, 184, 185, 189, 211; McWilliams 1988, 1991).

One of the groups in the Lower Mississippi Valley who became well known to French colonists in Louisiana were the Natchez (I. W. Brown 1979, 1982, 1985, 1990, 1992, 1998; J. A. Brown 1990; Lorenz 2000; Neitzel 1965, 1983; Smith 1986; Steponaitis 1986, 1998), who possessed a “peace calumet” and a “war calumet” (Hudson 1976:397; Swanton 1911:128–134). Natchez war calumets and peace calumets were very similar, except that war calumets were covered with the black skin of buzzards, whereas peace calumets were covered with the skin of wood ducks. Attached to peace calumets were white eagle feathers, the tips of which were black, with tufts dyed red added as tassels to the tips of the feathers themselves. These descriptions by Antoine le Page du Pratz of Natchez war calumets and peace calumets do not specify the color of the stone from which the pipes themselves were made, but they do indicate that color symbolism was incorporated into calumets and also into the events—related to making alliances and making war—during which calumets were smoked. Along with evidence for smoking pipes and other ritual practices at diplomatic events involving the Cherokee, calumet smoking by the Natchez

and other groups of the Lower Mississippi Valley demonstrates the symbolic power of calumet pipes in the Native American Southeast, more generally.

Calumet Ceremonialism

Pipe smoking has an ancient history in native societies of North America, and calumet pipes are known to have been smoked as part of ritual events—often involving singing, and often referred to as “singing the calumet”—that set the stage for peaceful interactions and trade, including interactions between different native groups, and between native groups and French colonists. Although calumet ceremonialism and calumet pipes derive from traditional Native North American cultural practices predating European contact, especially in the Plains and Midwest, calumet smoking spread quite widely and rapidly across eastern North America during the 1600s and early 1700s, during the period after Spanish exploration and the beginnings of French exploration and settlement. Spanish conquistadors neither participated in nor witnessed calumet ceremonies, but French explorers and traders often did, and the French probably contributed greatly to the spread of calumet smoking across eastern North America. The following summary considers major characteristics of calumet pipes and associated ceremonialism, alternative interpretations by archaeologists of the development and spread of calumet ceremonialism, and evidence about the dates of calumet ceremonialism in different areas of North America, particularly the Southeast.

Calumets were incorporated into rituals related to alliances and warfare. The shapes of many calumet pipes resembled the shapes of axes, hatchets, arrows, and even guns. Participants in calumet ceremonialism developed kin relationships and alliances, at least periodically, and the diplomatic relations created through calumet ceremonialism prevented warfare and conflict between those participants. Some groups possessed different calumet pipes for war and for peace. These pipes were smoked at diplomatic events and at war feasts. During the early 1700s, Antoine Le Page du Pratz illustrated a procession and presentation of a calumet pipe by a group of Chitimachas to the French colonial governor of Louisiane (Brown 2006:396), and drawings by Alexandre De Batz depict an Attakapa man (Brown 2006:373) and an Acolapissa chief (Brown 2006:397) with calumets. During his travels across the Great Plains in the early-to-mid 1800s, the American artist George Catlin painted portraits of many Native American people, he painted and collected calumets and other pipes, and he also painted the pipestone quarry in southwestern Minnesota whose raw material is now known as “catlinite” (Ewers 1979).

Robert Hall (1979, 1983, 1987, 1997:48–58, 109–123) relates the origins of calumet pipes and calumet ceremonialism to Native American mourning rituals, and adoption rituals through which kin relationships were formed between people from different clans, different communities, and different tribes. He characterizes calumet pipes as symbolic weapons, and, specifically, as symbolic forms of spearthrowers known as atlatls. He places the origins of calumet ceremonialism within the Middle Woodland period in eastern North America, during the late first millennium B.C. and the early first millennium A.D., the period during which there are significant associations between carved stone platform pipes and burial mound ceremonialism at sites associated with the Hopewell interaction sphere. Given the clear similarities between the shapes of pipes and weapons such as atlatls and arrows, the linkages that Hall has drawn between

calumet pipes and weaponry are convincing (Brown 2006:372–380). Another significant contribution Hall has made to the study of calumet ceremonialism is that stone pipes themselves—the parts most likely to be preserved and to be found archaeologically—are not always the only, nor necessarily even the most significant, component of calumet rituals (Hall 1997:57–58). Some calumets were wands that resembled arrows, and some wands had neither pipe bowls nor stem holes, underscoring the point that while pipe smoking was practiced in some cases, calumet ceremonialism was focused primarily on creating kin relationships between people and between groups (Hall 1987:30–32). Some documentary evidence indicates that calumet stems and stone calumet pipe bowls were given away to other participants in calumet ceremonies, underscoring the distinction made between calumet stems and the bowls of calumet pipes (Brown 2006:372–375).

William Turnbaugh (1975, 1977, 1979) agrees with the linkage between calumet pipes and weaponry, but he argues that calumet ceremonialism is evidence of a nativistic response to European contact. Turnbaugh (1979) focuses his argument on documentary evidence about the adoption of calumet pipes by Abenakis living in the vicinity of the French colonial settlement of Montreal during the early 1700s. Fenton (1953) similarly traces the spread of calumet ceremonialism from the Great Plains to the Great Lakes during the 1600s, and from there to the Northeast and Southeast during the late 1600s and early 1700s, largely following the spread of French exploration and trade during this period.

Donald Blakeslee (1981) agrees that calumet ceremonialism developed in the Great Plains before its spread across the Eastern Woodlands, but he cites documentary evidence from Spanish sources of ceremonies involving pipe smoking by Apache groups in the southern Plains during the mid–seventeenth century, arguing that this evidence reflects calumet ceremonialism in

the Plains before the period of French exploration and settlement. He places the origins of calumet ceremonialism at approximately 710 B.P., within the late prehistoric Central Plains Tradition, which dates from A.D. 950 to 1450, and which is manifested at several earthlodge village sites in Kansas and Nebraska (Blakeslee 2005; Roper and Pauls 2005; Steinacher and Carlson 1998). He argues that calumet ceremonialism served to form alliances between different groups in the Central Plains, and that it spread to the Eastern Woodlands during the mid-to-late seventeenth century, more as a mechanism for making war and making peace than as a nativistic movement and response to European contact and colonialism (Blakeslee 1981).

James Warren Springer (1981) reviews documentary evidence about Native American pipe smoking in eastern North America, in general, and he argues that calumet ceremonialism was not developed within revitalization movements or nativistic responses to European contact, but, instead, that it spread from the Great Plains and the Great Lakes to the Mississippi Valley before European contact. He argues that calumet ceremonialism was closely associated with adoption rites in the Great Plains, but that its practice in the Mississippi Valley and eastern North America focused primarily on the formation of alliances that could be and were mobilized for warfare (see also Swanton 1946:698). He further argues that the widespread practice of calumet ceremonialism evident to French explorers and traders in the late 1600s indicates that it was widely practiced by native groups before European contact. One potential problem with this interpretation is that there are no references to calumet ceremonialism, *per se*, in the chronicles of sixteenth-century Spanish entradas. Springer attributes the absence of any references to calumet ceremonialism in Spanish accounts from the 1500s to the tendency of sixteenth-century Spanish conquistadors to emphasize threats and violence rather than diplomacy, in contrast to the

more interactive approach taken by many French explorers and traders during the late 1600s and early 1700s.

Ian Brown (1989, 2006) counters that while the contact episodes involving militaristic sixteenth-century Spanish expeditions were different than those involving seventeenth-century French explorers and traders, there still would have been ample opportunity for members of expeditions led by Juan Pánfilo de Narváez (1528), Hernando de Soto (1539–1543), Tristan de Luna (1559–1560), and Juan Pardo (1566–1568) to observe calumet ceremonialism, were it practiced by native groups in the Southeast during the sixteenth century. Notably, the Soto entrada was the only sixteenth-century Spanish expedition that reached the Mississippi Valley, where calumet ceremonialism was widespread during the period of seventeenth-century French exploration and trade. Nevertheless, members of the Soto expedition were in the Mississippi Valley and areas of Arkansas and Texas from 1541 through 1543, and, still, there is no recorded instance of calumet ceremonialism in written accounts of those three years. Conflicts did arise between Spanish expeditions and Native American groups, Native American warriors often attacked and harassed Spanish expeditions, and some mutually beneficial alliances were developed between Spanish conquistadores and Mississippian chiefs (Dye 1990, 1994, 2002; Ethridge 2010; Hudson 1997; Marrinan et al. 1990; Milanich 1990; Rodning et al. 2010). Captain Juan Pardo actually did emphasize diplomacy during his expeditions in the Carolinas and eastern Tennessee, but there is no indication that Pardo ever participated in calumet ceremonialism, even though Pardo commonly did give diplomatic talks to Native American community leaders, to whom he gave gifts such as iron tools and glass beads, while encouraging them to ally themselves with the Spanish colony of La Florida (Beck et al. 2006, 2011; Booker et al. 1992; Hudson 2005; Levy et al. 1990; Moore 2002; Moore et al. 2005).

Brown (1989, 2006) argues that calumet ceremonialism was indeed introduced to native groups in the Mississippi Valley during the late seventeenth century and that it spread across the Southeast following the spread of French colonists and trade networks. He attributes the interests by native groups in the Southeast in calumet ceremonialism to the power of associated ritual practices designed to create and to restore balance in the unpredictable and rapidly changing new world of the colonial Southeast (Brown 2006:402–403). He notes that calumet ceremonialism persisted through the nineteenth century in the Plains, but that its significance in the Southeast waned almost as rapidly as it spread, perhaps because French colonists themselves failed to follow the rules about producing calumet pipes and participating in calumet rituals during the early eighteenth century (Brown 2006:404–405).

Not all Native North American pipes are calumet pipes, and not all pipes made of red stone are calumets. Pipe smoking has an ancient and widespread history in North America, and smoking had ritual and recreational dimensions (Springer 1981). Many redstone pipes with characteristics resembling those of weapons, and pipes and pipe fragments resembling the calumets that are depicted in paintings and described in written accounts from the 1600s and 1700s, can nevertheless be associated with calumet ceremonialism (Brown 2006).

Redstone Pipes in Southeastern North America

Archaeologists have found redstone pipes at several sites in southeastern North America, at sites in the Plains and the upper Midwest, and at sites in the Susquehanna Valley in Pennsylvania (Brown 1989, 2006; Fundaburk and Foreman 1957:Plate 106; Gundersen 1987, 1993; Kent 1984:151–156; King 1977). Some are made of a type of pipestone argillite known as catlinite, the source of which is an outcrop and quarry in southwestern Minnesota, which was painted by George Catlin during his mid–nineteenth–century travels along the Missouri River and neighboring areas of the Midwestern prairies and Plains (Ewers 1979; West 1934:329–331). Other pipes are made of pipestone argillites from other sources in the Plains and the Midwest (Gundersen 1987, 1993; Gundersen and Tiffany 1986; Gundersen et al. 2002). Without careful compositional analyses, it is difficult to identify specific types of pipestone argillites and the geological sources of them, but these types of stone can be characterized more generically as redstone.

Archaeological examples of redstone pipes have been found at sites across the Southeast, especially in the Mississippi Valley, and at major Mississippian mound centers such as Moundville and Spiro (Figure 1). The lack of any clear evidence for redstone debitage at these sites suggests that pipes were probably made outside the Southeast (Brown 2006:393), perhaps at sites in the Plains and Midwest, in areas where redstone sources and redstone pipes are more common. Wherever they were made, redstone was transported either as pipes or as raw material across considerable distances, and ritual and diplomatic practices associated with these pipes presumably spread with them. French colonists in Louisiana and Mississippi participated in calumet ceremonialism during the period shortly before and after 1700 (Brown 2006:371–384; Hudson 1976:397; Neitzel 1965:16). The refusal of one French colonial governor to smoke calumets with native groups along his route of travel between Illinois and Mobile in 1715—the

French colonial capital of Louisiane, in what is now southern Alabama—may have contributed greatly to discontent by those native groups in Louisiane with the French colony, and the temporary shift by many native towards an alliance with the English colony of Carolina (Ramsey 2008:153–155). Redstone debitage has been found at the Old Mobile site—the capital of the French colonial province of Louisiane in the early eighteenth century—and at the Native American settlement adjacent to Old Mobile, demonstrating that French colonists at Old Mobile made calumet pipes that could be traded to and given to native groups (Brown 2006:383–400; Gundersen et al. 2002). Some of the redstone debitage from Old Mobile is pipestone argillite from Kansas, and some of it is catlinite, perhaps quarried directly from the catlinite source in southwestern Minnesota (Brown 2006:398–400; Gundersen et al. 2002).

The major types of redstone pipes in the Southeast include disk pipes and elbow pipes (Figure 2). Disk pipes have flat, circular or oval disks surrounding the bowls, with short, straight stems. Elbow pipes have bowls placed at right angles to stems, forming either “T” or “L” shapes. The shapes of archaeological examples of redstone pipes are variations on these basic themes. Not all redstone pipes are necessarily calumet pipes, and not all calumet pipes are necessarily made of catlinite or other pipestone argillites, but characteristics of shape and raw material are good indicators of calumet pipes.

Redstone pipes and pipe fragments are present, although not in great numbers, at several sites in historic Cherokee town areas of the southern Appalachians. One redstone disk pipe was found in the burial of an adult in the Nacoochee mound, on the headwaters of the Chattahoochee River in northern Georgia (Figure 2; Brown 2006:391; Heye et al. 1918:39–40). The Nacoochee mound is the location of the Cherokee town of Echota—the town of Nacoochee was located downstream, at the confluence of Sautee Creek and the Soquee River (Duncan and Riggs

2003:322–323). One catlinite pipe fragment from the Chota–Tanasee site in eastern Tennessee, the location of the early–eighteenth century town of Tanasee and the mid–eighteenth century town of Chota, has a depiction of a rifle sight on the bottom of the pipestem (Schroedl 1986:375–378). There are no redstone pipes or pipe fragments from the Tomotely or Mialoquo sites, which are broadly contemporaneous with Chota–Tanasee (Baden 1983; Russ and Chapman 1983). At the Toqua site, the location of a large late prehistoric Mississippian town and an eighteenth–century Cherokee town, several pipe fragments made of schist and other raw materials that outcrop in the southern Appalachians have shapes resembling hatchets, axes, and rifle butts; one small pipe fragment from Toqua is identified as catlinite (Polhemus 1987:816–819). At the site of Great Tellico, the location of the Cherokee settlements of Great Tellico and Chatuga, one redstone disk pipe has been found in a burial that probably dates to the late prehistoric period (Figure 2; Brown 2006:390; Jolly 1973:7). One catlinite pipe from a late prehistoric mound stage at the Hiwassee Island site in eastern Tennessee very closely resembles historic–period catlinite elbow pipes from the historic period (Lewis and Kneberg 1946:119, Plate 70; Lewis et al. 1995:149, Figure 6.14B).

The presence of catlinite pipes and calumet or calumet–like pipes made of other materials at late prehistoric and historic–period sites in Cherokee town areas in eastern Tennessee and northern Georgia is not altogether surprising, given the association between French colonists and the spread of calumet ceremonialism across the Southeast. French *coureurs de bois* are known to have traveled from the Mississippi Valley to the southern Appalachians during the late seventeenth century. The presence of French traders in the western borderlands of the Carolina colony in the late seventeenth century generated some momentum in Charles Town towards developing English trade relations with Cherokee towns (Rothrock 1976). Throughout the early–

to–mid eighteenth century, several Cherokee towns debated whether to favor diplomatic relations and trade with French or English colonists, and French traders periodically visited Cherokee settlements in eastern Tennessee (Baden 1983; Chapman 1985; Hatley 1993). It is possible that these visits by French traders formed the conduit through which calumet ceremonialism spread to Cherokee towns, either in the late 1600s, or during the 1700s. Like other native groups of the Southeast during the eighteenth century, the Cherokee alternated between enmity and alliance with native groups allied to the French or the English, and these cycles of war and peace may have set the stage for the spread of calumet ceremonialism to Cherokee towns during this period. Another possibility is that Natchez refugees brought calumet ceremonialism to the southern Appalachians during the mid–eighteenth century (Brett Riggs, personal communication 2011), after many Natchez fled their homeland in southwestern Mississippi after French attacks in 1731 that were conducted in retaliation for attacks in 1729 by Natchez and other native groups on French outposts in the Lower Mississippi Valley.

Redstone Pipe from Southwestern North Carolina

In addition to the redstone pipes found at late prehistoric and postcontact sites in Cherokee town areas of northern Georgia and eastern Tennessee, one redstone pipe fragment has been found at the Coweeta Creek archaeological site, in southwestern North Carolina. The Coweeta Creek site is the location of a late prehistoric and protohistoric Cherokee settlement dating from the 1400s

through the early 1700s (Dickens 1976, 1978; Keel 1976; Keel et al. 2002; Riggs and Rodning 2002; Rodning 2001a, 2001b, 2002a, 2002b, 2002c, 2008, 2009a, 2009b, 2010a, 2010b, 2011; Rodning and Moore 2010; Rodning and VanDerwarker 2002; Ward and Davis 1999:183–190; Wilson and Rodning 2002). The site is located along the upper Little Tennessee River, in the area of the historic Middle Cherokee towns (Dickens 1979; Duncan and Riggs 2003:17; Hill 1997:68; Mooney 1900; Perdue 1987:136; Smith 1979; Swanton 1946). Excavations by the University of North Carolina from 1965 through 1971 unearthed remnants of a series of public structures at the Coweeta Creek site, known as townhouses, that were built and rebuilt in place, as well as remnants of a plaza and domestic structures in areas around the plaza (Figure 3). For reasons outlined elsewhere (Rodning 2002a, 2007, 2008, 2009a, 2010a), it is likely that the sequence of townhouses at Coweeta Creek dates from the early–to–mid 1600s through the early 1700s, and that the last stage of the townhouse and plaza postdate the late–seventeenth–century abandonment of most or all of the domestic structures at the site (Rodning 2009b). Thousands of artifacts were collected from the ground surface at the Coweeta Creek site during the 1960s and early 1970s, during both preliminary surveys and during the course of excavations, and one artifact found on the ground surface in the village area of the site—southeast of the plaza—is a fragment of a redstone pipe bowl (Figure 4). The pipe fragment itself is some 2.1 cm tall, and the remnant of the rim of the pipe bowl itself indicates that the pipe bowl itself was 2.2 cm in diameter. Hundreds of fragments of smoking pipes were found during excavations at the site, including both clay pipes as well as pipes made of chlorite and steatite, but this pipe bowl fragment is unique at the site in its raw material and in its shape.

The raw material can be identified generally as redstone, and it visually resembles catlinite, although at present there are no compositional data with which to make or to confirm

specific identifications of the raw material type and its provenance. This material is dramatically different than the locally available chlorite from which native groups in western North Carolina made pipes during late prehistory and after European contact (Moore 2002:319; Witthoft 1949). It is also quite different than the steatite with which many pipes were made, in Cherokee town areas and in the upper Catawba River Valley and surrounding areas of the North Carolina Piedmont (Dickens 1976:147, 170, 208; Keel 1976:146, 189; Moore 2002).

The shape of the pipe bowl fragment from Coweeta Creek resembles the bowls of redstone elbow pipes found at several sites in the Mississippi Valley. The pipe bowl is clearly not part of a redstone disk pipe, like those found at the nearby Nacoochee mound in northeastern Georgia, and those from the Hiwassee Island and Great Tellico sites in eastern Tennessee (Brown 2006:388). The pipe bowl fragment from Coweeta Creek has an angled outer edge and a rim that closely resembles examples of elbow pipes from archaeological sites in Mississippi and Louisiana (Brown 2006:398; see also Paper 1988).

The geographic distributions of redstone elbow pipes and redstone disk pipes in the Southeast overlap, but there are interesting differences in these distributions, as well (Figure 1). Disk pipes are relatively common at sites in the Central Mississippi Valley, the Ohio River Valley, and in the Tennessee River Valley—redstone disk pipes have also been found at the Moundville site in Alabama, at the Spiro mounds in southeastern Oklahoma, and at several sites in Arkansas (Brown 2006:394). Elbow pipes are found at Spiro and at several sites in the Lower Mississippi Valley—as already noted, there is also evidence for the production of pipes from pipestone argillite, including elbow pipes, at the French colonial settlement of Old Mobile, in southern Alabama, during the early eighteenth century (Gundersen et al. 2002).

If this redstone pipe fragment from Coweeta Creek does represent an elbow pipe, then it is more comparable to redstone pipes from Alabama, Mississippi, and Louisiana, than it is to disk pipes from sites in Tennessee, Georgia, West Virginia, and Ohio (Figure 1). If cultural preferences have contributed to the spatial distributions of disk pipes and elbow pipes, or if there were different networks through which elbow pipes and disk pipes circulated, then the Cherokee town at Coweeta Creek may have been connected to sources of pipes from the Mississippi Valley or Old Mobile. Of course, there is the debate about the dates at which calumet ceremonialism developed in North America (Blakeslee 1981; Hall 1977, 1997; Turnbaugh 1979), and the dates at which it spread to specific areas in the Southeast (Brown 1989, 2006), but there is widespread agreement that French colonists participated in calumet ceremonialism, and, therefore, French colonists, or native groups allied to the French, could have been sources of calumet pipes and calumet ceremonialism in the southern Appalachians.

Not only can the redstone pipe fragment from Coweeta Creek be attributed to an elbow pipe form, but it can probably also be attributed more specifically to the type of calumets associated with prows at the end (Brown 2006:398–399; Kent 1984:153–154). Brown (2006:393) refers to these calumet elbow pipes as T-shaped, as opposed to L-shaped. The prows on these pipes range can be square, rounded, angled, or shaped like hatchets. The sharply beveled bowl profile is typically associated with calumets that have prows resembling hatchets, and crests or ridges with perforations in them (Figure 5). Although it is potentially problematic to extrapolate from the small redstone pipe fragment from the Coweeta Creek site to such a shape, there is at least circumstantial evidence supporting the idea that the Coweeta Creek calumet was shaped like a hatchet—lending support to its identification as a peace pipe in the form of a symbolic weapon.

The beveled profile of the pipe bowl may have some temporal significance. Kent (1984:151–156) dates examples of this form of calumet pipe from Susquehannock settlements in Pennsylvania to the late 1600s or early 1700s. Brown (2006:397) dates an example of this form of calumet pipe from the Haynes Bluff site in Mississippi to the early eighteenth century. Brown (2006:397–398) dates a similar calumet from the Trudeau site in Louisiana to a slightly later period, the mid–eighteenth century. Importantly, the calumet from Trudeau has a more rounded profile (Brown 2006:Figure 6g), rather than the sharply beveled bowl profiles seen on one of the early eighteenth–century pipe from Haynes Bluff (Brown 2006:Figure 6a), and the sharply beveled bowl profiles seen on the Susquehannock calumets from the site of Conestoga Town, dating to the late 1600s or early 1700s (Kent 1984:153–154). The bowls of T–shaped calumet elbow pipes that are known to date to the 1700s or 1800s typically have rounded or even straight profiles (King 1977:47)—it is possible that the beveled shape seen at Coweeta Creek, Conestoga Town, and Haynes Bluff dates to an earlier period. The fact that the redstone pipe fragment at Coweeta Creek was found on the ground surface makes it difficult to pinpoint its date, but domestic houses in the village seem to have been largely abandoned by the late 1600s (Rodning 2008, 2009b), and the townhouse and plaza sometime during the early 1700s (Rodning 2008, 2009a), making it likely that this probable example of a T–shaped (even hatchet–shaped?) calumet pipe dates to that same timeframe.

Most archaeological considerations of Cherokee trade with European colonists focus on trade relations with English colonists from South Carolina and Virginia during the eighteenth century. Spanish trade goods circulated relatively widely throughout the Southeast during the late 1500s and early 1600s (Waselkov 1989), but colonial traders and trade goods were not widespread in Cherokee town areas until the early eighteenth century (Goodwin 1977; Hatley

1993; Ramsey 2008), and the beginning of the deerskin trade. French traders are known to have traveled from the Mississippi Valley to Cherokee town areas in the southern Appalachians during the late 1600s, in an attempt to establish French trade relations with the Cherokee and other groups in the borderlands of English and Spanish colonial provinces (Crane 2004; Rothrock 1976). During the period of the deerskin trade with the South Carolina colony in the eighteenth century, many Cherokee towns and factions within Cherokee towns are known to have favored alliances and trade relations with French colonists, at least periodically, rather than diplomatic relations with English colonists (Hatley 1993). It is possible that calumet ceremonialism, and actual redstone calumet pipes, were brought to the southern Appalachians by French traders during the late seventeenth century or during the eighteenth century, as French colonists sought alliances with Cherokee towns against the English and native groups allied to English colonies. Alternatively, some Natchez are known to have moved from the Lower Mississippi Valley to the area of the historic Cherokee towns by the 1740s or 1750s (Swanton 1911:254–256). The Natchez and other native groups attacked French forts and settlements in 1729, and after retaliatory raids by the French in 1731, many Natchez went to live with the Chickasaws in northeastern Mississippi (Ethridge 2010; Johnson et al. 2008). The Natchez were eventually ejected by the Chickasaws, they went to live in Creek towns in Alabama and Georgia, but by 1742, they were living in Cherokee towns in the southern Appalachians, most likely in the upper Hiwassee Valley, in southwestern North Carolina (Swanton 1952:82). It is possible that the Natchez introduced calumet ceremonialism to Cherokee towns after these movements (Brett Riggs, personal communication 2011). On the other hand, the Cherokee did manage to acquire French trade goods and English goods from Virginia traders (Ramsey 2008:128), the Cherokee were less closely connected with Carolina traders than other native groups during the last decade

of the seventeenth century and the first decade of the eighteenth (Ramsey 2008:132), and the Cherokee were harassed by several native groups allied to the English, including the Westoes, Shawnees, Senecas, and Creeks. These points make it likely that Cherokee towns were connected to colonial trade networks emanating out of Mississippi and the Louisiane colony at an early date. Whether at 1700, or 1742, or some other date, the presence of a calumet pipe from Coweeta Creek is almost certainly evidence for calumet ceremonialism in Cherokee towns predating the events during which Henry Timberlake smoked peace pipes at the towns of Chota and Citico in eastern Tennessee in 1761, and it is almost certainly evidence for significant connections and cultural exchanges between the Cherokee and people—French, Natchez, or other—from the Mississippi River Valley.

Chaos Theory

Chaos theory offers a valuable interpretive framework with which to consider the presence of a calumet pipe in southwestern North Carolina and its significance to broader knowledge of calumet ceremonialism in southeastern North America (G. Williams 1997; S. Williams 1990; Smith 2007). In ancient Greece, the term “chaos” referred to the original darkness from which the universe was formed, and “cosmos,” the world as it is known to groups of people within it, was the opposite of “chaos.” From the perspective of chaos theory, the term “chaos” refers to the original conditions of a dynamic system in which patterns of change are unpredictable.

Archaeologists have applied chaos theory towards understanding responses by Ancestral Pueblo groups in southwestern North America to periods of environmental and social instability in the late prehistoric Southwest (Cordell 2000; Stone 1999), and to the effects of climatic changes on Iroquoian settlements and societies in the Northeast during the period just before European contact (Kapches 1995). Chaos theory is especially appropriate to the archaeological study of the protohistoric period in the Southeast—the period between early European contact in the 1500s and the development of more sustained trade networks and colonial entanglements in the 1700s (Brown 1979, 1985, 1992; Ethridge 2009a, 2009b, 2009c, 2010; Hally 2002, 2008, 2009b, 2009c; Greene 1999; Martin 1994; Smith and Smith 1989; Schroedl 2000, 2001; Silliman 2005; Hudson 2002; Wesson 2002, 2008; Wesson and Rees 2002)—for the following reasons.

First, as developed in mathematics, chaos theory is applicable towards analyses of nonlinear dynamic systems (Gleick 1988:42–43; Harvey and Reed 1996; Kiel and Elliott 1996; Rasband 1990:1–2). Applying this perspective to the social sciences, and to the study of behavioral and cultural systems, Elliott and Kiel (1996:1) write:

Nonlinear dynamics is the study of the temporal evolution of nonlinear systems. Nonlinear systems reveal dynamical behavior such that the relationships between variables are unstable. Furthermore, changes in these relationships are subject to positive feedback in which changes are amplified, breaking up existing structures and behavior and creating unexpected outcomes in the generation of new structure and behavior. These changes may result in new forms of equilibrium; novel forms of increasing complexity; or even temporal behavior that appears random and devoid of order, the state of “chaos” in which uncertainty dominates and predictability breaks down.

During the protohistoric period, there were dramatic changes to the Native American cultural landscapes and lifeways in the Southeast, and new forms of social and political organization were developed (Davis 2002; Drooker 2002; Ethridge 2010; Galloway 1994, 1995, 2002; Jeter 2002; Knight 1994; Milner et al. 2001; Smith 1987, 2000, 2002). Some chiefdoms endured early Spanish contact intact or even became more powerful and more entrenched in the aftermath of Spanish entradas (Beck 1997, 2009; Beck et al. 2010; Rodning et al. 2010; Worth 2002), whereas others collapsed (Smith 2000; Worth 2009). Some areas were largely abandoned after early Spanish contact, such as the Oconee Valley in Georgia (Williams and Shapiro 1996), and many areas of the Central Mississippi Valley (Morse and Morse 1983, 1990). There was no single outcome of early European contact in the Southeast. The outcomes of contact depended largely on local conditions, the relative status of chiefdoms in different provinces, and also on the routes taken by Spanish expeditions across the Southeast.

Second, from the perspective of chaos theory, changes in chaotic systems are not random, but, rather, they are highly sensitive to initial conditions, and slight variations in those initial conditions (Gleick 1988:21–24; Tritton 1993:24–30). Chaotic systems may appear random, but as Elliott and Kiel (1996:5) write:

Chaotic behavior is the behavioral regime in nonlinear systems of greatest interest.

Chaotic behavior, while occurring within defined mathematical parameters, appears random and without pattern over time. Chaotic behavior does not retrace previous points during its temporal evolution. This creates the appearance of randomness. Chaotic behavior, however, is not random behavior, since it can be generated with a completely

deterministic equation. This understanding is an essential foundation of knowledge for chaos researchers. Even deterministic systems can generate very erratic behavior over time. Moreover, as noted above, a chaotic system may appear more or less random depending on its complexity.

The experiences of Native American groups and responses to European contact varied across the Southeast, in part because of the routes traveled by sixteenth-century Spanish entradas, and in part because of the relative statuses of sixteenth-century Mississippian chiefdoms at the historical moments when native groups in the Southeast first encountered Spanish conquistadores and colonists. These conditions, which had developed largely in the absence of Europeans and colonial trade goods, shaped the responses by native groups to European colonial encounters, as long-term historical trends intersected with shorter-term events and developments (Hudson 2002). Although individual events, and the motivations of native and colonial groups alike may not have been well understood by those on the “other” side of these encounters, there was some cultural logic in all the trends and events of colonial history. Of course, the cultural system that developed in the aftermath of European colonialism in the Americas was far more complex, and far more globally interconnected, than either Europeans or Native Americans could have imagined before contact itself (Wolf 1997).

Third, developments in a chaotic system make sense from the perspective of an entire system, even if developments cannot be understood from looking at a single point or area within such a system. After contact, both Native American and European colonial groups in the Southeast became part of the newly developing world system, through which people and goods circulated across spatial and cultural domains that were unknown to native people and colonists

alike before contact. From the perspective of chaos theory, chaos is “persistent instability” (Percival 1993:12). Cultural and historical forces that maintained “persistent instability” in the Native American Southeast include the enslavement of Native Americans and the new practices of warfare that were developed during the 1500s and 1600s (Bossy 2009; Bowne 2000, 2005, 2006, 2009; Ethridge 1984, 2006, 2009a, 2009b, 2010; Gallay 2002, 2009; Martin 1994; Snyder 2010), the episodic introduction of gifts and trade goods into Native American networks of exchange and interaction (Gallivan 2003, 2004, 2007; Hantman 1990; Hudson 1976, 2005; Mallios 2004, 2006; Worth 2002), and climate change (Anderson 1994; Anderson et al. 1986, 1995; Blanton 2000, 2004; Stahle et al. 1998).

Fourth, from the perspective of chaos theory, changes in one part of a system can have major effects on conditions in different parts of or areas within a dynamic system, and small changes at one point in time can lead to more dramatic changes at a later point in time (Hall 1993; Percival 1993). This point is related to the sensitive dependence on initial conditions—and slight variations in those initial conditions—that is characteristic of chaotic systems. During the late 1500s and 1600s, Spanish trade goods circulated quite widely through aboriginal exchange networks in the Southeast, even though Spanish colonists themselves stuck closely to colonial settlements along the Gulf and Atlantic coasts (Waselkov 1989). Relatively soon after English colonists from South Carolina made direct contacts with Creek towns in Georgia and Chickasaw groups in Mississippi in the late seventeenth century, trade goods began flowing along trading paths and through trading posts connected to faraway Charles Town (Ethridge 2010; Johnson 1997; Johnson et al. 2008; Mason 1983, 2005). The establishment of an English trading post along the Ocmulgee River in Georgia in 1685 even prompted several native towns to move from the Chattahoochee River to the vicinity of this trading post (Waselkov 1994), although they

moved back to the Chattahoochee in 1715 in the midst of simmering conflicts with the South Carolina colony and the diminished flow of trade goods (Mason 2005). Changes in one part of the Southeast—the introduction of colonial trade goods, prolonged stays by colonial expeditions, or the establishment of colonial forts or settlements—could and did have effects that reverberated in other areas and across the Southeast as a whole. This principle is sometimes characterized as the “butterfly effect,” in which small changes in a system can have greater effects on the system as a whole at a later stage in the development of that system. Networks of trade and exchange connected Mississippian societies across the Southeast before European contact, but the nature of those regional and interregional interactions was altered by the differential presence of European colonial settlements and trade goods.

Fifth, chaos theory describes dynamic systems in which changes are deterministic but not predictable. European colonists were motivated by colonial agendas that made sense to them, and that made sense from the perspective of the long-term history of Europe and the Old World (Wolf 1997). Native North American groups responded to European contact and colonialism through cultural practices and perspectives that made sense from the perspective of long-term cultural history in the New World (Hudson 1997). For Native American and colonial groups alike, events and developments in the protohistoric Southeast may not have been comprehensible or predictable, and the rationale for specific actions by different groups may not have been easy to discern in some cases. While events and motivations may have seemed random, they were significantly shaped by initial conditions, that is, the cultural characteristics of those groups involved, and the landscape and environment of the Southeast at the moment of early contact.

Sixth, developments in chaotic systems are irreversible. Of course, time only moves in one direction, from the past through the present. Chaotic systems may move towards states of

equilibrium, but they never truly achieve equilibrium (Coveney 1993). One reason why equilibrium is never truly achieved in chaotic systems is that systems are rarely isolated, and new elements can be introduced from one system into another, as in the case of European colonists and colonial trade goods in the Southeast. Anthropologists have identified evidence for nativistic and revitalization movements in several areas of North America at different points in the past (Dumas and Waselkov 2010; Linton 1943; Waselkov and Dumas 2009, 2010)—including the Pueblo Revolt in the Southwest during the late 1600s (Liebmann 2008; Liebmann and Preucel 2007; Liebmann et al. 2005; Preucel 2002), the Seneca revitalization movement led by the prophet known as Handsome Lake (Wallace 1956, 1970), and the Ghost Dance and Warm House movements in the Plains and in Oregon during the late 1800s (Harkin 2004; Mooney 1896), for example—but none of these movements actually restored life to what it was before the periods of European contact and colonialism. They could not have. European contact and colonialism irreversibly altered the conditions and the cultural landscape in which Native American traditions had developed.

Although not guided by chaos theory, *per se*, several archaeologists and ethnohistorians have meaningfully characterized conditions of life in the Native American Southeast from the late 1500s through early 1700s as a “shatter zone” (Bowne 2009; Ethridge 1984, 2006, 2009a, 2009b, 2009c, 2010; Fox 2009; Galloway 2009; Jeter 2009; Kelton 2007, 2009; Marcoux 2010; Meyers 2009), and as a “chaotic landscape” (Riggs 2011), in which the “shock waves” created by events at specific points on the landscape emanated far and wide. These perspectives correctly emphasize the considerable instability created in the Southeast through the march of Spanish entradas across the Southeast during the 1500s, the changing fortunes of different chiefdoms and provinces visited by those expeditions, the development of the slave trade in the 1600s, and the

widespread participation of native and colonial groups in the deerskin trade from the late 1600s through the early-to-mid 1700s. These perspectives—including, especially, those articulated by Ethridge (2006, 2009a, 2009b, 2010) and Riggs (2011)—insightfully capture the unpredictability (at least from local perspectives) and instability of life in the protohistoric Native American Southeast. My consideration here of the applicability of chaos theory to the archaeology of the protohistoric Southeast is certainly not meant to replace these “shatter zone” and “chaotic landscape” models. Quite the opposite, chaos theory offers great potential for further study of the “shatter zone(s)” and “chaotic landscape(s)” that were present throughout the Americas in the aftermath of European contact.

The “chaotic landscape” model emphasizes the dramatic and sometimes unpredictable events and conflicts that greatly affected native groups across Southeast, including the 1713 raid by warriors from several Cherokee towns on the Yuchi town of Chestowee (Gallay 2002; Marcoux 2010; Ramsey 2008; Riggs 2011). One likely motivation for this raid seems to have been posed by Carolina traders, who offered to forgive the trade debts owed them by several Cherokee town leaders, if those Cherokees would lead attacks on Chestowee, and would then enslave all those who were captured (Corkran 1969:3). One or more of these Carolina traders may also have been motivated by the desire to seek revenge for an attack on him by Yuchi warriors. These motivations for warfare may not have made sense to Native American warriors and town leaders before European contact. Traditional approaches to warfare in the late prehistoric Southeast—the “initial conditions” that set the stage for the involvement of Native American warriors in the conflicts of the 1500s and 1600s—emphasized status relations between warriors, and the acquisition of war names and war honors (Cobb and Drake 2008; Cobb and Giles 2009; Dye 1995, 2002, 2006, 2009). Going to war to seek revenge, or to acquire war

honors and war trophies, or to force another group to pay tribute, would have made sense to warriors in Mississippian societies. Going to war to erase another town from the map, and to enslave everybody who was not killed, was not a practice that resembled Mississippian approaches to warfare, but one that became increasingly widespread in the Southeast during the late seventeenth century, including Westo and Iroquois raids on Cherokee towns (Bowne 2005), and Cherokee raids on other groups (Ethridge 2010).

The “shatter zone” model explicitly emphasizes the far-reaching “ripple effects” of historical events and developments, including those related to the new forms of violence and warfare that developed in the course of the seventeenth-century slave trade (Ethridge 2006, 2009a, 2009b). For example, the Westoes were a group driven out of northeastern North America by Iroquois slave raiding, and when armed with guns, the Westoes themselves became a militaristic slaving society (Bowne 2005). This group eventually settled in abandoned areas of the Savannah River Valley, they became allies of the Carolina colony, and they were one of several militaristic societies whose slave raids dramatically affected many groups throughout eastern North America (Bowne 2006). Cherokee towns first entered the written records of colonial South Carolina in 1674, when Henry Woodward visited the Westoes on the Savannah River and learned of Cherokee towns in the mountains who were considered enemies of the Westoes (Hatley 1993:17; Marcoux 2010:44). Woodward encouraged the Westoes to trade with South Carolina in deerskins and in slaves, including, presumably, any slaves that could be taken from Cherokee towns. When the Westo were displaced and replaced in 1682 by Shawnee warriors, who had moved from the Ohio Valley to the Savannah Valley in 1675 (Swanton 1952:99), and who were aided and abetted by the Carolina colony in eventually ousting the Westoes, the Shawnees began raiding Cherokee towns for slaves (Ethridge 2010:160–162).

Cherokee town leaders asked the government of South Carolina in 1693 to act to curb slave raids against them (Hatley 1993:33; Marcoux 2010:45). There are two aspects of the effects of Westo, Shawnee, and Iroquois raids on Cherokee towns that are especially amenable to consideration from the perspective of chaos theory. First, in and of itself, the settlement of Westo and Shawnee groups in the Savannah River Valley in the aftermath of Iroquois slave raids were local developments that may not have had much impact on Cherokee towns at the southern end of the Appalachians—from another perspective, these newcomers probably would not have posed any threat to Cherokee towns at all were it not for the colonial demand for slaves, the Iroquois raids on the settlements in the Northeast that were the source of the Westoes as a distinct group in the protohistoric Southeast, and access by Westoes and others to English firearms. Second, the Westoes and Shawnees could have launched attacks on Cherokee towns from greater distances, but the abandonment of large areas of the Savannah River Valley (many Cherokee towns were situated at and close to the headwaters of the Savannah River) during late prehistory (Anderson 1994; Anderson et al. 1986, 1995; Hally 1994) created openings for Westo and Shawnee settlement during the protohistoric period—the abandonment of those areas of the Savannah River Valley contributed to the “initial conditions” that were in place in the Southeast at the moment of European contact.

From the perspective of chaos theory, developments in chaotic systems are not random, even if they are unpredictable. While diplomatic events, cases of conflict and warfare, and cases of trade and exchange in the Southeast may have been imperfectly understood by participants in such events, they do make sense from the perspective of long-term trends (the focus of archaeology as an historical science), and also from the perspective of developments in European contact and colonialism throughout eastern North America. Historical developments in the

Northeast affected Native American towns in the Southeast, and practices of diplomacy and social interaction such as calumet ceremonialism in the Plains and the Mississippi River Valley spread even to faraway places like the Cherokee town at Coweeta Creek, in southwestern North Carolina, in the early eighteenth century.

Conclusions

As argued here, chaos theory is applicable to the archaeological study of Native American responses to European contact and colonialism, in general, and the study of calumet ceremonialism, in particular. The cultural landscape of the Southeast changed dramatically and irreversibly after European contact, and after the introduction of colonial trade goods to Native American networks of exchange and interaction. Native peoples and colonists alike attempted to make sense of the new groups they encountered from the perspective of European or Native American cosmology and history, neither of which could have accounted for the new world system that developed during the course of European exploration and colonialism. The “cosmos” that was in place in the Native American Southeast at the moment of European contact was replaced by the “chaos” of the new, New World. Calumet ceremonialism spread widely across the Plains and through the Mississippi River Valley in the late 1600s. It reached Cherokee towns in southwestern North Carolina, far from the sources of redstone and far from the points of origin of calumet ceremonialism, perhaps as early as the late seventeenth century or early 1700s.

Based on his study of the ethnohistory and archaeology of calumet ceremonialism and redstone pipes, Ian Brown (2006:402–403) concludes that Native American groups in the Southeast would have been interested in calumet ceremonialism as a means of forming alliances and restoring balance and stability in the midst of cultural upheavals and displacements after the beginning of European colonialism. Pipe smoking had a long history in Native North American societies, as did trade, diplomacy, and warfare. The potential for conflict, and the many actual cases of violent conflict in the Southeast during the 1500s and 1600s, meant that the survival and vitality of a native community was closely related to its ability to succeed in making war and making peace. The introduction of colonial trade goods created new demand for such goods, and new sources of competition within and between native groups for access to them (Hahn 2002, 2004; Waselkov 1992, 1993, 1994). For much of the 1500s and 1600s, European colonists and colonial trade goods were relatively scarce in the Southeast. These conditions—and the new forms of warfare that developed out of the new market for Native American slaves—led to considerable instability and unpredictability in the colonial South. Given these developments, it is not surprising, then, that calumet ceremonialism spread widely and rapidly through the Mississippi Valley, and east to the Cherokee town areas in the southern Appalachians, as evident from the presence of redstone pipes and pipe fragments at Coweeta Creek and other sites.

Calumet ceremonialism could have been transported by French traders themselves (Brown 1992), as they did make an effort to reach the southern Appalachians as early as the late seventeenth century (Goodwin 1977; Hatley 1993; Rothrock 1976), or it could have been transported through Native American networks of exchange and interaction. Spanish goods are known to have circulated quite widely during the late 1500s and early 1600s well past the reach of Spanish expeditions, encampments, and settlements (Smith 1987; Waselkov 1989). Those

same networks could have been conduits for the rapid spread of diplomatic practices and calumet ceremonialism from the Mississippi Valley to southwestern North Carolina during the late seventeenth century. The presence of those longstanding networks of exchange and interaction—part of the “initial conditions” of life in the Native American Southeast—significantly shaped Native American responses to European contact and colonialism. From the perspective of chaos theory, meanwhile, slight variations in the “dynamical system” of the colonial South—differences in the presence of Europeans and European trade goods across the Southeast—could (and did) have significant effects at other points within the system, including Cherokee towns in the southern Appalachians, which were located far from major colonial settlements, and relatively far away from the routes of sixteenth-century Spanish entradas and far from the locations of early eighteenth-century French settlements and forts.

While commenting on the culturally diverse origins of the Cherokee myths that he recorded in western North Carolina during the late nineteenth century, James Mooney (1900:234–235) referred to the considerable distances that both myths and redstone pipes could and did travel across different cultural provinces of Native North America.

Except as to the local traditions and a few others which are obviously the direct outgrowth of Cherokee conditions, it is impossible to fix a starting date for the myths. It would be unwise to assert that even the majority of them originated within the tribe. The Cherokee have strains of Creek, Catawba, [Yuchi], Natchez, Iroquois, Osage, and [Shawnee] blood, and such admixture implies contact more or less intimate and continued. Indians are great wanderers, and a myth can travel as far as a redstone pipe or a string of wampum.

From an archaeological perspective, redstone pipes are not particularly common at late prehistoric and historic Cherokee sites in the southern Appalachians, but they are present, and the presence of a redstone pipe bowl fragment at the Coweeta Creek site demonstrates the participation of native groups in southwestern North Carolina in calumet ceremonialism during the late 1600s or early 1700s, or at least before the mid-eighteenth-century episodes of calumet smoking in Overhill Cherokee towns that were recorded by Henry Timberlake. Participation in calumet ceremonialism connected Cherokee towns to Native American societies across the Southeast, Northeast, Midwest, and the Plains. If the redstone pipe fragment from Coweeta Creek is made of true catlinite, it may even connect this Cherokee town in North Carolina to the pipestone quarry in southwestern Minnesota. European contact and colonialism quickly and irreversibly connected Cherokee and other Native American towns in the Southeast to a new world system, one with a global spatial scale that was unknown and unimagined by Native Americans and European colonists before the 1500s. As evident from the spread of calumet ceremonialism to Cherokee towns in southwestern North Carolina and the southern Appalachians, European contact likewise led to connections between distant peoples and distant places within Native North America.

Acknowledgments. Thanks to Ian Brown, Vin Steponaitis, Bennie Keel, Robbie Ethridge, Greg Waselkov, David Moore, Maureen Meyers, Victor Thompson, David Anderson, Dennis Blanton, Marcello Canuto, Bryan Haley, Jayur Mehta, Jordan Krummel, Larry Powell, Shannon Dawdy, Tony Boudreaux, Jon Marcoux, Greg Wilson, Amber VanDerwarker, Bram Tucker, Hope Spencer, and Robert M. Hill II for guidance and encouragement, and thanks to Brett Riggs for sharing his idea that the Natchez may have been the ones to introduce calumet ceremonialism to

the Cherokee. Thanks to Steve Davis for his help with access to artifact catalogs and collections at UNC, and for his help in taking the artifact photos included in Figure 4. Thanks to Aline Magnoni and Clara Bezanilla for drafting the Spanish abstract. This paper is dedicated to Stephen Williams, in acknowledgement of his considerable help and guidance for the past 20 years. Professor Williams (1990:xvi–xvii) once encouraged archaeologists to look to chaos theory in studying the prehistory the Native American Southeast, and I remembered his interest in chaos theory—and my interactions with him as an undergraduate anthropology major—when I sat down to write this paper. Any problems with this article, of course, are my responsibility.

References Cited

Anderson, David, G.

1994 *The Savannah River Chiefdoms: Political Change in the Late Prehistoric Southeast*.
University of Alabama Press, Tuscaloosa.

Anderson, David, G., David J. Hally, and James L. Rudolph

1986 The Mississippian Occupation of the Savannah River Valley. *Southeastern Archaeology*
5:32–51.

Anderson, David G., Malcolm K. Cleaveland, and David W. Stahle

1995 Paleoclimate and the Potential Food Reserves of Mississippian Societies: A Case Study
from the Savannah River Valley. *American Antiquity* 60:258–286.

Baden, William W.

1983 *Tomotley: An Eighteenth-Century Cherokee Village*. University of Tennessee,
Department of Anthropology Report of Investigations 36, Knoxville.

Beck, Robin A., Jr.

1997 From Joara to Chiaha: Spanish Exploration of the Appalachian Summit Area, 1540–
1568. *Southeastern Archaeology* 16:162–169.

2009 Catawba Coalescence and the Shattering of the Carolina Piedmont, 1540–1675. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 115–141. University of Nebraska Press, Lincoln.

Beck, Robin A., Jr., David G. Moore, and Christopher B. Rodning

2006 Identifying Fort San Juan: A Sixteenth–Century Spanish Occupation at the Berry Site, North Carolina. *Southeastern Archaeology* 25:65–77.

2011 Resisting Resistance: Colonial Encounters and Local Politics in Native Carolina, 1566–1568. In *Enduring Conquests: Rethinking the Archaeology of Resistance to Spanish Colonialism in the Americas*, edited by Matthew Liebmann and Melissa Murphy. School of Advanced Research Press, Santa Fe, New Mexico, in press.

Blakeslee, Donald J.

1981 The Origin and Spread of the Calumet Ceremony. *American Antiquity* 46:759–768.

2005 Middle Ceramic Period Earthlodges as the Products of Craft Traditions. In *Plains Earthlodges: Ethnographic and Archaeological Perspectives*, edited by Donna C. Roper and Elizabeth P. Pauls, pp. 83–110. University of Alabama Press, Tuscaloosa.

Blanton, Dennis B.

2000 Drought as a Factor in the Jamestown Colony. *Historical Archaeology* 34(4):74–81.

2004 The Climate Factor in Late Prehistoric and Post–Contact Human Affairs. In *Indian and European Contact in Contact: The Mid–Atlantic Region*, edited by Dennis B. Blanton and Julia A. King, pp. 6–21. University Press of Florida, Gainesville.

Booker, Karen M., Charles M. Hudson, and Robert L. Rankin

1992 Place Name Identification and Multilingualism in the Sixteenth–Century Southeast. *Ethnohistory* 39:399–451.

Bossy, Denise I.

2009 Indian Slavery in Southeastern Indian and British Societies, 1670–1730. In *Indian Slavery in Colonial America*, edited by Alan Galloway, pp. 207–250. University of Nebraska Press, Lincoln.

Bowne, Eric

2000 The Rise and Fall of the Westo Indians: An Evaluation of the Documentary Evidence. *Early Georgia* 28(1):56–78.

2005 *The Westo Indians: Slave Traders of the Early Colonial South*. University of Alabama Press, Tuscaloosa.

2006 “A Bold and Warlike People”: The Basis of Westo Power. In *Light on the Path: The Anthropology and History of the Southeastern Indians*, edited by Thomas J. Pluckhahn and Robbie Ethridge, pp. 123–132. University of Alabama Press, Tuscaloosa.

2009 “Carying Away Their Corne and Children”: The Effects of Westo Slave Raids on the Indians of the Lower South. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 104–114. University of Nebraska Press, Lincoln.

Brown, Ian W.

1979 Functional Group Changes and Acculturation: A Case Study of the French and the Indian in the Lower Mississippi Valley. *Midcontinental Journal of Archaeology* 4(2):147–165.

1982 An Archaeological Study of Culture Contact and Change in the Natchez Bluffs Region. In *La Salle and His Legacy: Frenchmen and Indians in the Lower Mississippi Valley*, edited by Patricia K. Galloway, pp. 176–193. University Press of Mississippi, Jackson.

1985 *Natchez Indian Archaeology: Culture Change and Stability in the Lower Mississippi Valley*. Mississippi Department of Archives and History, Archaeological Report 15, Jackson.

1989 The Calumet Ceremony in the Southeast as Observed Archaeologically. *American Antiquity* 54:311–331.

1990 Historic Indians of the Lower Mississippi Valley: An Archaeologist’s View. In *Towns and Temples Along the Mississippi*, edited by David H. Dye and Cheryl Anne Cox, pp. 176–198. University of Alabama Press, Tuscaloosa.

- 1992 Certain Aspects of French–Indian Interaction in Lower Louisiane. In *Calumet and Fleur-de-Lys: Archaeology of Indian and French Contact in the Midcontinent*, edited by John A. Walthall and Thomas E. Emerson, pp. 17–34. Smithsonian Institution Press, Washington, DC.
- 1998 The Eighteenth–Century Natchez Chiefdom. In *The Natchez District in the Old, Old South*, edited by Vincas P. Steponaitis, pp. 49–66. University of North Carolina, Center for the Study of the American South, Research Report 11, Chapel Hill.
- 2006 The Calumet Ceremony in the Southeast as Observed Archaeologically. In *Powhatan's Mantle: Indians in the Colonial Southeast (Revised and Expanded Version)*, edited by Gregory A. Waselkov, Peter H. Wood, and Tom Hatley, pp. 371–419. University of Nebraska Press, Lincoln.

Brown, James A.

- 1990 Archaeology Confronts History at the Natchez Temple. *Southeastern Archaeology* 9:1–10.

Chapman, Jefferson

- 1985 *Tellico Archaeology: Twelve Thousand Years of Tennessee Prehistory*. University of Tennessee Press, Knoxville.

Cobb, Charles R., and Eric C. Drake

2008 The Colour of Time—Head Pots and Temporal Convergences. *Cambridge Archaeological Journal* 18:85–93.

Cobb, Charles R., and Bretton Giles

2009 War is Shell: The Ideology and Embodiment of Mississippian Conflict. In *Warfare in Cultural Context: Practice, Agency, and the Archaeology of Violence*, edited by Axel E. Nielsen and William H. Walker, pp. 109–135. University of Arizona Press, Tucson.

Cordell, Linda

2000 Aftermath of Chaos in the Pueblo Southwest. In *Environmental Disaster and the Archaeology of Human Response*, edited by Garth Bawden and Richard M. Reycraft, pp. 179–193. University of New Mexico, Maxwell Museum of Anthropology, Anthropological Papers 7, Albuquerque.

Coveney, Peter

1993 Chaos, Entropy and the Arrow of Time. In *Exploring Chaos: A Guide to the New Science of Disorder*, edited by Nina Hall, pp. 203–212. W. W. Norton, New York.

Crane, Verner W.

2004 *The Southern Frontier, 1670–1732 (1929)*. University of Alabama Press, Tuscaloosa.

Davis, R. P. Stephen, Jr.

2002 The Cultural Landscape of the North Carolina Piedmont at Contact. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 135–154. University Press of Mississippi, Jackson.

Dickens, Roy S., Jr.

1976 *Cherokee Prehistory: The Pisgah Phase in the Appalachian Summit*. University of Tennessee Press, Knoxville.

1978 Mississippian Settlement Patterns in the Appalachian Summit Area: The Pisgah and Qualla Phases. In *Mississippian Settlement Patterns*, edited by Bruce D. Smith, pp. 115–139. Academic Press, New York, NY.

1979 The Origins and Development of Cherokee Culture. In *The Cherokee Indian Nation: A Troubled History*, edited by Duane H. King, pp. 3–32. University of Tennessee Press, Knoxville.

Drooker, Penelope B.

1997 *The View from Madisonville: Protohistoric Western Fort Ancient Interaction Patterns*. University of Michigan, *Memoirs of the Museum of Anthropology* 31, Ann Arbor.

2002 The Ohio Valley, 1550–1750: Patterns of Sociopolitical Coalescence and Dispersal. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 115–133. University Press of Mississippi, Jackson.

Dumas, Ashley A., and Gregory A. Waselkov

- 2010 Protohistoric Pan–Southeastern Revitalization: Rethinking Material Culture. Paper presented at the 67th Annual Meeting of the Southeastern Archaeological Conference, Lexington, Kentucky.

Duncan, Barbara R., and Brett H. Riggs

- 2003 *Cherokee Heritage Trails*. University of North Carolina Press, Chapel Hill.

Dye, David H.

- 1990 Warfare in the Sixteenth–Century Southeast: The de Soto Expedition in the Interior. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands East, Volume 2*, edited by David Hurst Thomas, pp. 211–222. Smithsonian Institution Press, Washington, DC.
- 1994 The Art of War in the Sixteenth–Century Central Mississippi Valley. In *Perspectives on the Southeast: Linguistics, Archaeology, and Ethnohistory*, edited by Patricia B. Kwachka, pp. 44–60. University of Georgia Press, Athens.
- 1995 Feasting with the Enemy: Mississippian Warfare and Prestige–Goods Circulation. In *Native American Interactions: Multiscalar Analyses and Interpretations in the Eastern Woodlands*, edited by Michael S. Nassaney and Kenneth E. Sassaman, pp. 289–316. University of Tennessee Press, Knoxville.

- 2002 Warfare in the Protohistoric Southeast: 1500–1700. In *Between Contact and Colonies: Archaeological Perspectives on the Protohistoric Southeast*, edited by Cameron B. Wesson and Mark A. Rees, pp. 126–141. University of Alabama Press, Tuscaloosa.
- 2006 The Transformation of Mississippian Warfare: Four Case Studies from the Mid–South. In *The Archaeology of Warfare: Prehistories of Raiding and Conquest*, edited by Elizabeth N. Arkush and Mark N. Allen, pp. 101–147. University Press of Florida, Gainesville.
- 2009 *War Paths, Peace Paths: An Archaeology of Cooperation and Conflict in Native Eastern North America*. AltaMira Press, Walnut Creek, CA.
- Elliott, Euel, and L. Douglas Kiel
- 1996 Introduction. In *Chaos Theory in the Social Sciences: Foundations and Applications*, edited by L. Douglas Kiel and Euel Elliott, pp. 1–15. University of Michigan Press, Ann Arbor.
- Ethridge, Robbie
- 1984 Flintlocks and Slavecatchers: Economic Transformations of the Georgia Indians. *Early Georgia* 10:13–26.
- 2006 Creating the Shatter Zone: Indian Slave Traders and the Collapse of the Southeastern Chiefdoms. In *Light on the Path: The Anthropology and History of the Southeastern*

- Indians*, edited by Thomas J. Pluckhahn and Robbie Ethridge, pp. 207–218. University of Alabama Press, Tuscaloosa.
- 2009a The Making of a Militaristic Slaving Society: The Chickasaws and the Colonial Indian Slave Trade. In *Indian Slavery in Colonial America*, edited by Alan Galloway, pp. 251–276. University of Nebraska Press, Lincoln.
- 2009b Introduction: Mapping the Mississippian Shatter Zone. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 1–62. University of Nebraska Press, Lincoln.
- 2009c Afterword: Some Thoughts on Further Work. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 418–424. University of Nebraska Press, Lincoln.
- 2010 *From Chicaza to Chickasaw: The European Invasion and the Transformation of the Mississippian World, 1540–1715*. University of North Carolina Press, Chapel Hill.
- Ewers, John C. (editor)
- 1979 *Indian Art in Pipestone*. Smithsonian Institution Press, Washington, D.C.

Fenton, William N.

1953 *The Iroquois Eagle Dance: An Offshoot of the Calumet Dance*. Bureau of American Ethnology Bulletin 156, Smithsonian Institution, Washington, DC.

Fox, William A.

2009 Events as Seen from the North: The Iroquois and Colonial Slavery. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 63–80. University of Nebraska Press, Lincoln.

Fundaburk, Emma Lila, and Mary Douglass Foreman (editors)

1957 *Sun Circles and Human Hands: The Southeastern Indians—Art and Industry*. Published by Emma Lila Fundaburk, Luverne, Alabama.

Gallay, Alan

2002 *The Indian Slave Trade: The Rise of the English Empire in the American South, 1670–1717*. Yale University Press, New Haven, CT.

2009 Introduction: Indian Slavery in Historical Context. In *Indian Slavery in Colonial America*, edited by Alan Gallay, pp. 1–32. University of Nebraska Press, Lincoln.

Gallivan, Martin D.

- 2003 *James River Chiefdoms: The Rise of Social Inequality in the Chesapeake*. University of Nebraska Press, Lincoln.
- 2004 Reconnecting the Contact Period and Late Prehistory: Household and Community Dynamics in the James River Basin. In *Indian and European Contact in Contact: The Mid-Atlantic Region*, edited by Dennis B. Blanton and Julia A. King, pp. 22–46. University Press of Florida, Gainesville.
- 2007 Powhatan's Werowocomoco: Constructing Place, Polity, and Personhood in the Chesapeake, C.E. 1200–C.E. 1609. *American Anthropologist* 109:85–100.

Galloway, Patricia

- 1994 Confederacy as a Solution to Chiefdom Dissolution: Historic Evidence in the Choctaw Case. In *The Forgotten Centuries: Indians and Europeans in the American South, 1521–1704*, edited by Charles Hudson and Carmen Chaves Tesser, pp. 393–420. University of Georgia Press, Athens.
- 1995 *Choctaw Genesis, 1500–1700*. University of Nebraska Press, Lincoln.
- 2002 Colonial Period Transformations in the Mississippi Valley: Disintegration, Alliance, Confederation, Playoff. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 225–248. University Press of Mississippi, Jackson.

2009 Choctaws at the Border of the Shatter Zone: Spheres of Exchange and Spheres of Social Value. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 365–387. University of Nebraska Press, Lincoln.

Gearing, Frederick O.

1958 *The Structural Poses of Eighteenth Century Cherokee Villages*. *American Anthropologist* 60:1148–1157.

1962 *Priests and Warriors: Structures for Cherokee Politics in the Eighteenth Century*. American Anthropological Association Memoir 93, Washington, D.C.

Gilbert, William H., Jr.

1937 Eastern Cherokee Social Organization. In *Social Anthropology of the North American Tribes*, edited by Fred Eggan, pp. 285–338. University of Chicago Press, Chicago.

1943 *The Eastern Cherokees*. Smithsonian Institution, Bureau of American Ethnology Bulletin 133:169–413, Washington, D.C.

Gleick, James

1988 *Chaos: Making a New Science*. Penguin, New York, NY.

Goodwin, Gary C.

1977 *Cherokees in Transition: A Study of Changing Culture and Environment Prior to 1775.*

University of Chicago, Department of Geography Research Paper 181, Chicago.

Greene, Lance K.

1999 *The Archaeology and History of the Cherokee Out Towns.* South Carolina Institute of

Archaeology and Anthropology, Volumes in Historical Archaeology 40, Columbia.

Gundersen, James N.

1987 Wisconsin Pipestone: A Preliminary Mineralogical Examination. *Wisconsin*

Archaeologist 68:1–21.

1993 “Catlinite” and the Spread of the Calumet Ceremony. *American Antiquity* 58:560–562.

Gunderson, James N., and Joseph A. Tiffany

1986 Nature and Provenance of Red Pipestone from the Wittrock Site, Northwest Iowa. *North*

American Archaeologist 7:45–67.

Gundersen, James N., Gregory A. Waselkov, and Lillian J. K. Pollock

2002 Pipestone Argillite Artifacts from Old Mobile and Environs. *Historical Archaeology*

36:105–116.

Hahn, Steven C.

2002 The Mother of Necessity: Carolina, the Creek Indians, and the Making of a New Order in the American Southeast, 1670–1763. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 79–114. University Press of Mississippi, Jackson.

2004 *Invention of the Creek Nation, 1670–1763*. University of Nebraska Press, Lincoln.

Hall, Nina

1993 Introduction. In *Exploring Chaos: A Guide to the New Science of Disorder*, edited by Nina Hall, pp. 7–11. W. W. Norton, New York, NY.

Hall, Robert L.

1979 An Anthropocentric Perspective for Eastern United States Prehistory. *American Antiquity* 42:499–518.

1983 The Evolution of the Calumet–Pipe. In *Prairie Archaeology: Papers in Honor of David A. Barreis*, edited by Guy E. Gibbon, pp. 37–52. University of Minnesota, Publications in Anthropology 3, Minneapolis.

1987 Calumet Ceremonialism, Mourning Ritual, and Mechanisms of Inter–Tribal Trade. In *Mirror and Metaphor: Material and Social Construction of Reality*, edited by Daniel W. Ingersoll, Jr., and Gordon Bronitsky, pp. 31–42. University Press of America, Lanham, Maryland.

1997 *An Archaeology of the Soul: North American Indian Belief and Ritual*. University of Illinois Press, Urbana.

Hally, David J.

2002 “As Caves Beneath the Ground”: Making Sense of Aboriginal House Form in the Protohistoric and Historic Southeast. In *Between Contact and Colonies: Archaeological Perspectives on the Protohistoric Southeast*, edited by Cameron B. Wesson and Mark A. Rees, pp. 90–109. University of Alabama Press, Tuscaloosa.

2008 *King: The Social Archaeology of a Late Mississippian Town in Northwestern Georgia*. University of Alabama Press, Tuscaloosa.

Hantman, Jeffrey L.

1990 Between Powhatan and Quirank: Reconstructing the Monacan Culture and History in the Context of Jamestown. *American Anthropologist* 92:676–690.

Harkin, Michael

2004 Revitalization as Catharsis: The Warm House Cult of Western Oregon. In *Reassessing Revitalization Movements: Perspectives from North America and the Pacific Islands*, edited by Michael E. Harkin, pp. 144–161. University of Nebraska Press, Lincoln.

Harvey, David L., and Michael Reed

1996 Social Science as the Study of Complex Systems. In *Chaos Theory in the Social Sciences: Foundations and Applications*, edited by L. Douglas Kiel and Euel Elliott, pp. 295–323. University of Michigan Press, Ann Arbor.

Hatley, M. Thomas

1993 *The Dividing Paths: The Cherokees and South Carolinians Through the Revolutionary Era*. Oxford University Press, Oxford, UK.

Heye, George G., Fredrick W. Hodge, and George H. Pepper

1918 *The Nacoochee Mound in Georgia*. Contributions from the Museum of the American Indian 4(3).

Hill, Sarah H.

1997 *Weaving New Worlds: Southeastern Cherokee Women and Their Basketry*. University of North Carolina Press, Chapel Hill.

Hudson, Charles

1976 *The Southeastern Indians*. University of Tennessee Press, Knoxville.

1997 *Knights of Spain, Warriors of the Sun: Hernando de Soto and the South's Ancient Chiefdoms*. University of Georgia Press, Athens.

2002 Introduction. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. xi–xxxix. University Press of Mississippi, Jackson.

2005 *The Juan Pardo Expeditions: Exploration of the Carolinas and Tennessee, 1566–1568 (Revised Edition with New Index)*. University of Alabama Press, Tuscaloosa.

Jeter, Marvin D.

2002 From Prehistory Through Protohistory to Ethnohistory in and Near the Northern Lower Mississippi Valley. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 177–223. University Press of Mississippi, Jackson.

2009 Shatter Zone Shock Waves along the Lower Mississippi Valley. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 365–387. University of Nebraska Press, Lincoln.

Johnson, Jay K.

1997 Stone Tools, Politics, and the Eighteenth–Century Chickasaw in Northeast Mississippi. *American Antiquity* 62:215–230.

Johnson, Jay K., John W. O'Hear, Robbie Ethridge, Brad R. Lieb, Susan L. Scott, and H. Edwin Jackson

2008 Measuring Chickasaw Adaptation on the Western Frontier of the Colonial South: A Correlation of Documentary and Archaeological Data. *Southeastern Archaeology* 27:1–30.

Jolly, Fletcher III

1973 A Catlinite Disk Pipe and Associated Vessels from Lowland Eastern Arkansas. *Arkansas Archeologist* 14:1–12.

Kapches, Mima

1995 Chaos Theory and Social Movements: A Theoretical View of the Northern Iroquoian Cultural Pattern. In *Origins of the People of the Longhouse*, edited by André Bekerman and Gary D. Warrick, pp. 86–96. Proceedings of the Ontario Archaeological Society 21, Toronto.

Keel, Bennie C.

1976 *Cherokee Archaeology: A Study of the Appalachian Summit*. University of Tennessee Press, Knoxville.

Keel, Bennie C., Brian J. Egloff, and Keith T. Egloff

2002 The Coweeta Creek Mound and the Cherokee Project. *Southeastern Archaeology* 21:49–53.

Kelton, Paul

2007 *Epidemics and Enslavement: Biological Catastrophe in the Native Southeast, 1492–1715*.

University of Nebraska Press, Lincoln.

2009 Shattered and Infected: Epidemics and the Origins of the Yamasee War, 1696–1715. In

Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional

Instability in the American South, edited by Robbie Ethridge and Sheri M. Shuck–Hall,

pp. 312–332. University of Nebraska Press, Lincoln.

Kent, Barry C.

1984 *Susquehanna's Indians*. Pennsylvania Historical and Museum Commission,

Anthropological Series 6, Philadelphia.

Kiel, L. Douglas, and Euel Elliott

1996 Exploring Nonlinear Dynamics with a Spreadsheet: A Graphical View of Chaos for

Beginners. In *Chaos Theory in the Social Sciences: Foundations and Applications*,

edited by L. Douglas Kiel and Euel Elliott, pp. 19–29. University of Michigan Press,

Ann Arbor.

King, Duane H. (editor)

2007 *The Memoirs of Lieutenant Henry Timberlake: The Story of a Soldier, Adventurer, and Emissary to the Cherokees, 1756–1765*. Museum of the Cherokee Indian Press, Cherokee, North Carolina.

King, J. C. H.

1977 *Smoking Pipes of the North American Indian*. British Museum Publications, London.

Knight, Vernon J., Jr.

1994 The Formation of the Creeks. In *The Forgotten Centuries: Indians and Europeans in the American South, 1521–1704*, edited by Charles Hudson and Carmen Chaves Tesser, pp. 373–392. University of Georgia Press, Athens.

Lankford, George E. (editor)

1987 *Native American Legends: Southeastern Legends—Tales from the Natchez, Caddo, Biloxi, Chickasaw, and Other Nations*. August House, Little Rock, Arkansas.

Levy, Janet E., J. Alan May, and David G. Moore

1990 From Ysa to Joara: Cultural Diversity in the Catawba Valley from the Fourteenth to the Sixteenth Century. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands East, Volume 2*, edited by David Hurst Thomas, pp. 153–168. Smithsonian Institution Press, Washington, DC.

Lewis, Thomas M. N., and Madeline D. Kneberg

1946 *Hiwassee Island: An Archaeological Account of Four Tennessee Indian Peoples.*
University of Tennessee Press, Knoxville.

Lewis, Thomas M. N., Madeline D. Kneberg Lewis, and Lynne P. Sullivan (editors)

1995 *The Prehistory of the Chickamauga Basin.* University of Tennessee Press, Knoxville.

Liebmann, Matthew

2008 The Innovative Materiality of Revitalization Movements: Lessons from the Pueblo Revolt of 1680. *American Anthropologist* 110:360–372.

Liebmann, Matthew, and Robert W. Preucel

2007 The Archaeology of the Pueblo Revolt and the Formation of the Modern Pueblo World. *Kiva* 73:195–217.

Liebmann, Matthew, T. J. Ferguson, and Robert W. Preucel

2005 Pueblo Settlement, Architecture, and Social Change in the Pueblo Revolt Era, A.D. 1680–1696. *Journal of Field Archaeology* 30:45–60.

Linton, Ralph

1943 Nativistic Movements. *American Anthropologist* 45:230–240.

Lorenz, Karl G.

2000 The Natchez of Southwest Mississippi. In *Indians of the Greater Southeast: Historical Archaeology and Ethnohistory*, edited by Bonnie G. McEwan, pp. 142–177. University of Alabama Press, Tuscaloosa.

Mallios, Seth

2004 Exchange and Violence at Ajacan, Roanoke, and Jamestown. In *Indian and European Contact in Contact: The Mid-Atlantic Region*, edited by Dennis B. Blanton and Julia A. King, pp. 126–148. University Press of Florida, Gainesville.

2006 *The Deadly Politics of Giving: Exchange and Violence at Ajacan, Roanoke, and Jamestown*. University of Alabama Press, Tuscaloosa.

Marcoux, Jon Bernard

2010 *Pox, Empire, Shackles, and Hides: The Townsend Site, 1670–1715*. University of Alabama Press, Tuscaloosa.

Marrinan, Rochelle A., John F. Scarry, and Rhonda L. Majors

1990 Prelude to de Soto: The Expedition of Pánfilo de Narváez. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands East, Volume 2*, edited by David Hurst Thomas, pp. 71–82. Smithsonian Institution Press, Washington, DC.

Martin, Joel W.

1994 Southeastern Indians and the English Trade in Skins and Slaves. In *The Forgotten Centuries: Indians and Europeans in the American South, 1521–1704*, edited by Charles Hudson and Carmen Chaves Tesser, pp. 304–324. University of Georgia Press, Athens.

Mason, Carol Irwin

1983 Eighteenth Century Culture Change Among the Lower Creeks. *Florida Anthropologist* 16:65–80.

2005 *The Archaeology of Ocmulgee Old Fields, Macon, Georgia*. University of Alabama Press, Tuscaloosa.

McWilliams, Richebourg Gaillard (editor)

1988 *Fleur de Lys and Calumet: Being the Pénicaut Narrative of French Adventure in Louisiana (1953)*. University of Alabama Press, Tuscaloosa.

1991 *Iberville's Gulf Journals (1981)*. University of Alabama Press, Tuscaloosa.

Merrell, James H.

1987 “Their Very Bones Shall Fight”: The Catawba–Iroquois Wars. In *Beyond the Covenant Chain: The Iroquois and Their Neighbors in Indian North America, 1600–1800*, edited by Daniel K. Richter and James H. Merrell, pp. 115–133. Syracuse University Press, Syracuse, New York.

- 1989 *The Indians' New World: Catawbas and Their Neighbors from European Contact Through the Era of Removal*. University of North Carolina Press, Chapel Hill.
- 2006 "Our Bond of Peace": Patterns of Intercultural Exchange in the Carolina Piedmont, 1650–1750. In *Powhatan's Mantle: Indians in the Colonial Southeast (Revised and Expanded Edition)*, edited by Gregory A. Waselkov, Peter H. Wood, and Tom Hatley, pp. 267–304. University of Nebraska Press, Lincoln.

Meyers, Maureen

- 2009 From Refugees to Slave Traders: The Transformation of the Westo Indians. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 81–103. University of Nebraska Press, Lincoln.

Milanich, Jerald T.

- 1990 The European Entrada into La Florida: An Overview. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands East, Volume 2*, edited by David Hurst Thomas, pp. 3–29. Smithsonian Institution Press, Washington, DC.

Milner, George R., David G. Anderson, and Marvin T. Smith

- 2001 The Distribution of Eastern Woodlands Peoples at the Prehistoric and Historic Interface. In *Societies in Eclipse: Archaeology of the Eastern Woodland Indians, A.D. 1400–1700*,

edited by David S. Brose, C. Wesley Cowan, and Robert C. Mainfort, Jr., pp. 9–18.
Smithsonian Institution Press, Washington, DC.

Mooney, James

1891 *The Sacred Formulas of the Cherokees*. Smithsonian Institution, Bureau of American Ethnology Annual Report 7:301–397, Washington, D.C.

1896 *The Ghost–Dance Religion and the Sioux Outbreak of 1890*. Fourteenth Annual Report of the Bureau of American Ethnology, pp. 653–1136, Smithsonian Institution, Washington, DC.

1900 *Myths of the Cherokee*. Nineteenth Annual Report of the Bureau of American Ethnology, pp. 3–576, Smithsonian Institution, Washington, DC.

Moore, David G.

2002 *Catawba Valley Mississippian: Ceramics, Chronology, and Catawba Indians*. University of Alabama Press, Tuscaloosa.

Moore, David G., Robin A. Beck, Jr., and Christopher B. Rodning

2005 Afterword. In *The Juan Pardo Expeditions: Exploration of the Carolinas and Tennessee, 1566–1568 (Revised Edition with New Index)*, by Charles Hudson, pp. 343–349.
University of Alabama Press, Tuscaloosa.

Morse, Dan F., and Phyllis A. Morse

1983 *Archaeology of the Central Mississippi Valley*. Academic Press, New York, NY.

1990 The Spanish Exploration of Arkansas. In *Columbian Consequences: Archaeological and Historical Perspectives on the Spanish Borderlands East, Volume 2*, edited by David Hurst Thomas, pp. 197–210. Smithsonian Institution Press, Washington, DC.

Neitzel, Robert S.

1965 *Archaeology of the Fatherland Site: The Grand Village of the Natchez*. Anthropological Papers of the American Museum of Natural History 51, New York, NY.

1983 *The Grand Village of the Natchez Revisited: Excavations at the Fatherland Site, Adams County, Mississippi, 1972*. Mississippi Department of Archives and History, Archaeological Report 12, Jackson.

Oatis, Stephen J.

2004 *A Colonial Complex: South Carolina's Frontiers in the Era of the Yamassee War, 1680–1730*. University of Nebraska Press, Lincoln.

Paper, Jordan

1988 *Offering Smoke: The Sacred Pipe and Native American Religion*. University of Idaho Press, Moscow.

Percival, Ian

- 1993 Chaos: A Science for the Real World. In *Exploring Chaos: A Guide to the New Science of Disorder*, edited by Nina Hall, pp. 11–21. W. W. Norton, New York.

Perdue, Theda

- 1987 Cherokee Relations with the Iroquois in the Eighteenth Century. In *Beyond the Covenant Chain: The Iroquois and Their Neighbors in Indian North America, 1600–1800*, edited by Daniel K. Richter and James H. Merrell, pp. 135–149. Syracuse University Press, Syracuse, New York.

- 1998 *Cherokee Women: Gender and Culture Change, 1700–1835*. University of Nebraska Press, Lincoln.

Persico, V. Richard, Jr.

- 1979 Early Nineteenth-Century Cherokee Political Organization. In *The Cherokee Indian Nation: A Troubled History*, edited by Duane H. King, pp. 92–109. University of Tennessee Press, Knoxville.

Polhemus, Richard R. (editor)

- 1987 *The Toqua Site: A Late Mississippian Dallas Phase Town*. Report of Investigations 41, Department of Anthropology, University of Tennessee, Knoxville.

Power, Susan C.

2004 *Early Art of the Southeastern Indians: Feathered Serpents and Winged Beings*.
University of Georgia Press, Athens.

2007 *Art of the Cherokee: Prehistory to the Present*. University of Georgia Press, Athens.

Preucel, Robert W. (editor)

2002 *Archaeologies of the Pueblo Revolt: Identity, Meaning, and Renewal in the Pueblo World*. University of New Mexico Press, Albuquerque.

Ramsey, William L.

2008 *The Yamassee War: A Study of Culture, Economy, and Conflict in the Colonial South*.
University of Nebraska Press, Lincoln.

Rasband, S. Neil

1990 *Chaotic Dynamics of Nonlinear Systems*. Wiley, New York, NY.

Richter, Daniel K.

1987 Ordeals of the Longhouse: The Five Nations in Early American History. In *Beyond the Covenant Chain: The Iroquois and Their Neighbors in Indian North America, 1600–1800*, edited by Daniel K. Richter and James H. Merrell, pp. 11–27. Syracuse University Press, Syracuse, New York.

1992 *The Ordeal of the Longhouse: The Peoples of the Iroquois League in the Era of European Colonization*. University of North Carolina Press, Chapel Hill.

Riggs, Brett H.

2011 Chestowee Reconsidered. In “*One of the Other Nations*”: *Yuchi Indian Histories Before the Removal Era*, edited by Jason B. Jackson. University of Nebraska Press, Lincoln.

Riggs, Brett H., and Christopher B. Rodning

2002 Cherokee Ceramic Traditions in Southwestern North Carolina, ca. A.D. 1400–2002: A Preface to “The Last of the Iroquois Potters.” *North Carolina Archaeology* 51:34–54.

Rodning, Christopher B.

2001a Mortuary Ritual and Gender Ideology in Protohistoric Southwestern North Carolina. In *Archaeological Studies of Gender in the Southeastern United States*, edited by Jane M. Eastman and Christopher B. Rodning, pp. 77–100. University Press of Florida, Gainesville.

2001b Architecture and Landscape in Late Prehistoric and Protohistoric Western North Carolina. In *Archaeology of the Appalachian Highlands*, edited by Lynne P. Sullivan and Susan C. Prezzano, pp. 238–249. University of Tennessee Press, Knoxville.

2002a The Townhouse at Coweeta Creek. *Southeastern Archaeology* 21:10–20.

- 2002b Reconstructing the Coalescence of Cherokee Communities in Southern Appalachia. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 155–175. University Press of Mississippi, Jackson.
- 2002c William Bartram and the Archaeology of the Appalachian Summit. In *Between Contacts and Colonies: Protohistory and Archaeology in the Southeastern United States*, edited by Cameron B. Wesson and Mark A. Rees, pp. 67–89. University of Alabama Press, Tuscaloosa.
- 2007 Building and Rebuilding Cherokee Houses and Townhouses in Southwestern North Carolina. In *The Durable House: House Society Models in Archaeology*, edited by Robin A. Beck, Jr., pp. 464–484. Occasional Paper 35, Southern Illinois University, Center for Archaeological Investigations, Carbondale.
- 2008 Temporal Variation in Qualla Pottery at Coweeta Creek. *North Carolina Archaeology* 57:1–49.
- 2009a Mounds, Myths, and Cherokee Townhouses in Southwestern North Carolina. *American Antiquity* 74:627–663.
- 2009b Domestic Houses at Coweeta Creek. *Southeastern Archaeology* 28:1–26.
- 2010a Architectural Symbolism and Cherokee Townhouses. *Southeastern Archaeology* 29:59–79.

2010b European Trade Goods at Cherokee Settlements in Southwestern North Carolina. *North Carolina Archaeology* 59:1–84.

2011 Mortuary Practices, Gender Ideology, and the Cherokee Town at the Coweeta Creek Site. *Journal of Anthropological Archaeology* 30:145–173.

Rodning, Christopher B., and David G. Moore

2010 Mortuary Practices in Late Prehistoric and Protohistoric Southwestern North Carolina. *Southeastern Archaeology* 29:80–100.

Rodning, Christopher B., and Amber M. VanDerwarker

2002 Revisiting Coweeta Creek: Reconstructing Ancient Cherokee Lifeways in Southwestern North Carolina. *Southeastern Archaeology* 21:1–9.

Rodning, Christopher B., Robin A. Beck, Jr., and David G. Moore

2010 Conflict, Violence, and Warfare in La Florida. In *Native and Imperial Transformations: Sixteenth–Century Entradas in the American Southwest and Southeast*, edited by Clay Mathers, Jeffrey M. Mitchem, and Charles M. Haecker. University of Arizona Press, Tucson, under review.

Roper, Donna C., and Elizabeth P. Pauls

2005 A Note on Plains Village Taxonomy and Chronology. In *Plains Earthlodges: Ethnographic and Archaeological Perspectives*, edited by Donna C. Roper and Elizabeth P. Pauls, pp. xvii–xviii. University of Alabama Press, Tuscaloosa.

Rothrock, Mary U.

1976 Carolina Traders Among the Overhill Cherokees, 1690–1760. *Tennessee Archaeologist* 32:21–29.

Russ, Kurt C., and Jefferson Chapman

1983 *Archaeological Investigations of the Eighteenth-Century Overhill Cherokee Town of Mialoquo*. Report of Investigations 37, Department of Anthropology, University of Tennessee, Knoxville.

Schroedl, Gerald F.

2000 Cherokee Ethnohistory and Archaeology from 1540 to 1838. In *Indians of the Greater Southeast: Historical Archaeology and Ethnohistory*, edited by Bonnie G. McEwan, pp. 204–241. University Press of Florida, Gainesville.

2001 Cherokee Archaeology Since the 1970s. In *Archaeology of the Appalachian Highlands*, edited by Lynne P. Sullivan and Susan C. Prezzano, pp. 278–297. University of Tennessee Press, Knoxville.

Schroedl, Gerald F. (editor)

1986 *Overhill Cherokee Archaeology at Chota–Tanasee*. Report of Investigations 42, Department of Anthropology, University of Tennessee, Knoxville.

Silliman, Stephen W.

2005 Culture Contact or Colonialism? Challenges in the Archaeology of Native North America. *American Antiquity* 70:55–74.

Smith, Betty Anderson

1979 Distribution of Eighteenth–Century Cherokee Settlements. In *The Cherokee Indian Nation: A Troubled History*, edited by Duane H. King, pp. 46–60. University of Tennessee Press, Knoxville.

Smith, Bruce D.

1986 The Archaeology of the Southeastern United States: From Dalton to de Soto, 10,500–500 B.P. *Advances in World Archaeology* 5:1–92.

Smith, Leonard A.

2007 *Chaos: A Very Short Introduction*. Oxford University Press, Oxford, UK.

Smith, Marvin T.

1987 *Archaeology of Aboriginal Culture Change in the Interior Southeast: Depopulation During the Early Historic Period*. University Press of Florida, Gainesville.

2000 *Coosa: The Rise and Fall of a Southeastern Mississippian Chiefdom*. University Press of Florida, Gainesville.

2002 Aboriginal Population Movements in the Postcontact Southeast. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 3–20. University Press of Mississippi, Jackson.

2006 Aboriginal Population Movements in the Early Historic Period Southeast. In *Powhatan's Mantle: Indians in the Colonial Southeast (Revised and Expanded Version)*, edited by Gregory A. Waselkov, Peter H. Wood, and Tom Hatley, pp. 43–56. University of Nebraska Press, Lincoln.

Smith, Marvin T., and Julie Barnes Smith

1989 Engraved Shell Masks in North America. *Southeastern Archaeology* 8:9–18.

Snyder, Christina

2010 *Slavery in Indian Country: The Changing Face of Captivity in Early America*. Harvard University Press, Cambridge, MA.

Springer, James W.

1981 An Ethnohistoric Study of the Smoking Complex in Eastern North America. *Ethnohistory* 28:217–235.

Stahle, David W., Malcolm K. Cleaveland, Dennis B. Blanton, Matthew D. Therrell, and David A. Gay

1998 The Lost Colony and Jamestown Droughts. *Science* 280:564–567.

Steinacher, Terry L., and Gayle F. Carlson

1998 The Central Plains Tradition. In *Archaeology on the Great Plains*, edited by W. Raymond Wood, pp. 235–268. University of Kansas Press, Lawrence.

Steponaitis, Vincas P.

1986 Prehistoric Archaeology in the Southeastern United States, 1970–1985. *Annual Review of Anthropology* 15:363–404.

1998 Native American Cultures in the Precolonial South. In *The Natchez District in the Old, Old South*, edited by Vincas P. Steponaitis, pp. 1–22. University of North Carolina, Center for the Study of the American South, Research Report 11, Chapel Hill.

Stone, Tammy

1999 The Chaos of Collapse: Disintegration and Reintegration of Inter-Regional Systems. *Antiquity* 73:110–118.

Swanton, John R.

1911 *Indian Tribes of the Lower Mississippi Valley*. Bureau of American Ethnology Bulletin 43, Smithsonian Institution, Washington, DC.

1946 *The Indians of the Southeastern United States*. Bureau of American Ethnology Bulletin 137, Smithsonian Institution, Washington, DC.

1952 *The Indian Tribes of North America*. Bureau of American Ethnology Bulletin 145, Smithsonian Institution, Washington, DC.

Tritton, David

1993 Chaos in the Swing of a Pendulum. In *Exploring Chaos: A Guide to the New Science of Disorder*, edited by Nina Hall, pp. 22–32. W. W. Norton, New York.

Turnbaugh, William A.

1975 Tobacco, Pipes, Smoking and Rituals Among the Indians of the Northeast. *Quarterly Bulletin of the Archaeological Society of Virginia* 30:59–71.

1977 Elements of Nativistic Pipe Ceremonialism in the Post–Contact Northeast. *Pennsylvania Archaeologist* 47:1–7.

1979 Calumet Ceremonialism as a Nativistic Response. *American Antiquity* 44:685–691.

Wallace, Anthony F. C.

1956 Revitalization Movements: Some Theoretical Considerations for Their Comparative Study. *American Anthropologist* 58:264–281.

1970 *Death and Rebirth of the Seneca*. Knopf, New York, NY.

Ward, H. Trawick, and R. P. Stephen Davis, Jr.

1999 *Time Before History: The Archaeology of North Carolina*. University of North Carolina Press, Chapel Hill.

Waselkov, Gregory A.

1989 Seventeenth-Century Trade in the Colonial Southeast. *Southeastern Archaeology* 8:117–133.

1992 French Colonial Trade in the Upper Creek Country. In *Calumet and Fleur-de-Lys: Archaeology of Indian and French Contact in the Midcontinent*, edited by John A. Walthall and Thomas E. Emerson, pp. 35–53. Smithsonian Institution Press, Washington, DC.

1993 Historic Creek Indian Responses to European Trade and the Rise of Political Factions. In *Ethnohistory and Archaeology: Approaches to Postcontact Change in the Americas*, edited by J. Daniel Rogers and Samuel M. Wilson, pp. 123–131. Plenum Press, New York, NY.

1994 The Macon Trading House and Early European–Indian Contact in the Colonial Southeast. In *Ocmulgee Archaeology, 1936–1986*, edited by David J. Hally, pp. 190–196. University of Georgia Press, Athens.

Waselkov, Gregory A., and Ashley A. Dumas

2009 Archaeological Clues to a Seventeenth–Century Pan–Southeastern Revitalization Movement. Paper presented at the 66th Annual Meeting of the Southeastern Archaeological Conference, Mobile, Alabama.

2010 Protohistoric Pan–Southeastern Revitalization: Theory and Context. Paper presented at the 67th Annual Meeting of the Southeastern Archaeological Conference, Lexington, Kentucky.

Wesson, Cameron B.

2002 Prestige Goods, Symbolic Capital, and Social Power in the Protohistoric Southeast. In *Between Contact and Colonies: Archaeological Perspectives on the Protohistoric Southeast*, edited by Cameron B. Wesson and Mark A. Rees, pp. 110–125. University of Alabama Press, Tuscaloosa.

2008 *Households and Hegemony: Early Creek Prestige Goods, Symbolic Capital, and Social Power*. University of Nebraska Press, Lincoln.

Wesson, Cameron B., and Mark A. Rees

2002 Protohistory and Archaeology: An Overview. In *Between Contact and Colonies: Archaeological Perspectives on the Protohistoric Southeast*, edited by Cameron B. Wesson and Mark A. Rees, pp. 1–11. University of Alabama Press, Tuscaloosa.

West, George A.

1934 *Tobacco, Pipes and Smoking Customs of the American Indians*. Bulletin of the Public Museum of the City of Milwaukee XVII, Milwaukee, Wisconsin.

Williams, Garnett P.

1997 *Chaos Theory Tamed*. Joseph Henry Press, Washington, DC.

Williams, Mark, and Gary Shapiro

1996 New Data on the Oconee Province. In *Political Structure and Change in the Prehistoric Southeastern United States*, edited by John F. Scarry, pp. 129–149. University Press of Florida, Gainesville.

Williams, Samuel Cole (editor)

1927 *Lieutenant Henry Timberlake's Memoirs*. Watauga Press, Johnson City, Tennessee.

Williams, Stephen

1990 Foreword. In *The Mississippian Emergence*, edited by Bruce D. Smith, pp. xv–xvii. Smithsonian Institution Press, Washington, DC.

Wilson, Gregory D., and Christopher B. Rodning

2002 Boiling, Baking, and Pottery Breaking: A Functional Analysis of Ceramic Vessels from Coweeta Creek. *Southeastern Archaeology* 21:29–35.

Witthoft, John

1949 Stone Pipes of the Historic Cherokee. *Southern Indian Studies* 1:43–63.

Wolf, Eric R.

1997 *Europe and the People Without History*. University of California Press, Berkeley.

Worth, John E.

2002 Spanish Missions and the Persistence of Chiefly Power. In *The Transformation of the Southeastern Indians, 1540–1760*, edited by Robbie Ethridge and Charles Hudson, pp. 39–64. University Press of Mississippi, Jackson.

2009 Razing Florida: The Indian Slave Trade and the Devastation of Spanish Florida, 1659–1715. In *Mapping the Mississippian Shatter Zone: The Colonial Indian Slave Trade and Regional Instability in the American South*, edited by Robbie Ethridge and Sheri M. Shuck–Hall, pp. 295–311. University of Nebraska Press, Lincoln.

Figure Captions

Figure 1. Sites in eastern North America with redstone disk pipes and redstone elbow pipes (after Brown 2006:394).

Figure 2. Schematic map of the Coweeta Creek site (after Rodning 2002a:12, 2007:470, 2009a:629, 2009b:3, 2010a:61).

Figure 3. Redstone disk and elbow pipes from the Southeast. Disk pipes: (A) Spiro, Oklahoma; (B) Moundville, Alabama; (C) Mohman, Georgia; (D) Great Tellico, Tennessee; (E) Nacoochee, Georgia; (F), Noel Stone Box Grave Cemetery, Tennessee (after Brown 2006:388). Elbow pipes: (G) unknown provenience, Georgia; (H) Wright's Bluff, Mississippi; (I, L) Haynes Bluff, Mississippi; (J, K) Trudeau, Louisiana (after Brown 2006:398).

Figure 4. Redstone pipe bowl fragment from the Coweeta Creek site (photograph by R. P. Stephen Davis, Jr., courtesy of the Research Laboratories of Archaeology, University of North Carolina at Chapel Hill).

Figure 5. Redstone pipe bowl fragment (A) from the Coweeta Creek site, and selected calumet pipes from: (B-C) Conestoga Town, Pennsylvania (after Kent 1984:153–154); (D) Haynes Bluff, Mississippi (after Brown 2006:398); (E) Trudeau, Louisiana (after Brown 2006:398).

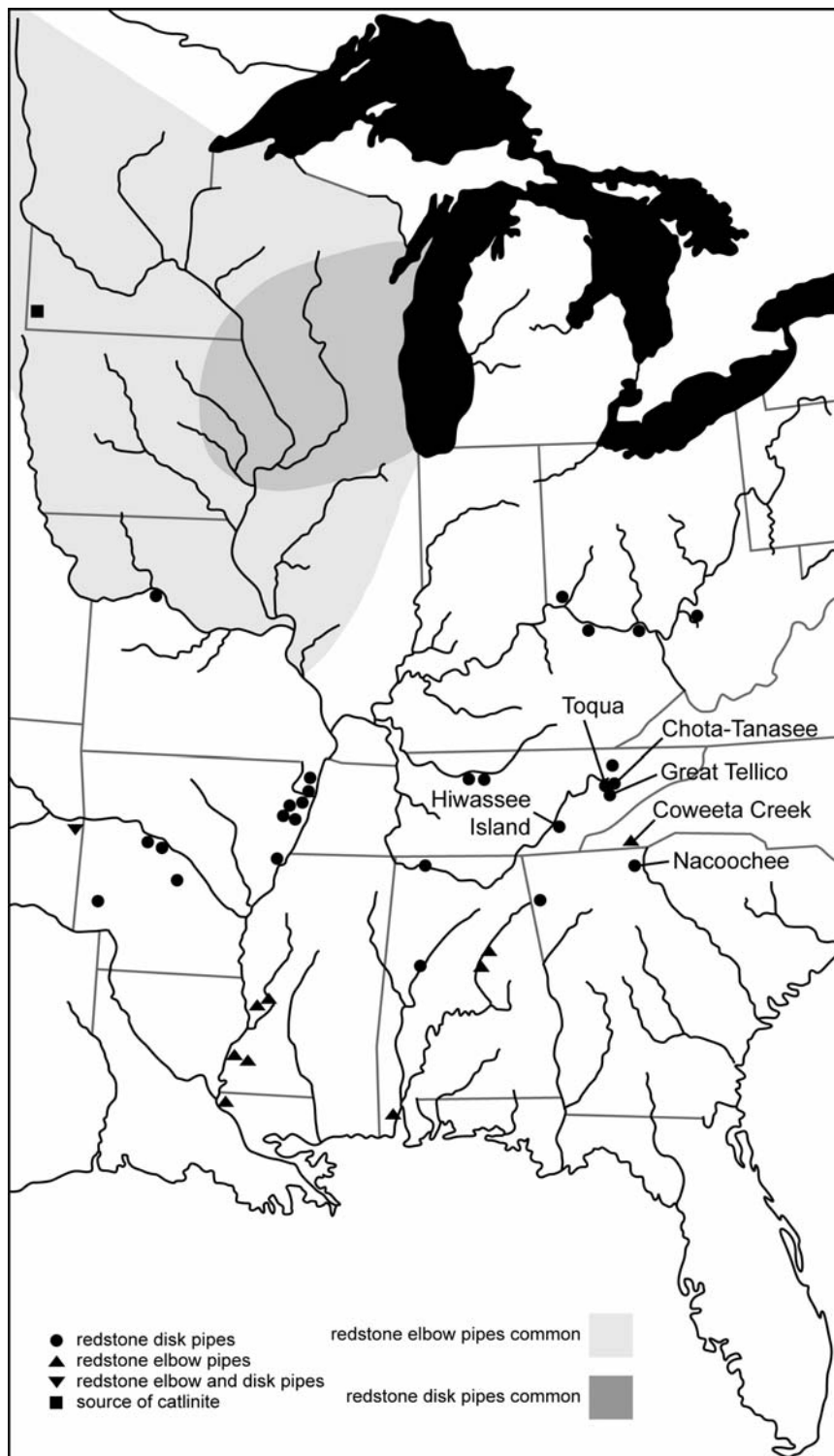


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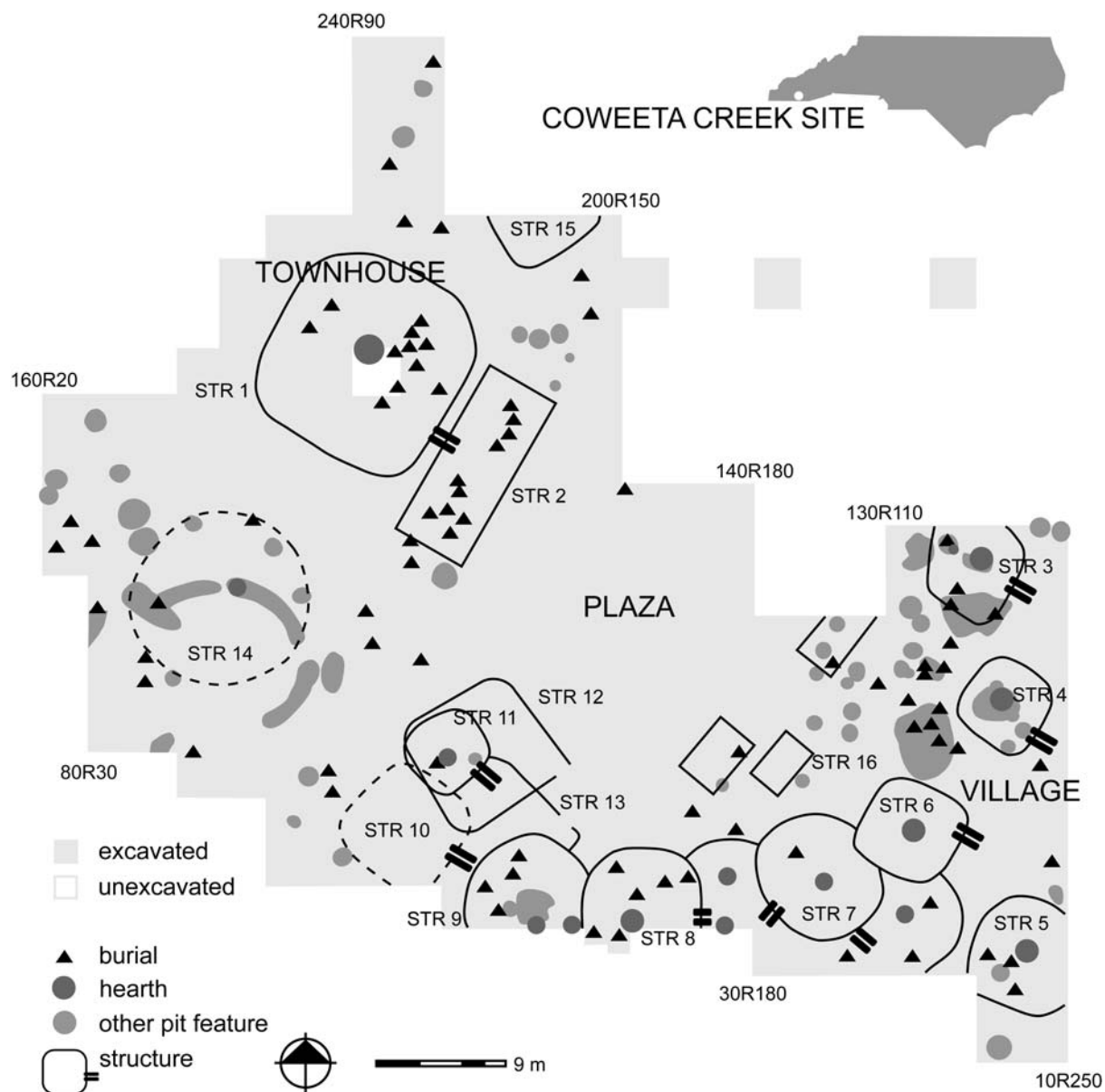


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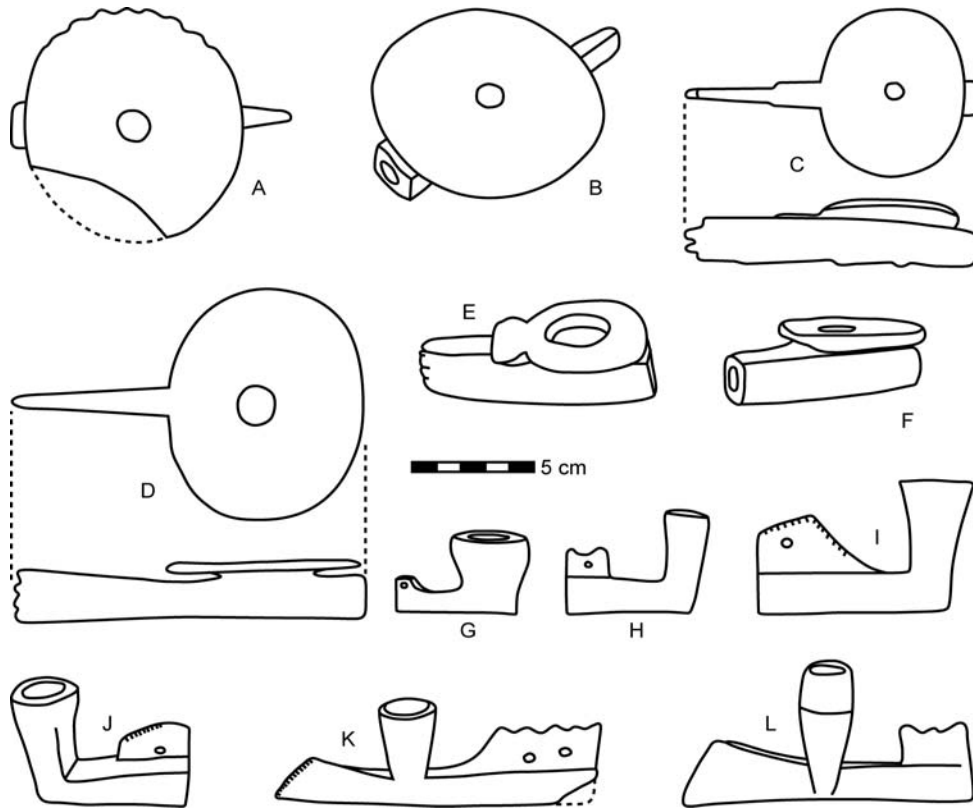


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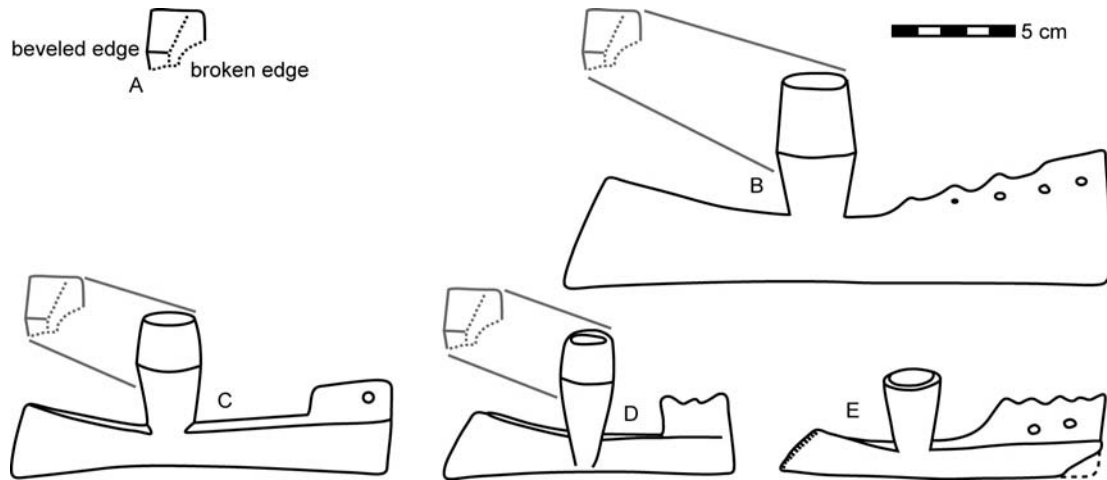


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