

THE IMPACT OF OLD WORLD DISEASES ON THE NATIVE INHABITANTS OF THE NORTH CAROLINA PIEDMONT

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Abstract

This paper presents research concerning the impact of Euro-African diseases on the native populations of the Southeastern United States. Some suggest that Old World diseases decimated aboriginal populations of the Southeast decades before sustained contact between Indians and Europeans. Others take the view that population declines occurred after the establishment of permanent colonial settlements and direct contacts between Europeans and Indians. Data from the North Carolina piedmont support the latter scenario. Surveys, excavations, and historical research reveal no archeological or documentary evidence of depopulation until after 1650. However, between 1670 and 1700 entire communities disappeared as waves of alien diseases swept across the piedmont region.

Introduction

During the latter half of the sixteenth century and throughout the seventeenth century, irreversible changes occurred across the cultural landscape of the Southeastern United States. Many factors were responsible for these changes; however, the most devastating change was brought about by the most miniscule of agents, the microbes who bore diseases deadly to the natives. When these diseases were introduced, and the extent of their spread, recently has become the subject of debate in the fields of demography, archeology, physical anthropology, and ethnohistory.

Some researchers (e.g., Ramenofsky 1987; Smith 1987) have generally supported the position taken by Henry Dobyns (1983). In a nutshell, Dobyns believes that waves of pandemics swept through the interior Southeast with the arrival of the earliest Spanish explorers in the Caribbean, Mexico, and the Gulf coastal region. These "virgin soil" epidemics struck with a deadly fury, causing drastic population declines in regions far removed from the initial areas of face-to-face contacts between foreigners and Indians (Dobyns 1983:13).

Other researchers (e.g., Blakely and Detweiler-Blakely 1989; Henige 1989; Milner 1980:47; Snow and Lanphear 1989) have followed a more cautious path and pointed out that the impact and spread of Old World pathogens were probably dependent on a number of local and regional variables. Community size, inter-village interaction, and the degree and intensity of trade and contact all affected the rapidity and scope of the spread of epidemic diseases such as small pox, measles, and influenza.

Both positions rely primarily on historical and ethnographic data. Archeological data, at least excavation data, have rarely been employed in demographic studies. Archeologists who have approached the problem of population collapse in the Southeast usually have done so by ordering sites chronologically within the context of regional surveys and reconstructing population changes based on shifting site frequencies. In this paper, we reconstruct population dynamics by presenting data from extensive excavations in a relatively small region where a detailed chronology has been developed.

Recent research in the northeastern North Carolina piedmont has resulted in the development and refinement of the cultural chronology spanning the period between A.D. 1000 and 1700 (Dickens, Ward, and Davis 1987). During this period, the Siouan tribes who occupied the region witnessed the sporadic and episodic adventures of the Spanish explorers as well as the prolonged and intensified commercial endeavors of the English traders.

Excavations and surveys conducted in the Haw, Eno, and Dan River drainages (Figure 1) over the last six years have produced not only a fine-grained chronology of settlement change (Davis and Ward 1991) but also detailed community plans of individual villages and extensive mortuary material. When these data are coupled with information from the ethnohistoric and historic documents, a vivid picture of life on the Carolina piedmont during the contact period emerges.

In order to focus on that portion of the picture which maps the impact of alien diseases on the piedmont

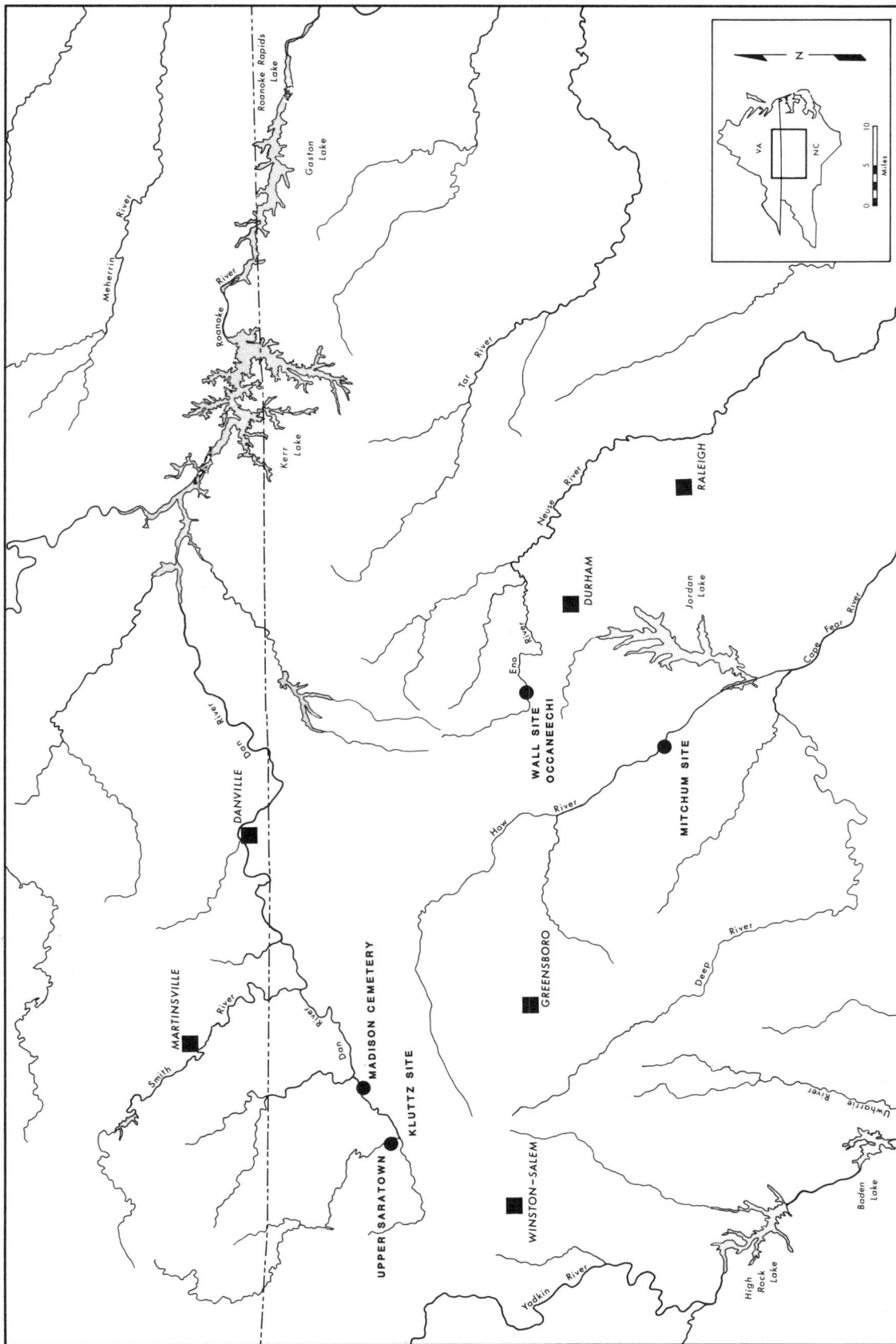


FIGURE 1. Map of Siouan study area.

Siouans, archeological data from the sixteenth century will be compared with similar data from the seventeenth century and with the ethnohistoric accounts of early travelers. If Dobyns is correct, there should be evidence of massive depopulation during the sixteenth century because of epidemics introduced by the Spanish while exploring the coastal and interior Southeast. If, on the other hand, the spread of Old World diseases was dependent on more direct and sustained interaction between natives and Europeans, then the seventeenth century and the arrival of the English should foreshadow the beginning of the depopulation process.

Siouan Settlement Patterns

From the standpoint of the ethnohistoric record, the sixteenth century and early seventeenth century Carolina piedmont is virtually a *terra incognita*. De Soto and Pardo may have traveled through the western fringes of the region, but the relatively small tribes nestled along the easterly flowing streams held little interest for the treasure-seeking Spanish. Consequently, it is necessary to rely almost entirely on the archeological record to reconstruct populations and to investigate any changes that may have occurred as a result of the Spanish entradas and early English settlements.

In the Haw and Eno River drainages, the Haw River and Hillsboro phases define the period between A.D. 1000 and 1600. The Hillsboro phase, dating between A.D. 1400 and 1600, brackets the period when the first contacts should have been made between Indians and Europeans. In the Dan River drainage, the period between A.D. 1000 and 1450 is defined by the Dan River phase, whereas the early Saratown phase encompasses the early contact period between A.D. 1450 and 1620.

Between A.D. 1540 and 1620, the Spanish troops of de Soto and Pardo not only marched along the western margin of the piedmont, they also established settlements on the South Carolina coast. Toward the end of this period, English settlers attempted to form a colony on Roanoke Island on the North Carolina coast and managed to carve a precarious toe-hold on the James River in Virginia.

If "virgin soil" epidemics resulted from these early contacts, evidence of depopulation and settlement instability should surface during the Hillsboro and early Saratown phases. Numbers of settlements and perhaps settlement sizes should decrease in a dramatic manner from those dating to the latter part of the Haw River and Dan River phases. Furthermore, villages should contain fewer and perhaps less permanent structures, and an increase in mortality rates should be reflected by an increase in numbers of burials and perhaps multiple or mass burials.

Survey data pertaining to the pre-contact Haw River phase indicate a preponderance of small dispersed settlements characterized by low artifact outputs and few features. Apparently, households were loosely grouped along the flanks of secondary streams in a hamlet-like fashion. The Haw River phase component at the Mitchum site, located on the Haw River, is an exception to this pattern. Here a more compact and long-term occupation is indicated by high artifact densities and midden accumulation (Davis and Ward 1991).

The pre-contact Dan River phase in the upper Dan River drainage reveals a much different pattern of settlement. Here larger, more compact villages are the norm. During the latter part of the Dan River phase, most sites appear to be between one and two acres in size and probably contained at least 15-20 households within their palisades. Pit features, including burials, are associated with the structures. Fortifications and corresponding settlement nucleation may have resulted from an intensification of maize agriculture and competition for good crop land, as well as from outside threats from northern Iroquois groups (Davis and Ward 1991).

The Hillsboro phase in the Haw and Eno drainages sees the continuation of the basic settlement and community patterns observed during the preceding Haw River phase. Like the earlier Mitchum site, the Wall site located on the Eno River reflects a compact palisaded village of approximately 1.25 acres with several circular houses and an extensive midden (Figure 2). More dispersed settlements also occur along the tributary streams (Davis and Ward 1991). Although Hillsboro phase sites are fewer in number, artifact and pit feature densities increase markedly over those of the earlier Haw River phase settlements. This increased occupation intensity is particularly noticeable during the last half of the Hillsboro phase, the time when early European contact would have been taking place (Davis and Ward 1991).

Settlement changes are also evident on the Dan River during the early Saratown phase, dating between

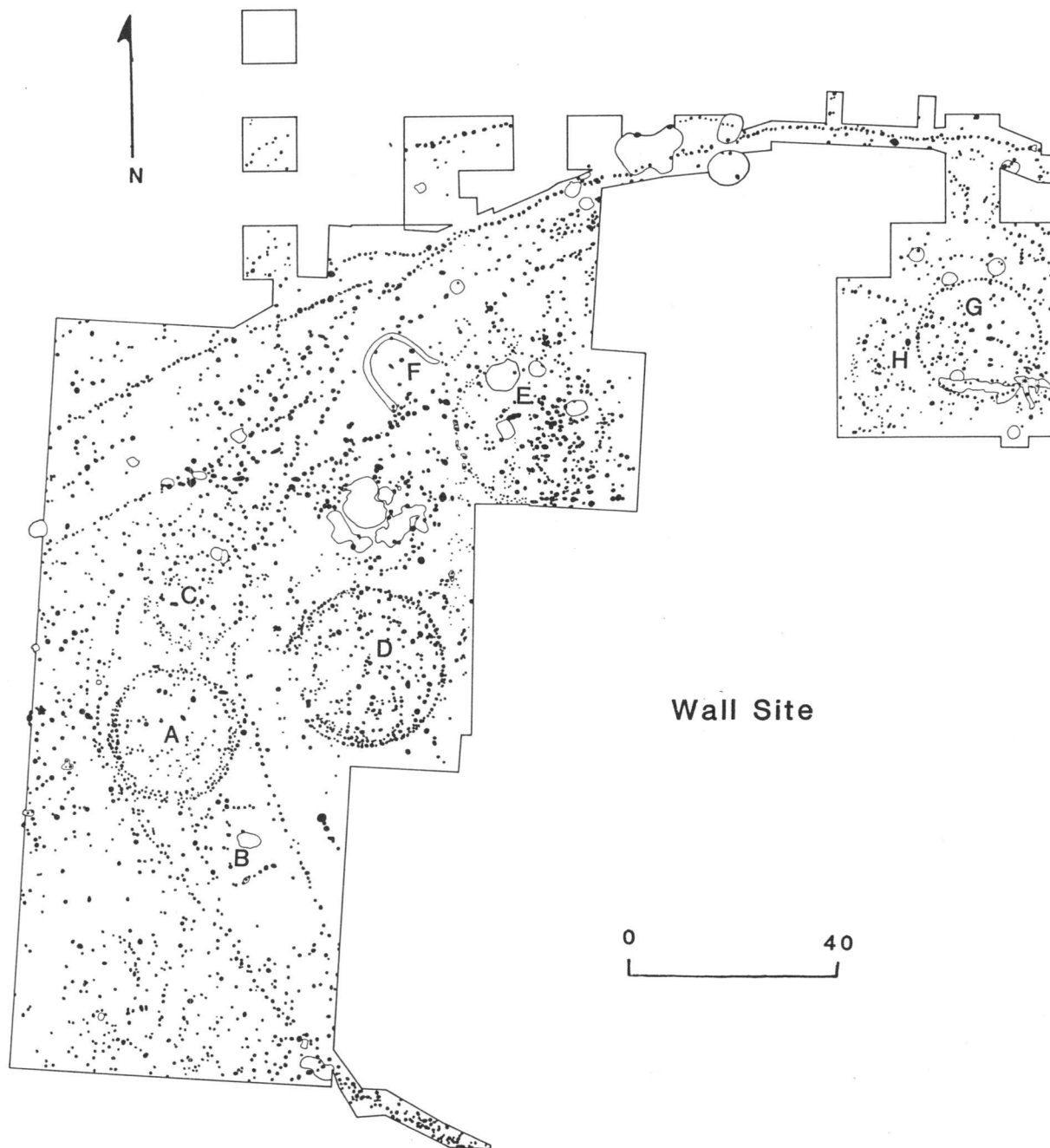


FIGURE 2. Plan of Wall site excavations.

A.D. 1450 and 1620. Villages were moved to near the confluences of the Dan and its major tributaries, and site sizes increased dramatically (Davis and Ward 1991). Here, overall numbers of sites decrease, but this decrease is a consequence of amalgamation rather than depopulation. Data from excavations shed further light on these changes during the early contact period.

Community Patterns at Sixteenth Century Siouan Sites

Several sites within the Dan, Haw, and Eno River basins have been excavated extensively. In addition, numerous sites have been subjected to limited excavations and extensive auger testing to locate intact features. Auger testing has been particularly helpful in providing distribution and density information on subsurface features and burials at the more dispersed settlements.

The most extensively excavated Hillsboro phase site in the North Carolina piedmont is the Wall site (Petherick 1987:30). Excavations have uncovered 14,300 square feet, or approximately one-fourth, of this palisaded village. At least seven domestic and two special purpose structures have been identified along with eight burials and 73 other features (Figure 2). Most of the latter consist of postholes or shallow basin-shaped pits. Deep storage facilities are rare at the site. The population at the Wall site is estimated to have been between 100 and 150 people, based on the size and number of structures (Davis and Ward 1991). Multiple palisade alignments and the replacement rate of wall posts within structures (cf. Warrick 1988) further suggest that the site was occupied for between 10 and 20 years.

The Wall site, like other Hillsboro phase sites, is characterized by a sparsity of burials. Assuming that the burial population is randomly scattered across the site, which is the normal Siouan pattern, an additional 24 graves, for a total of 32, would be expected. If the other population parameters are even close to being correct, this translates into a low crude death rate. For example, if the site was occupied for only 10 years by a small population of 100 individuals, the crude mortality rate would be 32 (per 1000). If, however, it was occupied for 20 years by a population of 150 individuals, the crude mortality rate declines to 11 (per 1000) (see Ubelaker 1978:96).

Based on architectural and stylistic evidence, we believe the latter estimates to more accurately reflect the population dynamics of the Wall site. But even the higher crude mortality rate is less than that calculated for a large pre-contact Siouan burial population. The analysis of 129 skeletons from the Shannon site in southern Virginia yielded a crude mortality rate of 38 (per 1000) (Hogue 1988:99).

A low density of burials also has been indicated at other Haw and Eno River sites dating to the sixteenth and early seventeenth centuries. Only two burials have been identified at the Mitchum site, and these date to the mid-seventeenth century Mitchum phase component. Extensive auger tests (covering an average area of 11,000 square feet) and excavations in areas with high pit densities have resulted in the identification of only two other definite burial pits from six sites dating to the late Haw River and Hillsboro phases. This contrasts with the excavation of 66 non-burial features from these same sites. Given the extent of the auger coverage and the fact that all site areas with subsurface feature concentrations were sampled, it is highly unlikely that burials clustered in cemeteries or other discrete site areas went undetected.

To summarize, there is no archeological evidence, either from settlement data or extensive site excavations, that massive population declines occurred during the sixteenth and early seventeenth centuries in the Siouan area of the North Carolina piedmont. Neither the purported Spanish forays into the fringes of the region nor the early English settlements in Virginia and along the North Carolina coast had any noticeable impact on the inhabitants of the interior piedmont. This situation, however, began to change after 1650 when English traders from Fort Henry began to travel into the North Carolina interior, and it is after this time that we have the first written accounts of the piedmont tribes.

Ethnohistoric Accounts of Seventeenth Century Piedmont Siouans

Based on the ethnohistoric documents, it would appear that the initial period of contact between Virginians and the piedmont Indians did not result in immediate, massive epidemics and rapid depopulation. As late as 1673 James Needham and Gabriel Arthur traveled through the north-central piedmont on their way to Cherokee country and gave no indication that native populations had been decimated or severely disrupted in any fashion. Once they reached the Cherokee, or Tomahitan town, Gabriel Arthur described a thriving

community with "an abundance of corne and all manner of pulse with fish, flesh and beares oyle" (Alvord and Bidgood 1912:213). He also stated that the Tomahitans kept 150 canoes, each of which could carry 20 men. And this town was located only eight days from the Spanish settlements on the South Carolina coast, with which the Tomahitans had been trading for some time (Alford and Bidgood 1912:213).

Even John Lawson, traveling through the South Carolina and North Carolina piedmont in the winter of 1700-1701, was impressed with the numbers of people he encountered during the southern leg of his journey. Once he left the coast of South Carolina, where the Sewees had been decimated by European diseases, Lawson described the Esaw or Catawba as "a very large nation containing many thousand people" (Lefler 1967:46). Three days later Lawson again described the landscape as being very "thick" with Indian settlements (Lefler 1967:49). And the next day he stated that "we passed through a great many towns and settlements, that belong to the Sugeree-Indians" (Lefler 1967:49).

However, as Lawson's journey took him closer to the settlements of the Keyauwee, Tutelo, and Saponi, groups that had been intensively engaged in the Virginia deerskin trade, his observations changed. A few days after leaving the Sugeree, Lawson described small towns of "not above 17 Houses" (Lefler 1967:50). He then traveled four days to the Sapona Town without meeting any Indians, and when he arrived at Sapona, Lawson mentioned for the first time the amalgamation of distinct tribes into single villages (Lefler 1967:50-53).

Lawson's journal suggests that although epidemic diseases had impacted the native tribes of the Carolinas by 1700, this impact was not uniform in its devastation. The more isolated groups along the South Carolina-North Carolina border seem to have been doing very well in 1700. However, the coastal tribes living near the English and Spanish had certainly felt the full brunt of the European presence, as had the northern piedmont Siouans who had become involved in the Virginia deerskin trade. These tribes who had experienced direct, sustained contact with Europeans are the groups that Lawson was, no doubt, referring to when he observed that there is not the "sixth Savage living within 200 miles of our Settlements as there were fifty years ago" (Lefler 1967:252).

Seventeenth Century Siouan Communities

Although the piedmont Siouans were spared the early outbreaks of epidemic diseases during the sixteenth and the first half of the seventeenth century, their luck did not hold. After 1670 epidemics swept through the northern piedmont, decimating entire villages. Men like John Lawson recorded this devastation as footnotes in their journals and diaries, but the most dramatic and vivid expression of the affect of the new diseases on seventeenth century native populations can be seen in the archeological record of the Dan and Eno river drainages.

At the village of Upper Saratown on the Dan River, occupied during the late Saratown phase (A.D. 1670-1710) by the Siouan-speaking Sara Indians, extensive excavations have uncovered one-fourth of a palisaded village that extends over approximately 1.5 acres (Figure 3). Within the excavated area, portions of at least 13 houses, 225 pit features, and 111 burials have been recorded. The burials were densely scattered across the site, in and around house structures. They were so concentrated that, during the excavations, it was almost impossible to remove the plowzone from a 10x10-foot excavation unit without encountering the tops of burial pits. At the nearby Madison site, occupied during the same time period, a similar-sized excavation revealed 120 graves so closely packed that the amateur archeologists who excavated the site thought it represented a cemetery (Gravely 1969:11).

A detailed analysis of the burials from Upper Saratown indicates a crude mortality rate of 48 (per 1000) (Hogue 1988:99). This rate yields an estimated population of 231 individuals if the site was occupied for 10 years (Ubelaker 1978:96). A 20-year occupation span would decrease the overall size of the population to 116 individuals. We suspect that the higher figure more accurately reflects the Upper Saratown population (Davis and Ward 1991).

The density of burials at Upper Saratown and the Madison site contrasts markedly with that of the earlier Sara villages of Lower Saratown and Early Upper Saratown, occupied before A.D. 1670. And so does the quantity of European trade goods found at these sites. Whereas Upper Saratown and the Madison site have produced large quantities of glass beads and copper ornaments, Lower Saratown and Early Upper Saratown have yielded only a few glass and copper beads. The paucity of trade materials, in conjunction with the lack



FIGURE 3. Plan of Upper Saratown site excavations.

of evidence for disease and depopulation, point to limited and probably indirect contacts between natives and Europeans prior to 1670.

Comparing the Hillsboro phase Wall site on the Eno River with the seventeenth century Upper Saratow village on the Dan River provides significant insights into the question of the timing of depopulation on the piedmont. In both cases large village areas have been uncovered which reveal patterns of houses, palisades, pit features, and burials. The burial density of Upper Saratow is obviously much higher than that of the Wall site, although the overall site sizes are nearly identical. A larger resident population has been suggested for the Dan River village, but the crude mortality rate of 48 is considerably higher than the highest possible estimate of 32 for the Wall site.

That the differences in crude mortality rates are real and a consequence of epidemic diseases during the seventeenth century is further supported by the fact that wall post density and replacement rates at Wall and Upper Saratow are very similar (Tables 1 and 2). This correspondence, as well as other architectural and stylistic evidence, suggests that both sites were occupied for approximately the same length of time. In fact, Upper Saratow appears to have been occupied for a slightly shorter period of time than the Wall site, suggesting an even higher mortality rate than that calculated from the skeletal population.

Because the type of wood used in house construction cannot be determined with certainty (none of the structures were burned at either site), the actual period of occupation based on wall post replacement rates

TABLE 1. Wall post densities at the Wall site.^a

Structure	No. of Wall Posts	Diameter (ft)	Circumference (ft)	Density ^b (posts/ft)
A	163	30	94	1.7
D	223	38	119	1.9
E	150	35	110	1.4
G	83	30	94	0.9

^aOnly clearly defined structures were used in calculations

^bRatio of maximum density to minimum density=1.9/.9=2.1 (see Warrick 1988:38)

TABLE 2. Wall post densities at Upper Saratow.^a

Structure	No. of Wall Posts	Diameter (ft)	Circumference (ft)	Density ^b (posts/ft)
A	172	32	100	1.7
B	126	25	79	1.6
C	111	35	110	1.0
E	91	26	82	1.1
J	90	32	100	0.9

^aOnly clearly defined structures were used in calculations

^bRatio of maximum density to minimum density=1.7/.9=1.9 (see Warrick 1988:38)

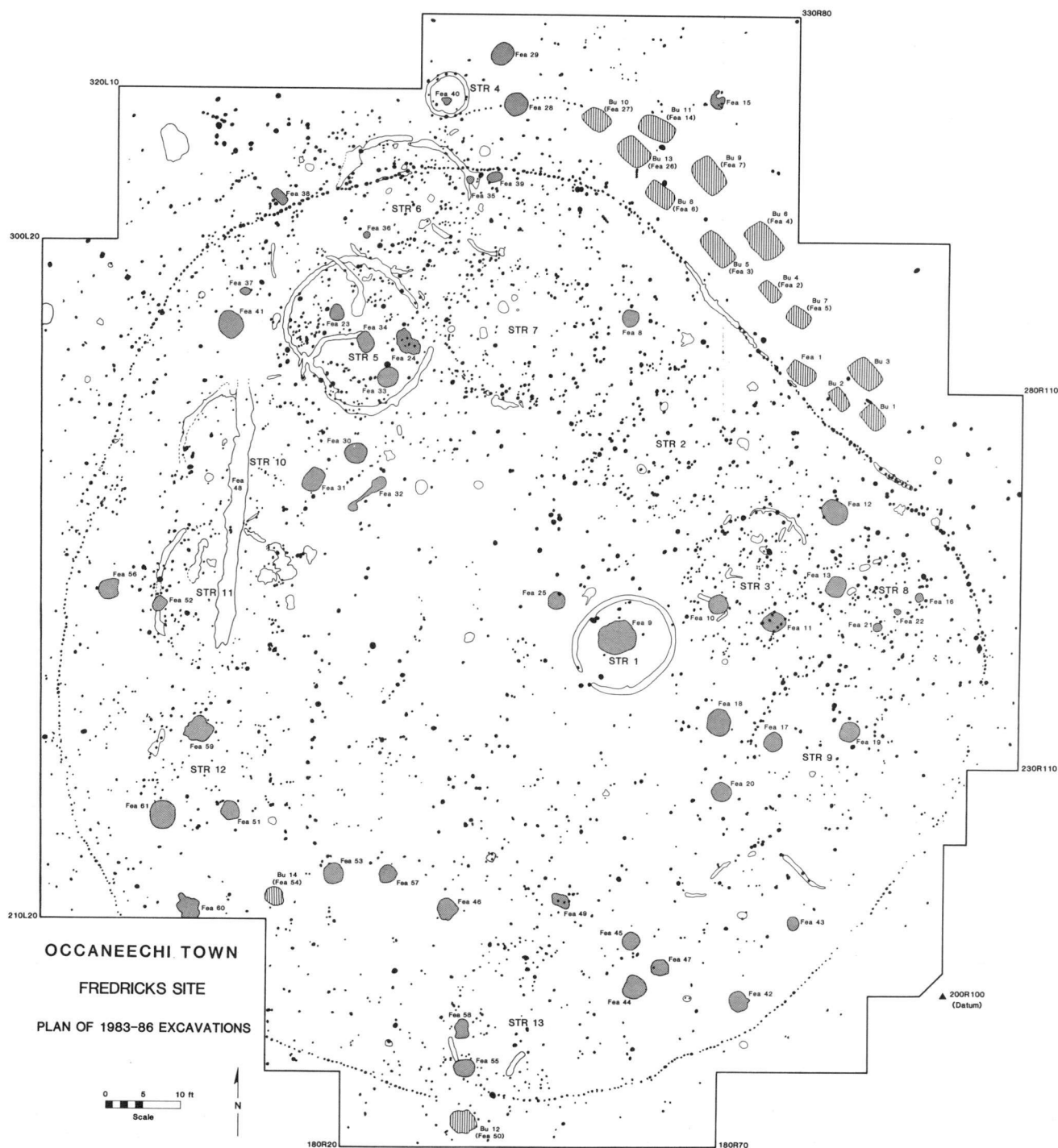


FIGURE 4. Plan of Occaneechi Village excavations.

cannot be accurately assessed. However, if readily available hardwoods were used in house construction, the previously suggested occupation spans of between 10 and 20 years would not be out of line with estimates based on wall post density/replacement rates (compare Warrick 1988:Figure 3 with Tables 1 and 2 above).

Disease continued to ravage the Dan River Sara during the last two decades of the seventeenth century. At the William Kluttz site, located just downstream from Upper Saratow and occupied ca. A.D. 1690-1700, 30 burial pits were uncovered within an area of only 600 square feet. Most were subadults placed in shallow pits less than two feet deep. Two adult burials located some distance away were placed in more traditional, central shaft-and-chamber pits dug to a depth of over four feet. The shallow-burial cluster containing mostly children may have resulted from a single disease episode, perhaps one of the smallpox epidemics that struck the piedmont between 1696 and 1699 (Dobyns 1983:115). The fact that most of the graves were those of children also suggests that by this time adults who had survived the earlier epidemics seen at Upper Saratow may have developed some immunity to the deadly virus.

The smaller tribes within the Eno and Haw River drainages were not exempt from the late seventeenth century epidemics either. The number of sites post-dating 1670 provides the most apparent evidence of the toll taken by smallpox, influenza, measles, and other Euro-African diseases. In 1701, Lawson found only three villages in the area. To date we have located only one, the Occaneechi village near Hillsborough, North Carolina.

The 1983-1986 excavations at Occaneechi Town (also known as the Fredricks site) uncovered a small palisaded compound in its entirety, revealing 11 domestic structures within an area less than one-fourth acre in extent. A cemetery containing 13 graves was placed just outside the palisade (Figure 4). Evidence of an additional cemetery (with at least four burials) was uncovered in 1989. The original 13 burials indicate a crude mortality rate of 57 (per 1000), even higher than that at Upper Saratow (Hogue 1988:99).

This death rate is admittedly based on a very small and potentially biased skeletal population. However, architectural evidence (i.e., the lack of structural rebuilding), the size of the site, and characteristics of the ceramic sample all point to a very small population (50-75 individuals) living in the village for a short period of time (less than a decade) (Davis and Ward 1991). These estimates support the high mortality figure even though the skeletal population from which it was derived is small.

Conclusions

Although Euro-African diseases were slow in entering the North Carolina interior, their end result was no less devastating than if they had swept across the foothills with the arrival of the early Spanish explorers. By 1740, when the first white settlers began venturing into the northern piedmont, they met no resistance from the native tribes. In fact, they met few natives. Over a period of less than 100 years after the first Virginia traders bartered their wares, the villages of the Sara, Occaneechi, Eno, Sissipahaw, Tutelo, Saponi, and Shakori lay vacant, surrounded by abandoned fields that were soon to be tilled by the newcomers.

There can be no argument that alien diseases were a major cause of depopulation and the cultural demise of Southeastern Indians; however, to view the spread of these diseases as waves of uninterrupted pandemics during the sixteenth century oversimplifies complex processes of culture contact and change. Many factors contributed to the spread and "deadliness" of Old World microbes, including native population densities, the intensity of interaction between tribes and newcomers, as well as intertribal relations. The etiology the various diseases also must also be considered in conjunction with geographic and topographic factors.

In short, a complex of many cultural, social, and biological variables contributed to the timing and rate of depopulation in the Southeast. It is far too simplistic to place most of the blame on the sixteenth century Spanish explorers. They, no doubt, contributed their share in some parts of the Southeast, but it was the late seventeenth century English traders who introduced the Carolina piedmont Indians to these deadly, invisible invaders.

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ARCHAEOLOGY OF EASTERN NORTH AMERICA

The preceding article was subjected to formal
peer review prior to publication