

The following chapter is from:

The Archaeology of North Carolina: Three Archaeological Symposia

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R. P. Stephen Davis, Jr. – Co-Editor

North Carolina Archaeological Council Publication Number 30

2011

Available online at:

<http://www.rla.unc.edu/NCAC/Publications/NCAC30/index.html>

ARCHAEOLOGICAL RESEARCH AT FORT RALEIGH - PAST AND PRESENT

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The history of the English settlements at Roanoke Island has been researched in great detail and extensively published; accordingly it is unnecessary to provide a comprehensive repetition of the story of the Roanoke Voyages in this report. Nevertheless, it is important for evaluating past archaeological investigations to briefly describe those events that may have left archaeological remains at Roanoke Island in the sixteenth century.

In 1584, Sir Walter Raleigh received a charter from Queen Elizabeth I to colonize part of North America in hopes of establishing an English empire in America. A reconnaissance voyage that same year to what is now North Carolina resulted in the English explorers visiting an Algonquian village on Roanoke Island and returning with a promising report of the country, which was named Virginia after Elizabeth, the Virgin Queen. Raleigh's first colony, 108 men under the leadership of Sir Richard Grenville and Ralph Lane, landed at the north end of Roanoke Island in July of 1585. A letter written by Ralph Lane to Richard Hakluyt was addressed "From the new Fort in Virginia, the 3. day of September 1585" and another letter to Sir Francis Walsingham from "the Newe Forte in Verginia" on September 8, 1585. (Quinn 1991:210-214). The records also suggest that the colonists built a town separate from the fort, as Ralph Lane in the spring of 1586 reported that the Roanokes intended to attack the colonists at both the town and the fort (Noel Hume 1994:37). In addition to exploring the surrounding country, observations and experiments were conducted by scientist Thomas Hariot and by Joachim Gans, a metallurgist or "mineral man" as he was called at the time. Archaeological research, discussed below, indicates that a scientific workshop for Hariot's and Gans' work was set up apart from both the town and fort. When supply ships commanded by Sir Richard Grenville, who had returned to England in August of 1585, were late in returning to the colony in 1586, the discouraged colonists abandoned Roanoke Island and returned to England aboard Sir Francis Drake's fleet that arrived off the Outer Banks after a Caribbean raiding expedition in June of that year.

The second colony is a consequence of the late arrival of Grenville's resupply. In August of 1586, Grenville returned to England after finding the settlement on Roanoke Island abandoned, however, he left a garrison of 15 men there to hold the land for the Queen. Pedro Diaz, a Spanish pilot captured in 1585 and taken by Grenville on the expedition in 1586, although he was not allowed to leave the ship, reported that the settlement had "...a wooden fort of little strength..." (Quinn 1991:790).

Raleigh dispatched another colony to Roanoke Island in 1587. The 117 men, women, and children arrived to find the 1585 fort ruined. The old houses were relatively unhurt and were quickly repaired. New cottages were also built and the settlement apparently was to be protected by a new fort. Governor John White, perhaps less than an effective leader, was persuaded to return to England for supplies, leaving on Roanoke Island his daughter Eleanor and her husband Ananias Dare, the parents of the fabled Virginia Dare, the first English child born in Virginia.

Due to war between England and Spain, White was unable to return to Roanoke Island until 1590, when he found no one on Roanoke Island. He did find, in his words, that the houses were taken down and

...the place very strongly enclosed with a high palisado of great trees, with curtains and flankers very Fort-like, and one of the chiefe trees or posts at the right side of the entrance had the barke taken off, and 5 foote from the ground in faire Capitall letters was graven Croatoan without any crosse of distresse, this done, we entered into the palisado, where we found many barres of Iron, two pigges of lead, four iron fowlers, Iron saker shot, and such like heavie things, thrown here and there, almost overgrown with weeds and grass (Quinn 1991:614).

Despite attempts in the early years of the Jamestown colony to search for survivors, they were never found and Raleigh's second expedition to the new World passed into history as the legendary "Lost Colony." A small earthen fort known by the nineteenth century as Fort Raleigh has been shown on maps since 1768 and traditionally has been associated with Lane's fort, but exactly who built it and how it fits into the story of Raleigh's colonies, if at all, is not entirely clear.

Documentary evidence of the actual location and physical remains of Raleigh's settlements is not only scanty but subject to a wide variety of interpretation. The first recorded visit to Roanoke Island by an Englishman after John White was reported by Francis Yeardley of Virginia in 1654 when he described an eyewitness account made the year before by traders who visited Roanoke Island and were shown by the resident Indians the ruins of "Sir Walter Raleigh's fort" (Powell 1965:15-16). The next known account of Fort Raleigh came in 1701, when surveyor John Lawson examined the site and wrote that "the Ruins of the Fort can be seen at this day." In addition to some old English coins, Lawson wrote that there was also "a brass gun, a powder horn, and a small quarter deck gun made of iron staves" at the site (Powell 1965:19). A number of visitors to Roanoke Island in the mid-19th century left intriguing observations of the site. In 1849 tutor George Higby Throop described seeing "the remains of the fort and glass globes containing quicksilver" (Powell 1965:26). Less than a year later, historian Benson J. Lossing stated that "slight traces of the fort may be seen near the north end" of Roanoke Island (Powell 1965:26). In a detailed description of the remains made by artist Edward Bruce in an 1860 article in *Harper's New Monthly Magazine*, Bruce reported seeing "The trench is clearly traceable in a square of about forty yards each way," while Charles H. Johnson sketched the surviving earthwork in 1862 (Powell 1965:27-28, Quinn 1985:383).

Although the earthwork at the north end of Roanoke Island has been the center of attention for Raleigh settlement scholars and archaeologists, there has always been one persistent concern about the earthwork – namely that it is only big enough to hold about 15 people, so then what is it? In 1895, Talcott Williams, a talented amateur archaeologist, sought to answer this question and was the first non-looter to put a shovel to the earthwork. Williams excavated 13 trenches in and around the earthwork. In his published report, Williams was puzzled, not only by the small size of the earthwork, but more so by the paucity of sixteenth-century artifacts that were found during his testing (Powell 1965:34).

J.C. Harrington undertook the first professional archaeological work at Fort Raleigh National Historic Site (FORA), the official name of the 150 acre park acquired by the National Park Service in 1939. Harrington's surveys in 1947 and 1948 consisted of the excavation of 5-

foot wide trenches across and around the earthwork and other selected areas of the park (Figure 9-1); and in 1950 Harrington excavated the interior of the earthwork and its silted-in ditches (Harrington 1962). Harrington's surveys included approximately 38 five-foot wide trenches which comprised about 3,320 linear feet or 16,600 square feet of excavated ground. The survey recovered musket balls, and sherds of crucible and olive jars, but the paltry number of sixteenth-century artifacts found during the survey – 18 in all -- lead Harrington to conclude that the town site was elsewhere (Harrington 1962:38). Harrington's excavation of the earthwork produced 57 more sixteenth-century artifacts, including 22 olive jar sherds, 3 jettons, and 2 copper nuggets, but the finds were still clearly non-domestic.

Harrington returned to Fort Raleigh in 1965 to excavate what he called -- for lack of a more definitive term -- an "Outwork" that was located just west of the entrance of the earthwork. The outwork, which was thought to have been some type of defensive structure, was first discovered during utility trench construction in 1959. Six years later, Harrington's returned to excavate the area and uncovered a 9' square structure that was manifested by log stains with postmolds at the four corners of the structure and log stains that also extended off two corners of the Outwork. Inside the sunken floor of the Outwork were 3 pits, one of which contained Indian pottery, 16 sherds from a Normandy flask, and several bricks, some of which had been ground or worn to form curved sides. Harrington tentatively suggested that the Outwork was some form of fortification and that the one of the pits might have supported a forge (Harrington 1966). Later, the Outwork would become the inspiration for renewed work in the 1980's and 1990's.

Former FORA Ranger Phillip Evans has been a central figure in research at Fort Raleigh for more than three decades. As the park historian at FORA, Evans' observed that Harrington's Outwork closely resembled the footprint of the rectangular bastions that were part of a 1619 wooden fort at Martin's Hundred that had been excavated in the 1970's by renowned archaeologist Ivor Noel Hume for the Colonial Williamsburg Foundation (Noel Hume 1982). Evans wondered whether Harrington's Outwork was actually the bastion or watchtower of a wooden fort that preceded the construction of the earthwork, an especially tantalizing prospect given a statement made in March 1589 by Pedro Diaz, a Spanish pilot captured by Sir Richard Grenville in 1585 and taken on his voyage back to Roanoke Island in 1586, that the English had built there a "wooden fort of little strength" (Quinn 1991:790). This hypothesis prompted an investigation of the outwork area by the Southeast Archaeological Center (SEAC) of the National Park Service (NPS) in 1982 and 1983 – which by good fortune just happened to coincide with the forthcoming 400th anniversary of the Roanoke voyages in 1984. NPS archaeologists John Ehrenhard, William Athens, and Gregory Komara conducted magnetometer and soil resistivity surveys west of the earthwork in 1982 that located numerous metal targets and soil anomalies that were ground-truthed the following year. However, Raleigh's settlements remained elusive as no features were found that belonged to the sixteenth-century fort or town. But the NPS archaeologists had recovered 38 European artifacts, mostly ceramics that ultimately proved to be sherds of crucibles, Normandy flasks, and tin-enameled ointment pots, and interestingly they were found only in one area -- near the entrance of the earthwork (Ehrenhard, Athens, and Komara 1983, Ehrenhard and Komara 1984).

In 1982, Evans made another significant discovery; this time he found the bottom part of a barrel and a hollow log in the low water along the shore at the north end of the Roanoke Island about 900' from the earthwork. Radiocarbon dating revealed that the barrel dated to A.D. 1285 – 1660 and the hollow log to A.D. 1340 – 1650, thus both objects could date to the time of the

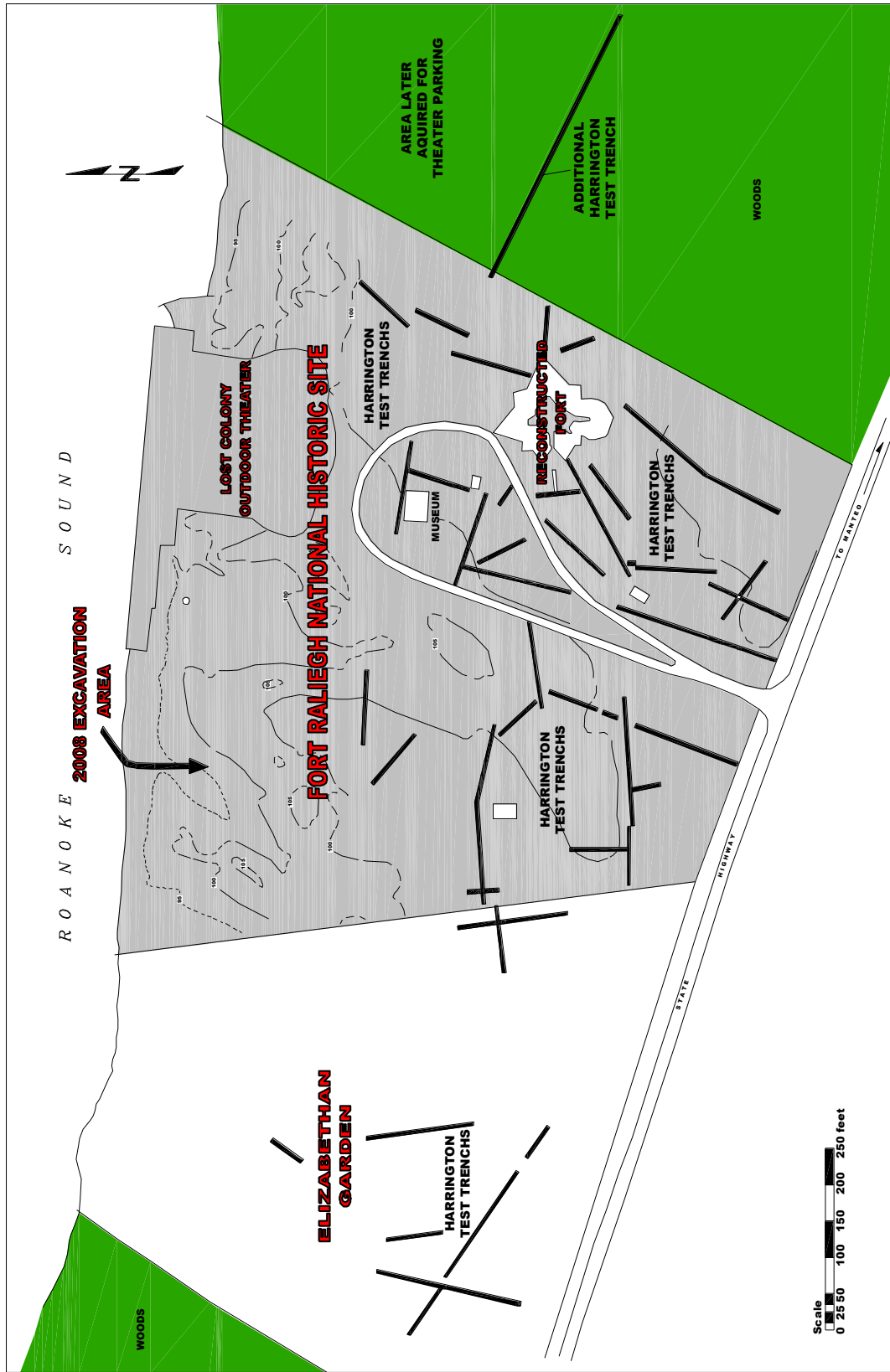


Figure 9-1. Plan of Fort Raleigh National Historic Site showing the locations of Harrington's test trenches.

Raleigh settlements. The barrel is thought to have been the bottom of a barrel-lined well, while two sources have suggested that the log possibly was a Native American corn sheller (Bolling, 2008, Smith 2008). This is the very same area where in years past, sporadic probable sixteenth-century artifacts have been found such as an ax head of sixteenth-century form. Dr. David Phelps also recovered several unidentified “green-glazed” sherds from this area during a 1983 survey of the shallow water of the beach adjacent to the exposed bluff (Phelps 1984). The “green-glazed” sherds, upon later examination, proved to be fragments of Iberian olive jars (Klingelhofer 1984).

So by 1990, there was a hodgepodge of bits and pieces of 16th-century activity at Fort Raleigh, which all in all, still produced a jumbled picture of what happened at the north end of Roanoke Island in the 1580’s and the Raleigh settlements were still nowhere in sight. Part of the Roanoke puzzle, however, was painstakingly pieced together by Ivor Noel Hume after his 1991-1993 excavations at Fort Raleigh, although the results were not what the project intended to find.

Noel Hume organized a project under the auspices of the non-profit Virginia Company Foundation (VCF), an organization devoted to the study of early European settlements in the Chesapeake, to investigate further Phil Evans’ “Outwork-as-fort bastion” theory. Even though most of the Outwork had been destroyed by the early 1990’s, Noel Hume and 4 colleagues were able to relocate the remains of the Outwork in the spring of 1991 thanks to Harrington’s meticulous field records. That fall, Noel Hume with SEAC archaeologist Dr. Bennie Keel led a team of archaeologists, who all had much experience working on early English settlement sites in Virginia, in open area excavations around the Outwork to see if there was any evidence that it was part of a wooden fort.

The 1991/92 VCF excavations opened 32 ten foot squares around the Outwork and 3 ten foot squares inside the earthwork. As the excavation proceeded, much of the ground outside the earthwork was found to be deeply disturbed. The reason for this regrettable situation was aptly described by David Beers Quinn who wrote “between 1895 and 1936 various horrors were perpetrated on the site” (Quinn 1985:385). Some of the horrors alluded to by Quinn include the making of a movie about the Lost Colony in 1921, the physical interpretation of the site in the 1930’s that involved the construction of log cabin houses, a log cabin museum, and a log stockade with all the requisite utility trenches, and still later an asphalt road that once allowed Franklin Delano Roosevelt to drive to the Lost Colony theater.

The VCF excavation uncovered many features, and despite the many modern intrusion, a few postholes that were believed to be Raleigh period. Nonetheless, sixteenth-century European artifacts continued to be recovered, particularly in one small area where a buried “A” horizon survived undisturbed about 30’ west of the entrance to the earthwork (Figure 9-2). Amazingly, this black sand layer, only a few feet from Harrington’s Outwork, contained a concentration of sixteenth-century European and Native American artifacts in situ, mostly ceramics. The total number of ceramics recovered by the VCF excavations included 119 crucible sherds and nine pieces of cupels (small shallow cups used to separate precious metals) that undoubtedly represent metallurgical activity. The remainder of the ceramic finds consisted of only four different types of pottery; 17 tin-enameled ointment pot sherds, 19 sherds of West of England butterpot (butterpots were intimately involved in sixteenth-century metallurgy as it was believed at the time that eating butter prevented lead poisoning), 136 sherds of Normandy flask (a common use of Normandy flasks was as the receiver in distilling operations), and two sherds of Iberian olive jar. Especially significant was a chunk of antimony (an essential ingredient in separating silver



Figure 9-2. VCF excavation of 1585 scientific workshop area with undisturbed “A” horizon in the center of the excavation, facing northeast.

from copper), chemical glassware, and crucible sherds encrusted with copper smelting residue including one crucible sherd with a prill or small bead of copper attached to it.

Noticeably absent from the assemblage were faunal remains and artifacts associated with food preparation, consumption, or storage; indeed there was nothing that could be attributed to the day-to-day living of 100 people. Noel Hume then examined all the artifacts recovered from the previous Harrington and SEAC excavations in the area and found the same thing, all the ceramics found in previous archaeological excavations consisted of sherds of crucibles, Normandy flasks, ointment pots, and Iberian olive jars. The distinctive artifact signature of the combined excavations could not possibly represent a domestic site but rather the finds all pointed to assaying and distilling activities. And contemporary accounts are quite clear that scientist Thomas Hariot and metallurgist Joachim Gans were part of the 1585 colony only and that there were no scientists or metallurgists among the 1587 colony. Consequently, Noel Hume concluded that this area actually was the site of Hariot’s and Gans’ 1585 metallurgical and scientific workshop; and that Harrington’s Outwork was the footprint of a furnace that served the workshop. Indeed, the bricks with curved sides found inside the Outwork likely formed the ring of the glory holes or openings that provided access the metallurgical furnace (Noel Hume 1994a, 1994b, 1995). Of course, if this area is a workshop from 1585, then what is the earthwork? Several explanations have been put forth; that the earthwork was built to protect the workshop, that it one of Ralph Lane’s sconces, that it was built to protect the 15 men left on the island in 1586 to await the arrival of John White’s 1587 colony, that the earthwork does not date to the Raleigh settlements but was constructed in the mid-eighteenth century, and most recently that the earthwork is related to the permanent English settlement of the Albemarle c. 1670.

With the location of the fort and village of the Raleigh settlements still to be found, VCF archaeologists resumed survey work at FORA in 1994 when they conducted area excavations north and west of the earthwork to investigate several posthole-like features that had been recorded during Harrington's survey. The features proved to be nothing more than treeholes and no European or Native American artifacts were found. Sobered by the utter lack of any sixteenth-century artifacts or features in the immediate vicinity of the Hariot/Gans workshop area, the VCF archaeologists moved away from the Hariot/Gans workshop and earthwork and excavated nine 5' squares near the dune ridge to the north and at various locations east and southwest of the earthwork. These too proved to be equally devoid of any recognizable cultural features and again not a single sixteenth-century European artifact was found. But, one 5' square pit excavated about 400' west of the earthwork in the Hariot Nature Trail Woods revealed a buried A layer that yielded 22 sherds of Late Woodland Colington pottery (Figure 9-3), suggesting that this was a land surface that could have dated to the time of the Roanoke settlements (Lucchetti 1996).



Figure 9-3. 1994 test square excavated in the Hariot Woods Nature Trail showing buried "A" horizon, facing south.

The VCF team returned to this area in 1995 for a one-week follow-up survey. Shovel test holes and test squares soon produced more Late Woodland pottery from the buried A horizon; however this time a small number of European artifacts were recovered as well including Iberian olive jar sherds, one small lead shot, a gunspall, and one crucible sherd. While the quantity of artifacts did not indicate that this was this was the site of the fort or village, they did suggest that the buried "A" horizontal was the land surface in the sixteenth century and that the Roanoke colonists did do something, insubstantial as it might be, in this part of the Hariot Nature Trail Woods. The VCF report on their 1994/95 work also presented a simple comparison of the

amount of area excavated and the number and kinds of artifacts recovered from the excavations at Fort Raleigh, the 1604 French settlement at St. Croix, Maine, and the first years of excavations at 1607 Fort St. George, all colonies of about 100 men that lasted about 1 year (Lucchetti 1996). The dramatic differences in the artifact assemblages from the sites underscored the, as yet, absence of a 1585 or 1587 domestic site at FORA. There is virtually a complete absence of domestic artifacts at Fort Raleigh while St. Croix and Fort St. George have relatively large numbers of architectural materials – nails, brick, and daub – as well as much ceramics, glass, animal bone, and shell. Therefore, while the nature of the earthwork remains the subject of much debate, the comparative archaeological evidence supports the conclusion that the site the just outside its entrance excavated by Harrington, SEAC, and the VCF must be the 1585 scientific workshop of Thomas Hariot and Joachim Gans.

There was a lull in archaeological research at FORA although archaeologists Bennie Keel and David Phelps conducted occasional construction area surveys in the 1990's, as they had done during the previous decade with the same results – no evidence of Raleigh's settlements. In 2000, SEAC archaeologists conducted a remote sensing survey of parts of FOR A including the Hariot Nature Trail Woods. Ground penetrating radar (GPR) detected several large subsurface anomalies in the woods along the Hariot Nature Trail Woods, but these features were not able to be tested at the time.

In 2003, a core of VCF veterans established a new organization, the First Colony Foundation (FCF) headed by Phil Evans, as a vehicle to continue historical and archaeological research related to the 1585 and 1587 Raleigh settlements. One of the initial projects undertaken by the FCF provided supplemental funds for NPS research in Spanish archives. In 2005, the FCF signed a Memorandum of Agreement with FORA to continue archaeological fieldwork at Fort Raleigh. That same year, the FCF commissioned Dr. Gordon P. Watts, Jr., to conduct a magnetic anomaly identification and assessment investigation of underwater anomalies that were detected during a 2002 survey of the north shoreline of Roanoke Island and Shallowbag Bay. Not surprisingly, none of the anomalies that were examined dated to the Raleigh settlements period (Watts 2006). Also in 2005, FCF archaeologists investigated a report of features and yet another green-glazed sherd exposed in bluff between the Lost Colony theatre on the east and the Prince House to the west, the same area where the barrel remains and other probable sixteenth-century artifacts had been found in years past. The feature proved to be one more of those exasperating “probably a treehole but it kind of looks like it possibly might have been a posthole 400 year ago” soil stains like those found around the Hariot/Gans scientific workshop and earthwork. Noel Hume identified the green-glazed sherd as coming from a type of an Iberian olive jar made in the late sixteenth century, thus the area north of the parking lot, where artifacts probably related to the Raleigh settlements has been found intermittently on the beach over the past 25 years, continued to be an area of high interest and serious concern.

The prospect of continuing erosion of the bluff along the Prince House Woods has been a major concern of the NPS for decades. A geological study by Robert Dolan and Kenton Bosserman of the north end of Roanoke Island in 1972 documented the severe loss of land in this area; the authors estimated that more than 900' has been lost since mid 19th century (Dolan and Bosserman 1972). Further erosion studies resulted in the construction of granite block revetments along the Dough Cemetery and Waterside Theatre in 1980. Concern over the loss of potential archaeological resources was expressed in 1993 at Roanoke Decoded conference and at a special erosion conference later that year. The 2003 Raleigh National Historic Site Administrative History report also details the more recent development at the north end of the

island which has accelerated erosion of unprotected shoreline (Binkley and Davis 2003). In addition, Hurricane Isabel in 2003 and Hurricane Katrina in 2005, both Category 5 storms, caused significant erosion of the bluff. Accordingly, in 2006, the FCF conducted a 2 week investigation of the Prince House Woods behind the dune ridge that overlooks the exposed bluff.

The purpose of the 2006 FCF project is to determine whether there were archaeological resources - artifacts, features, or strata - associated with the Raleigh settlements in this area that may be endangered by the continual erosion of the exposed bluff. The investigation consisted of excavating of 1.5m test units at 5 meter intervals along a transect that ran parallel to the base of the dune ridge and as close as practicable to the bluff. The survey of the Prince House Woods did not locate any archaeological features associated with Native American occupation or with the Raleigh settlements; nevertheless the survey did reveal that there is a generally consistent stratigraphic sequence throughout the Prince House Woods. Beneath the root mat and humus were various recent sand layers that lay above a typically thick layer of white sand that corresponded with the dune ridge. Under the dune sand was a layer of very dark grey to black sand that constituted a buried "A" horizon, which in turn sealed a layer of light grey or silver grey sand. Like the buried "A" horizon in the Prince House Woods, the buried "A" in the Harriot Nature Trail Woods stratigraphically was immediately below a thick layer of white sand that comprises the existing dune ridge. Based on stratigraphy, the buried "A" horizons in the Prince House Woods and the Harriot Nature Trail are almost certainly the same horizon as the buried "A" horizon that was found in the 1980's NPS and 1990's VCF excavations of the 1585 scientific workshop and earthwork. The 2006 FCF survey did recover 64 Colington sherds, several of which mended and all almost certainly from the same vessel, from the buried A horizon in one test unit. While Colington ceramics are found throughout the Woodland period, it could be argued that the presence of a single Native American vessel was more likely attributable to English use as there is no archaeological evidence of any other Native American activity in the immediate area (Lucchetti 2007).

During the 2006 survey, two collectors brought artifacts they had picked up over the years from the beach along the Prince House Woods. Most of the artifacts were small Native American sherds, but there were two sherds of possible sixteenth-century European ceramics. One was another sherd of Sevillian olive jar and the other was a sherd of London Post-Medieval Redware. Both were quite water-worn, unlike the Sevillian olive jar sherd found in the bluff face or the sherd found in 2006. These sherds could be further evidence of a sixteenth-century landing site, although their context is uncertain. A follow-up 2008 magnetometer survey of the untested dune ridge along the bluff edge located only modern metal debris, confirming the 2006 conclusions that the area was one of light Elizabethan activity, but not occupation or industry. The 2006 project had collected data on elevations and soils, including a profile of the bluff face to compare with that drawn by Phelps's team in 1982, which will help reconstruct the 16th-century landscape at FORA.

Scheduled for 2007, but postponed until January 2008, was the testing of a new remote sensing technology, radar tomography (RT), developed by Witten Technologies Inc (WTI). Four different ground surface types were chosen to gauge the comparative results of RT, in relation to adjacent areas of excavation: parking lot, grass, asphalt drive, and open woodland. The findings for each section of survey were displayed by WTI as two products: a "virtual excavation" of vertical videos descending from 1" to 100" below ground surface; and an overall CAD drawing map showing major anomalies as interpretive features, typically utility features.

The WTI test survey employing RT displayed remarkable clarity of detail, and in 2008, FCF carried out ‘ground truthing’ excavation in three areas of remote sensing. These units verified the accuracy of the RT test, with features accurately located within a few centimeters in plan and depth. WTI is interested in further collaboration with FCF at FORA, and a fuller survey the four acres around the reconstructed Fort Raleigh earthwork is scheduled for later in 2009.

Also in 2008, the FCF launched the largest excavation at FORA since the Noel Hume’s project in the early 1990’s. The objective of the FCF excavation project was to conduct “ground-truthing” test excavations on anomalies of potential archaeological significance located during SEAC’s 2000 GPR survey in the Harriot Nature Trail Woods focusing on two anomalies that were in the same area as the buried “A” horizon that yielded sixteenth-century European artifacts in 1995. In the spring of 2008, the FCF received an inquiry from Time Team USA, the American version of a long-running BBC archaeological series, about the feasibility of conducting a joint archaeological project at FORA. The basis of Time Team USA approach is intensive fieldwork that brings together a large number of specialists and technicians to work on a project for just three days. The fieldwork aspect of Time Team USA projects invariably employ geophysical prospecting to locate features followed by mechanical removal of overburden by an expert machine operator. The Time Team USA archaeological staff then works with the host project institution on the excavation of features. The possibility of a joint FCF and Time Team USA project in the Harriot Nature Trail Woods was proposed to FORA and SEAC who approved the plan contingent upon it adhering to the general research design originally submitted by the FCF.

The 2008 excavation area in the Harriot Nature Trail Woods lies approximately 1200 feet west of the earthwork and about 300 feet south of the beach along Roanoke Sound. A professional survey crew employed by Time Team USA relocated the 2000 SEAC GPR survey baseline and two potential cultural anomalies in the Harriot Nature Trail Woods. The surveyors then established a grid across the area. A professional geophysical prospecting company employed by Time Team USA then conducted a ground-penetrating radar survey of the area. The vicinity of the larger SEAC anomaly was investigated by two adjacent area excavations, Block 1 measured 3 m by 12 m, while Block 2 measured 3 m by 7.5 m. The humus and white sand strata were mechanically removed by a Case compact excavator with a smooth edge bucket. The mechanical excavation did not strip the bottom 6cms of sand that sealed the buried “A” horizon; this was removed by shovel schnitting and troweling. Once the buried A horizon was exposed in the two blocks, each block was divided into 1.5 m squares that were assigned individual context numbers.

Excavation of the buried “A” stratum, a very dark brown to black fine sandy loam yielded over 200 sherds of Native American pottery, one partial Native American pipe, and a small number of European artifacts. The Native American pottery was largely Colington shell-tempered ware, while the temperless straight stemmed “onion bowl” tobacco pipe is similar to other pipes found at Late Woodland through seventeenth-century Algonkian, Tuscarora, and piedmont Siouan sites. A nearly identical pipe was found by Harrington in the earthwork ditch.

The European artifacts recovered from the buried “A” included tobacco pipe bowl fragments from the second half of the seventeenth century, tobacco pipe stem fragments and Pennsylvania-type coarseware from the mid-to-late eighteenth century. Sherds of Staffordshire blackware could date to anytime between c. 1650-1750, while fragments of wrought iron nails could date from the sixteenth century to the early nineteenth century. One sherd of a red

Martincamp costrel was found in the 2008 excavation that almost certainly is associated with the Raleigh settlements. There is no research at this time that definitively shows that red Martincamp costrels were made in the sixteenth century; yet the available evidence strongly suggests that red Martincamp costrels were available in the 1580's. Red Martincamp has been found on only two sites in Virginia, Jamestown and the Second Church at Kecoughtan in Hampton, and in both cases the red Martincamp sherds have come from 1607-1610 contexts. It is noteworthy that no red Martincamp ceramics have been found on any of the numerous sites that date to the 1620's that have been excavated in Virginia.

Numerous features were uncovered in the two blocks, and with rare exception they had the same appearance as the non-cultural features found in the 1990's excavations of the scientific workshop and earthwork periphery. However, two highly significant features were found in one of the excavation blocks. Feature 13 was oval shaped; measuring about 38 cms by 50 cms and appeared as a very light grey (10YR7/1) soil stain. Removal of an Optically Stimulated Luminescence sample tube at the south edge of the feature revealed an oyster shell at the bottom of the light grey sandy fill. Troweling around the oyster shell uncovered a copper alloy square that had a small hole at one end while the opposite corner was broken off – presumably because it had been weakened because it also had a hole. Further excavation of Feature 13, which was no greater than 25 cms deep, revealed 13 more copper plates mixed with some oyster shells (Figure 9-4). Each plate was pierced by holes at opposite corners of the plate, and they were lying corner to corner as if they were strung together to hang like lozenges. Two of the plates also have holes pierced in the center. The plates were of different sizes and apparently were strung with the plates graduated from smallest to largest. The smallest plate measured 19mm by 21mm and the largest measured 32 mm by 34 mm. The copper plates were covered by a dark organic material which microscopic examination indicates may be leather. Preserved by copper salts, the dark organic material was seen only lying on the copper plates.



Figure 9-4. Detail of Feature 13 showing copper plates in situ.

The copper plates were removed in situ on a pedestal of soil. The pedestal was X-rayed at the Colonial Williamsburg Foundation's Archaeological Conservation Department. No other artifacts or objects were detected in the pedestal. Some of the copper plates are being analyzed for their elemental composition, but the results of that testing were not available at the time of this report.

About one-half meter away from Feature 13 was another light grey fine sandy loam filled feature. Feature 16 had comparatively distinct straight edges with right-angle corners, implying that probably is a feature related to the English presence in the area. It was 55 cms north-south, and at least 22 cms east-west and about 28 cms deep; the feature continued into the sidewall of the block and thus it was not entirely exposed. Excavation of the Feature 16 produced 15 white glass beads; the beads did not appear to be strung together as they were scattered throughout the bottom of the feature. Other than a few oyster shells, the only other artifact found in Feature 16 was a copper alloy object that seemed to be either part of a tubular bead or possibly an aiglet.

Since Colington pottery and sixteenth, seventeenth, and eighteenth-century European artifacts were found in the buried A horizon, it seems that the buried A horizon represents the land surface during that time period before agriculture and deforestation resulted in the formation of sand dune ridges on the north end of Roanoke Island. The attribution of Features 13 and 16 presently is uncertain, though ongoing scientific testing and geoarchaeological analysis of the site may provide additional important information. One possibility, given that Iberian olive jar sherds and one crucible sherd were found in the immediate vicinity during the 1995 survey, is that the copper plates and glass beads are related to Thomas Hariot's presence in the area. Alternatively, the features containing copper plates and glass beads might be the result Native American activity on the north end of Roanoke Island in the first half of the seventeenth century. Regardless of the genesis of the two features, one thing seems eminently clear; the paucity of sixteenth-century European artifacts recovered by the excavations in the Hariot Nature Trail Woods indicates that this area cannot be the site of the Raleigh colonists' fort or village.

Nevertheless, the discoveries made by the 2008 FCF excavations have inspired plans for continued archaeological research. The FCF will expand excavations in the Hariot Nature Trail Woods in an effort to determine what this site represents, it will initiate intensive archaeological surveys in other locations at the north end of Roanoke Island that have been suggested as the possible locations of the fort and/or village, and it also will endeavor to locate whatever remains, if anything, of the Indian village of Roanoc. Hopefully, these efforts ultimately will result in a greater understanding of what transpired between the Native American and the English at the north end of Roanoke Island (Figure 9-5).

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