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## ARCHEOLOGICAL EXPLORATIONS AT FORT RALEIGH NATIONAL HISTORIC SITE<sup>1</sup>

By J. C. HARRINGTON

Archeological excavations carried on at Fort Raleigh National Historic Site, Roanoke Island, North Carolina, during the springs of 1947 and 1948 have contributed important evidence that this was the site of Sir Walter Raleigh's ill-fated attempt to establish a colony on the American continent. Over the past few years, nation-wide public attention has been focused on this significant episode in American history by the presentation of Paul Green's symphonic drama, "The Lost Colony." Likewise, the designation of the area as a National Historic Site and its inclusion in the National Park System have increased public interest in the history of the "Citie of Raleigh in Virginia," as well as having brought additional attention to the site itself.

Historians have studied, and restudied, all readily available documentary records dealing with Raleigh's abortive colonizing efforts in North America during the reign of Queen Elizabeth, and a great deal has been written on the subject. But no matter how carefully the records were studied, or how ingeniously the meagre evidence was analyzed in relation to natural features and existing remains, no one could say with certainty that the traditional site was actually that of Fort Raleigh. One might speculate on how the fort was built and what the little village looked like, but no one could go much beyond speculation. In regard to the houses, for instance, there are stray bits of recorded information, one suggesting that the houses had a second story and another indicating that the roofs were thatched.

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<sup>1</sup>The traditional fort site and adjacent land, comprising an area of 16.45 acres, was transferred to the National Park Service of the United States Department of the Interior in 1940, and on April 5, 1941, under provision of the Historic Sites Act, it was designated the Fort Raleigh National Historic Site. By a cooperative agreement between the Roanoke Island Historical Association and the United States, "The Lost Colony" drama may continue to be given each season in the Waterside Theatre at Fort Raleigh.

Thus it is with almost all of the documentary evidence concerning the location and physical appearance of the settlement. One reference, for example, suggests that the town was set apart from the fort, while another indicates that the houses were clustered closely around it. And as to the most intriguing question of all—what took place after Governor White went back to England in 1587—there is only the stark evidence of the word CROATOAN which White found carved on a tree when he returned to Roanoke Island four years later.

It has been quite apparent, therefore, that unless additional historical records are found, many of the questions concerning this episode in American history would have to go unanswered. But there was also the possibility that some evidence might have been left in the ground which archeological excavations would some day reveal. As soon after the war as possible, therefore, the National Park Service began preliminary excavations. In the preliminary explorations conducted at the site during the past two years, it was possible to explore only a portion of the area in which the "Citie of Raleigh" may have been located.<sup>2</sup>

The present article is a brief account of the general results of these preliminary explorations. Usually much more excavating is done before even a preliminary report is prepared, but because of the importance of the information recovered at the site and the uncertainty as to when the excavating can be resumed, it seems worth while to make that information available at this time. The present article, therefore, will not be detailed, as archeological reports go, and considerable information not particularly pertinent or understandable at this stage will be omitted. Nor will I review, to any extent, the historical evidence already presented in other sources. The accompanying diagrams and illustrations have been prepared for the present use and are greatly simplified. Detailed records of soil differences and miscellaneous minor features found in the excavations are not shown, although they are recorded in the field notes and drawings for use when the final study is prepared.

As a necessary background for archeological investigations and for planning and carrying out adequate interpretive development

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<sup>2</sup>The excavations described here were conducted by the National Park Service under the direction of the author, with the assistance of Robert Atkinson, Custodian, Fort Raleigh National Historic Site.

at the site, considerable documentary research had been done by the National Park Service before the war.<sup>3</sup> In addition to the reappraisal of early accounts, maps and records of later periods were studied. These included land records, wills, navigation charts, court records, accounts of travelers, and other sources which might relate to the problem of locating and identifying the site. Results of this research were compiled in manuscript form and later consolidated into a fairly comprehensive history of the site by Dr. Charles W. Porter, III.<sup>4</sup>

The program of exploratory excavating, begun in the spring of 1947 and continued during the spring of 1948, had quite definite but limited objectives. The primary purpose was to determine whether the traditional site was actually that of Fort Raleigh. The second objective was to locate the general area of the village in order that a program for more exhaustive excavating could be planned. The aim of the major excavating project, following the preliminary explorations, will be to learn all that is possible about Fort Raleigh—its houses, the fort, things the colonists used and wore, and if possible, what happened to the colony left there by Governor White in 1587.

The first step toward preserving and commemorating the site was taken in 1893 with the formation of the Roanoke Colony Memorial Association and its acquisition of the property the following year. In 1895 Talcott Williams carried on some archeological explorations for the Association, of which more will be said later, and in 1896 the traditional fort ruins were surveyed and outlined with stone markers.<sup>5</sup> In 1932 the Roanoke Island Historical Association was organized, and during the next few years, with Federal aid, a series of log buildings and the water-side theatre were constructed. Also at this time a stockade and log blockhouse were erected at the fort site, but these have since been removed. The trench for the stockade, which extended more than four feet into the ground, and the stone footing for the blockhouse naturally cause some damage to the fort remains.

<sup>3</sup> This research was made possible through the programs of the Civilian Conservation Corps and the Works Progress Administration, and was carried on largely by Dr. Charles W. Porter and Dr. Frederick Tilberg of the National Park Service.

<sup>4</sup> Charles W. Porter, III, "Fort Raleigh National Historic Site, North Carolina: Part of the Settlement Sites of Sir Walter Raleigh's Colonies of 1585-1586 and 1587," *The North Carolina Historical Review*, XX (1943), 22-42.

<sup>5</sup> For a report on Williams' explorations and a description of the ruins in 1895, see Talcott Williams, "The Surroundings and Site of Raleigh's Colony," *American Historical Association, Annual Report*, 1895, 47-61. Of the twenty-four granite markers outlining the fort, nine remain, eight of which are in their original location.

The site is heavily wooded, a fact which seriously hampers the archeological work and explains the apparent haphazard location of the exploratory trenches. The presence of roads and buildings also affected the location of the trenches. Except for sand dunes, the area is fairly level, ranging from ten to thirteen feet above the level of normal high tide in the sound. The dunes are relatively small, the highest rising twelve feet above the normal ground level. One dune, on which the log chapel stands, extends inland some 700 feet. This dune, as well as the ones along the shore, may occupy a part of the original village site. This imposes a serious excavating problem, particularly since the recent archeological work has demonstrated that the dunes are of a later period than the settlement.

Figure 1 shows the principal features at the site and the location of exploratory trenches excavated in 1947 and 1948. In beginning the archeological work, it was desirable to locate as early in the excavating as possible something tangible, that is, something unquestionably associated with the settlement. It seemed logical that if the traditional fort site could be authenticated, we would not only know that we were actually dealing with the original site, but would have some definite basis for further exploratory work. The first trench, therefore, was located across what appeared to be the remains of the southern bastion of the fort. The exact position of this trench, as well as later ones, was affected to some extent by the presence of trees. The principal reason for choosing this particular bastion was the statement by Talcott Williams that he had sunk no test trenches there during the 1895 excavations.

As hoped for, definite remains of a fort were found in this first trench in the form of a ditch, apparently belonging to a military earthwork. It was realized that additional explorations at the fort would be required, even at this preliminary stage, but in the hope of securing some definite indications of the village site, trenches were next extended out from the fort in three directions. One series was run southwest to the public highway, one toward the northeast to the edge of the sand dunes along the shore, and the third northwestward toward the chapel, altogether some 800 feet of trenches.

It was considered not impossible that positive evidence of the village site might be encountered in one of these first trenches, either house remains themselves or ashes and refuse indicating the presence of nearby house remains. It was also reasoned that if the village lay in this general location and had been surrounded by a palisade, evidence of the palisade might be found in one of these radial trenches. However, no habitation remains and no evidence of a palisade were found in this first series of trenches. The only important find was the charcoal pit in the trench running southwest from the fort, which will be described in more detail later. This trench, and the one toward the shore, were extended into the fort, and additional sections of the fort ditch were found thereby. From the information secured on the fort during the first season's work, we were fairly certain that this was, beyond any reasonable doubt, the remains of Ralph Lane's fort. It was decided, therefore, that the orientation of the fort, particularly the location of the entrance, might furnish a clue as to the location of the village.

Trenches were then placed so that the maximum information concerning the plan of the fort could be obtained with a minimum of digging. Most of our hypotheses were sound, and critical points on the fort, as well as the entrance, were located by means of five additional test trenches. Location of the entrance suggested that the remaining time might best be spent in exploring thoroughly the area directly in front of the entrance, that is, to the west of the fort. This led to the excavating of several trenches in the area immediately west of the fort ruins, in which an area approximately 150 feet square was rather thoroughly explored. At the same time a series of trenches was extended straight west from the fort across the sand dune on which the log chapel stands. This series was excavated, not only to look for remains of the village, but to determine, if possible, the age of the sand dune.

When the work was resumed in 1948, exploratory trenching continued in the area outside the fort, but at a greater distance. With the excavation of some 2,300 feet of trenches the second season, all of the 16-acre government tract was explored, with the exception of the sand dune areas along the shore. In addition, one trench was run eastward from the fort nearly 500 feet.

In conjunction with this search for evidence of the settlement, additional excavating was carried on at the fort. During the first season, only enough work was done to determine the general nature of the fort. The work of the second season uncovered critical points along the fort ditch, sufficient to show the entire plan of the fort. No additional cross sections were made through the fort ditch, the trenches extending down only a foot or so in most instances. Nor was any more of the interior of the fort investigated during the second season.

### THE FORT

I know of only four specific references in the records indicating that a fort had been built by the Raleigh settlers on Roanoke Island. A fifth mentions plans to build a fort and houses. Ralph Lane sent a letter to Richard Hakluyt "From the New Fort in Virginia, this third of September, 1585."<sup>6</sup> This was little more than a month after the colonists landed on Roanoke Island. A second direct reference to a fort is found in Lane's account of a plot by the Indians to burn the settlement, of which he says that all the houses were to be set on fire, "and that as well for them at the fort, as for us at the towne."<sup>7</sup> Hariot, in writing about the sources of iron in the new territory, records that one was located "sixe score miles from the Fort or place where wee dwelt."<sup>8</sup> A fourth reference is contained in John White's description of the ruins found when he returned to Roanoke Island with a new band of settlers in 1587. The pertinent sections of the account are as follows: "The three and twentieth of July the Governour with divers of his company, walked to the North ende of the Island, where Master Ralfe Lane had his forte, with sundry necessary and decent dwelling houses, made by his men about it the yeere before. . . . When we came thither, we found the fort rased downe, but all the houses standing unhurt, saving that the neather roomes of them, and also of the forte, were overgrown with Melons. . . ."<sup>9</sup>

A fort is mentioned on another occasion in the testimony given to the Spanish at St. Augustine, Florida, in 1600 by Darby

<sup>6</sup> Richard Hakluyt, *The Principal Navigations, Voyages, Traffiques and Discoveries of the English Nation* (16 vols., Edinburgh, 1890; E. Goldsmid, ed.), XIII, 301.

<sup>7</sup> Hakluyt, *Navigations*, XIII, 316.

<sup>8</sup> Thomas Hariot, *A Brief and True Report of the New Found Land of Virginia* (facsimile reproduction, William L. Clements Library, 1931), paragraph headed *Iron*, B3.

<sup>9</sup> Hakluyt, *Navigations*, XIII, 362-363.

ROANOKE

SOUND

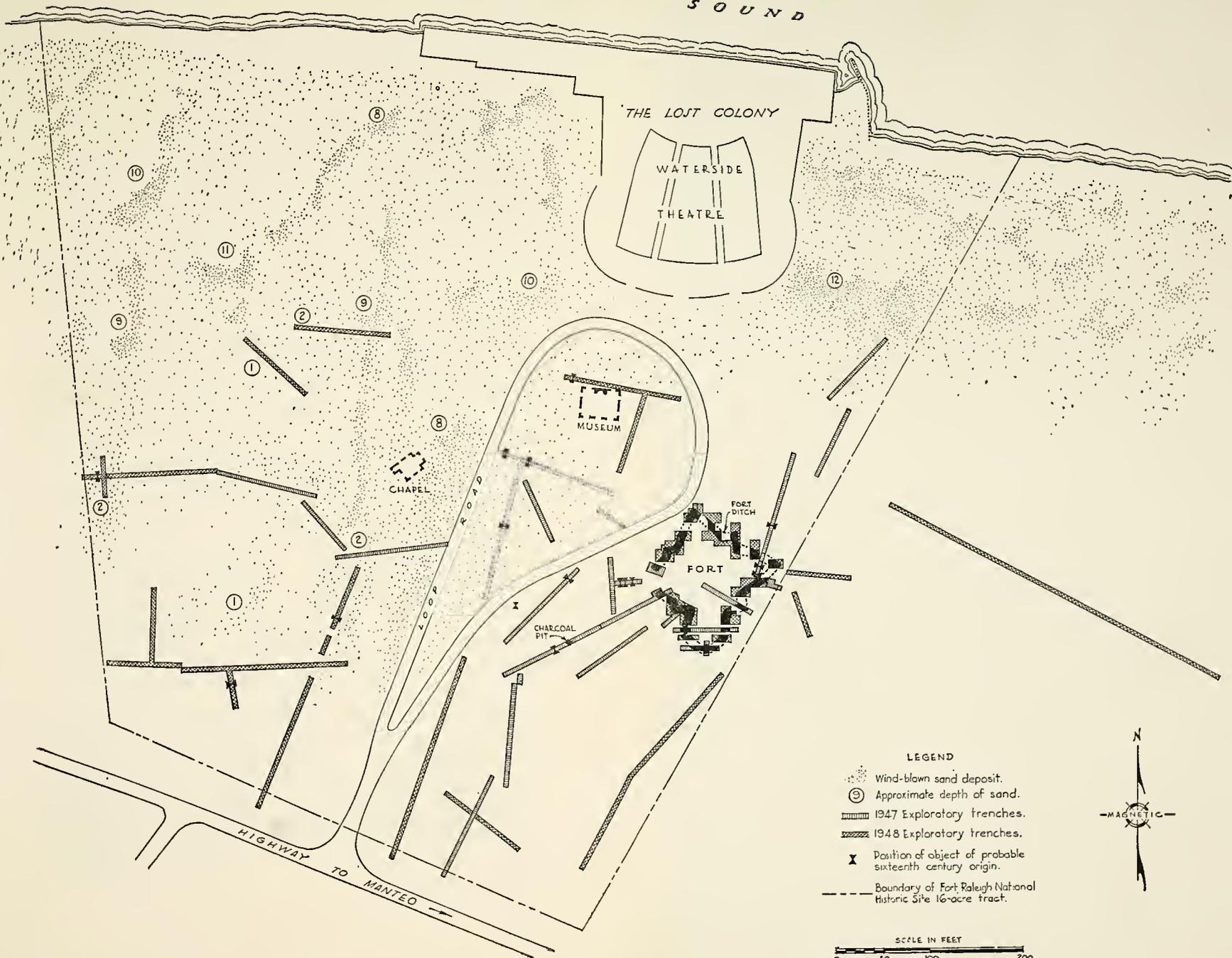


FIGURE 1  
 MAP OF FORT RALEIGH NATIONAL HISTORIC SITE, ROANOKE ISLAND, NORTH CAROLINA, SHOWING THE LOCATION OF THE FORT RUINS AND THE EXPLORATORY TRENCHES EXCAVATED IN 1947 AND 1948



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Glande, one of the settlers of the 1585 enterprise. He is reported to have stated that as soon as the colonists landed "they began to make brick and fabric for a fort and houses."<sup>10</sup> Although there is no reason to question the evidence, it states only that the colonists *began* to make brick and does not furnish information as to the quantity of bricks made, nor that they were used in the actual construction of a fort and houses. There is also the possibility that the bricks were planned for structures within the fort rather than for fort construction proper.

Although these references furnish indisputable evidence that a fort existed at the "Citie of Raleigh," they are not specific concerning the location, size, or method of construction of that fort. It can be inferred from the account of the frustrated plot to set fire to the thatched roofs of buildings "at the fort, as for us at the towne," that in March, 1586, at least one building with a thatched roof stood within the fort. When the second group of settlers arrived in July, 1587, they found the fort "rased downe." This account states further that on the same day every man was ordered to repair the ruined houses and to build other "new Cottages, for such as should neede."<sup>11</sup> It is probably significant that no mention is made in this account of rebuilding the fort. From what we know now as to the probable construction of the fort—a small earthwork with ditches and earth embankment—the statement that the fort was "rased down" is not clear. It may have referred to a building, or buildings, originally standing within the fort, which other evidence would indicate had existed. It is also possible that this statement referred to a palisade, or to brick or timber construction in connection with the embankment of the fort.

When John White's relief party finally returned in 1591 (new style), no mention is made of a fort. The record states that "we found the houses taken downe, and the place very strongly enclosed with a high palisado of great trees, with cortynes [curtains] and flankers very Fortlike."<sup>12</sup> This reference is somewhat ambiguous, but it would seem to indicate that the entire

<sup>10</sup> General Archives of the Indies, *Audienca* of Santa Domingo—Letters of the Governors of Florida, 1568-1611, extract of a letter of Gonzalo Mendendez de Canco to Philip II, June 28, 1600, Case 54, Drawer 5, file 9, Seville, Spain; translated by Katherine Reding and printed in the *Georgia Historical Quarterly*, VIII (1924). The name also appears as Glauin, Glauf, and Glavid.

<sup>11</sup> Hakluyt, *Navigations*, XIII, 363.

<sup>12</sup> Hakluyt, *Navigations*, XIII, 383-384.

village, rather than just a small fort, was enclosed with a palisade.

Nor do later maps and descriptions help us much in locating the fort and determining its original appearance. The first indication on a map of a fort in this vicinity is found on the Collet Map of 1770.<sup>13</sup> John Lawson, however, had mentioned visiting the ruin in 1709,<sup>14</sup> but it is not until Edward Bruce describes his visit of 1860 that we have a description of the ruins.<sup>15</sup>

Then in 1895, two years after the Roanoke Colony Memorial Association was formed, Talcott Williams explored and described the ruins. This was the first time the site had been explored archeologically, but, unfortunately, Williams' notes and records are lost. According to his published report, he dug thirteen trenches at the fort, most of them three by five feet in size and from four to nine feet deep.<sup>16</sup> He states that these test trenches were excavated inside the fort and not in the embankment or ditch. It is of interest, in this connection, that of the previous excavation trenches encountered in the recent work, one was near the center of the fort, while several were squarely within the old ditch fill, which Williams failed to recognize.

Williams reports finding a typical humus layer of six to eight inches, below which was a layer of "black, ashy earth, containing many fragments of charcoal and frequent fire pits. This layer rested directly on undisturbed sand, often penetrated by fire pits. . . . Toward the base of the black, ashy layer were found small pieces of iron, a corroded nail, a chipped piece of quartzite, and some small fragments of Indian pottery, networked. . . . For a site occupied at it was, the place proved singularly barren of debris."<sup>17</sup> Conditions somewhat similar to those described by Williams were noted in the recent excavations. His "fire pits" were undoubtedly the rotted and charred remains of tree roots, and his "small pieces of iron" were possibly the rusty appearing concretions found through the subsoil. These natural formations are commonly mistaken for iron. Williams' failure to observe the fort ditch when encountered is not surprising, since the soil

<sup>13</sup> *A Compleat Map of North Carolina from an Actual Survey*, by Captain Collett, Governor of Fort Johnston (London, 1770).

<sup>14</sup> John Lawson, *A New Voyage to Carolina* (London, 1709), 62.

<sup>15</sup> Edward C. Bruce, "Loungings in the Footprints of the Pioneers," *Harper's New Monthly Magazine*, XX (May, 1860), 721-736.

<sup>16</sup> Williams, *Surroundings*, 59.

<sup>17</sup> Williams, *Surroundings*, 59.

distinction is not always too obvious, and good archeological work can never be done in trenches as small as three by five feet.

Williams mentions the digging done by some Federal soldiers stationed on Roanoke Island in 1863.<sup>18</sup> According to his report, they apparently dug some holes at the eastern side of the ruins but were stopped by the owner before any great damage was done. With the two exceptions noted above, there is no record of the site having been disturbed until the palisade and blockhouse were erected in 1936.<sup>19</sup>

It is too early to give a detailed description of the fort, but the evidence uncovered so far is of interest and is sufficient to show the original shape and appearance of the structure (see Figures 2, 4, and 5). It is anticipated that complete excavation of the ruins will reveal many other details of the fort's construction and possibly remains of structures within the fort. The preliminary exploration, however, showed that the fort was a small earthwork with surrounding ditch. These excavations have also been of value in determining the best method of completing the excavations and in suggesting ways of treating the site for interpretive purposes.

Sections through the fort ditch were obtained at five points. In addition, the ditch was located in plan at all critical points, permitting the entire plan to be projected, as shown in Figure 2. The structure was basically a square with bastions on three sides and an entrance on the fourth. The clear space inside the parapet was not over sixty feet square. The sides of the fort were oriented approximately with the compass, the entrance facing almost due west. The two bastions facing the shore were triangular, while the third, facing inland, was "reniform" in shape, and noticeably unsymmetrical. Possibly a powder magazine or some other structure was located within this rounded bastion.

The sides of the original ditch, and probably the parapet as well, had a relatively steep slope and would have eroded very rapidly. The fill in the bottom of the ditch was found to be relatively pure subsoil material with little or no topsoil ad mixture.

<sup>18</sup> Williams, *Surroundings*, 58.

<sup>19</sup> Local residents informed me that grading for a highway a few years ago extended up to the fort ruins from the south, possibly disturbing the south bastion. There are surface indications of a road a short distance to the west of this location. Apparently the grading operation was done in connection with relocating this earlier road which had served for many years as the main entrance to the site.

This would indicate that the light yellow sand, characteristic of the subsoil, had been thrown up last on the parapet, and was the first to be washed back into the ditch. This process of erosion must have started very soon after the fort was built, before any humus layer had developed in the bottom of the ditch or on the parapet. Contemporary instructions for building small earthworks called for sodding the faces of the parapet, but this would have been difficult to carry out at Fort Raleigh, because of the sandy soil of that locality.

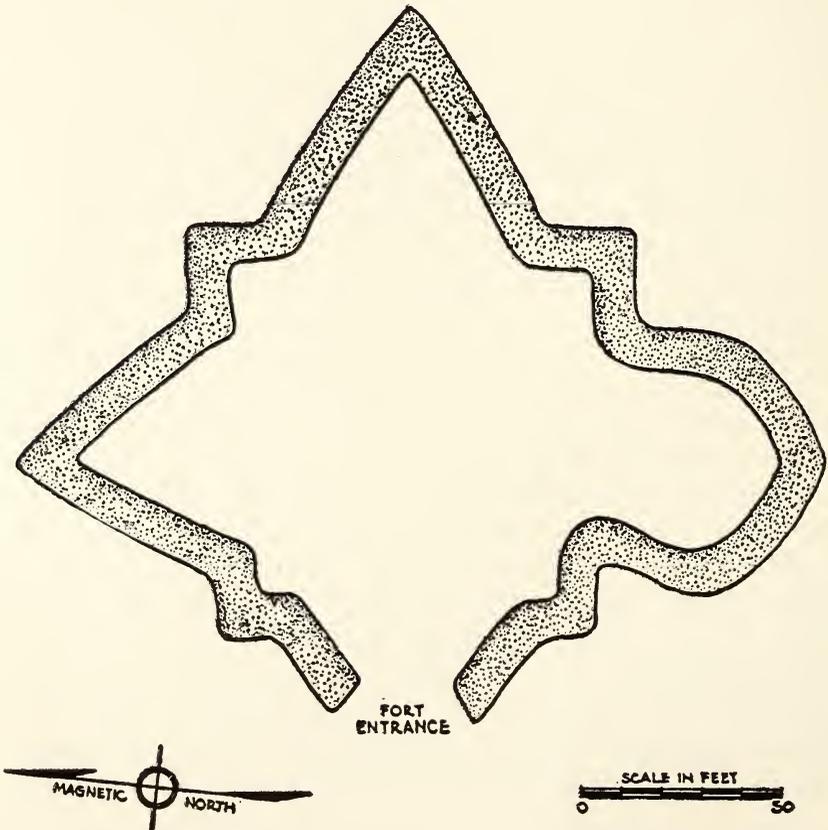


FIGURE 2

PLAN OF THE DITCH OF THE FORT RUINS AT FORT RALEIGH NATIONAL HISTORIC SITE, AS REVEALED BY ARCHEOLOGICAL EXCAVATIONS.

After the ditch had partially filled in, there is evidence that further filling took place rather slowly. The fill in the upper layers is mixed with topsoil, and in places these darker humus deposits are roughly crescent-shaped, showing slow accumulation from leaf mould and other natural soil action. Eventually the parapet had washed down to within a foot or so of the original ground, and the ditch had filled up correspondingly. This, roughly, was the condition of the ruins when observed by Bruce in 1860 and by Williams thirty-five years later. The condition of the ditch fill, showing slow accumulation from natural causes over a relatively long period of time, is strong evidence of the fort's antiquity. Civil War earthworks on Roanoke Island, although abandoned for over eighty years, show no such erosion.

Of the few objects found in the excavations at the fort, none was in a position which would definitely associate it with the period of the fort's construction and use. Very little was found in the ditch fills, and all of it must have been deposited there after the fort came into disuse. Two large sherds of Indian pottery were found in the ditch fill, 1.0 feet and 2.2 feet, respectively, above the bottom of the ditch. This pottery might have been in the earth originally thrown up from the ditch and later washed back in again. Of European material, only two fragments were found at a depth which would suggest that they might have been deposited while the ditch was filling up from erosion of the parapet. One is a fragment of hand-made brick, found 2.5 feet above the bottom of the ditch; the other an unidentified piece of iron found 1.3 feet from the bottom. Only one dimension on the brick is available, the thickness, which is  $2\frac{1}{4}$  inches. This happens to be the thickness of bricks required by English statute at the time of the Roanoke Island settlements. It must have found its way into the ditch fill at a fairly early date, and may very well have come from one of the settlement's structures. The hand-wrought iron object is a thin, flat blade or strap, two inches wide. The portion found, apparently only part of the original, is seven inches in length.

The only other objects encountered, except occasional sherds of Indian pottery and a few small nondescript iron fragments near the surface, were seven large, handwrought iron spikes found in the northeast bastion about four inches below the present

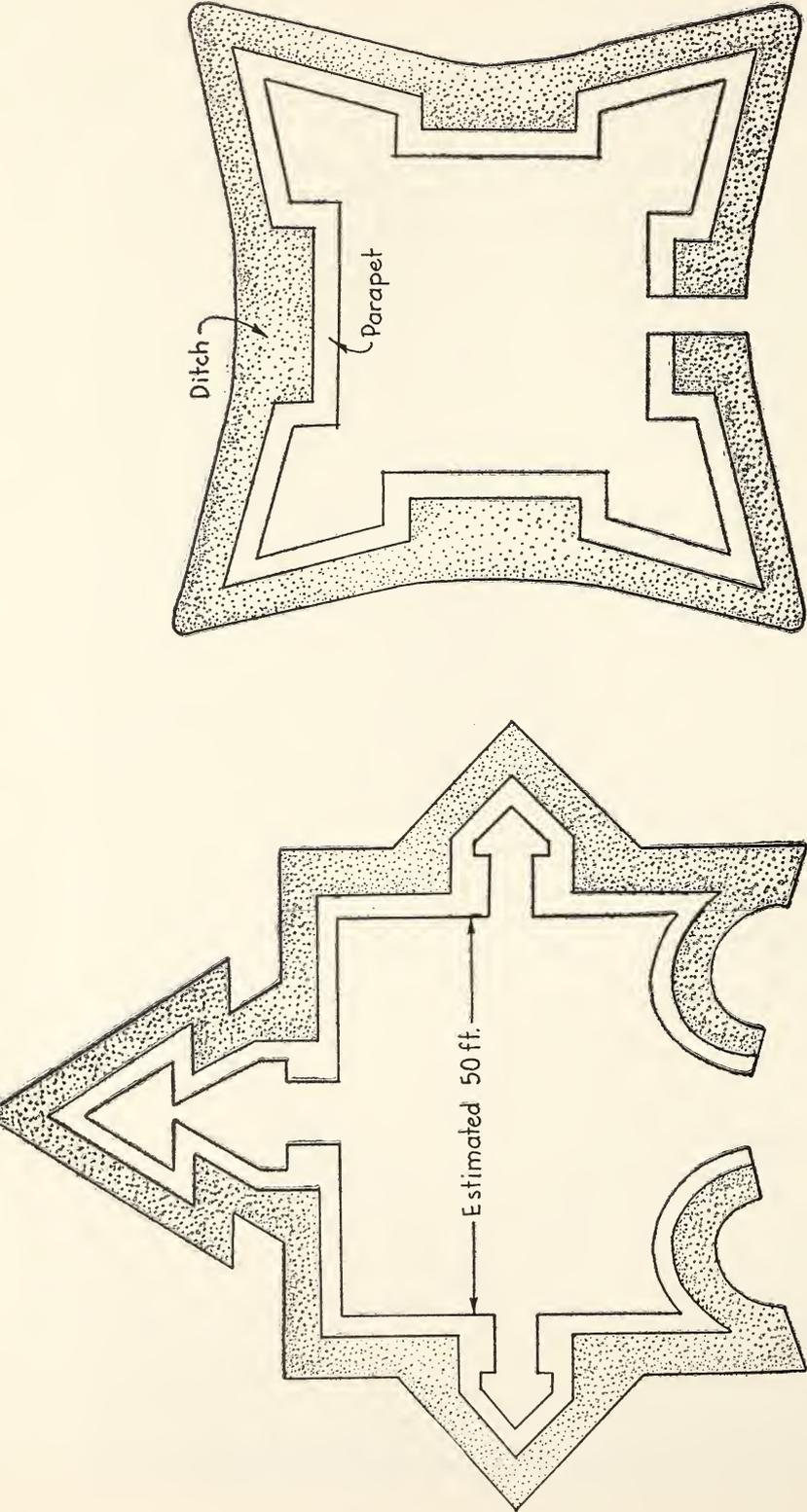


FIGURE 3

RALPH LANE'S FORT ON ST. JOHN'S ISLAND (PUERTO RICO) COMPARED WITH CONVENTIONAL BASTIONED FORT OF SIMILAR SIZE AND CONSTRUCTION.  
 A. SIMPLIFIED COPY OF JOHN WHITE'S WATER COLOR SKETCH, LABELLED BY THE ARTISTS "THE FORME OF A FORT WHICH WAS MADE BY MR. RALFE LANE IN A PARTE OF ST. JOHNS ILANDE NEERE CAPROS WHERE WE TOKE IN SALT THE XXVITH OF MAY, 1585."  
 B. TYPICAL SMALL, FOUR-SIDED EARTHWORK OF THE PERIOD.

surface. They were in a cluster as though deposited in a bundle. They are badly rusted, but appear to have been approximately seven and one-half inches long and one-half inch square just below the head, tapering uniformly to a flattened point. In brief, very little cultural material was found at the fort ruins, and none under conditions which would prove the ruins to be those of the Lane fort.

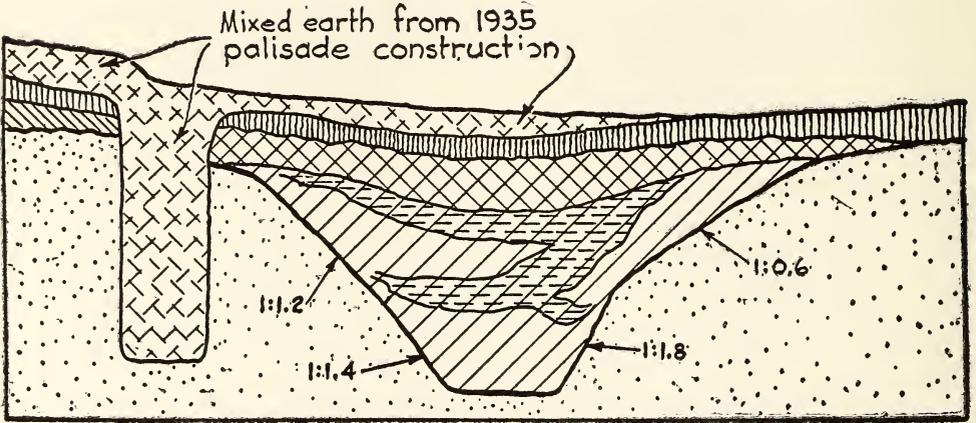
The strongest evidence in favor of this ruin being Lane's fort of 1585 is its distinctive plan. Although I have referred to *bastions* in describing the remains, these may very well have not been true bastions with flanks. All we have to go on at present is the shape of the ditch. If the parapet followed the ditch outline exactly, then the fort was a modified *star fort*. In this case, the structure might be described as a star fort, formed on a square, having large angles on four sides with small angles between, and having the entrance at the point of one of the large angles.

Even though star forts were constructed at the period of Fort Raleigh, they were not looked upon with favor by military engineers for the lacked the flanking defense afforded by the bastioned fort. As early as 1585, the formal bastioned fort had come into use, although the period of great systematization came somewhat later, particularly with the work of Vauban and others of his day. The method of building bastioned forts must have been known to Lane, but it would appear that he favored forms derived from the star-fort design. One manual of that day, written by Paul Ive, and published in London in 1589, is very explicit as to materials, form, and use of forts.<sup>20</sup> The bastioned forms shown in Ive's handbook (Figure 3-b), which are recommended for small earthworks, are quite unlike the fort on Roanoke Island.

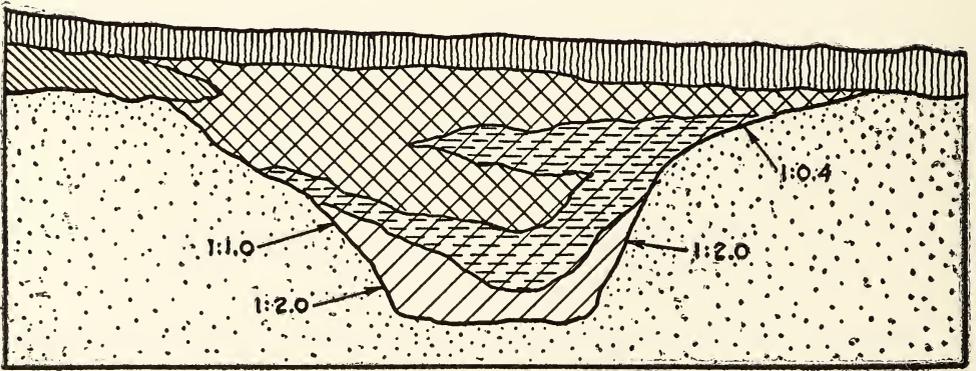
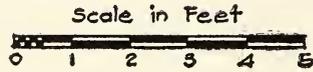
Other works of that period gave similar instructions for constructing small earthworks, and the term "sconse" or "skonse" was often employed for fortifications of this type. This recalls Lane's letter in which he proposed to build sconses at two-day march intervals along the route to the Chesapeake Bay region.<sup>21</sup>

<sup>20</sup> Paul Ive, *The Practise of Fortification* (London, 1589). Several fortifications erected about this time are of particular interest for comparative purposes. Among them are Fort Caroline in Florida (1564); Grenville's fort in Puerto Rico (1585); Lane's fort in Puerto Rico (1585); Fort St. George in Maine (1607); and Jamestown, Virginia (1607). A contemporary plan or description is available for each of these.

<sup>21</sup> Hakluyt, *Navigations*, XIII, 305-306. Lane wrote that at the head of the river [sound] he would raise "a sconse with a small trench, and a pallsado upon the top of it, in the which, and in the guard of my boates I would have left five and twentie, or thirtie men," and that similar sconses would be raised at intervals along the route.



← Fort



- |  |  |  |   |              |
|--|--|--|---|--------------|
|  | Humus and topsoil.                         |  | Light brownish sand; similar to subsoil.    | } Ditch fill |
|  | Light grey sand with streaks of dark grey. |  | Similar to above, with some mixed earth.    |              |
|  | Yellow-brown subsoil.                      |  | Dark sandy deposit; mostly humus & topsoil. |              |

FIGURE 4

TYPICAL CROSS SECTIONS THROUGH OLD FORT DITCH AT FORT RALEIGH NATIONAL HISTORIC SITE, SHOWING SHAPE OF ORIGINAL DITCH AND NATURE OF DITCH FILL.

Lane's high regard for the defensive worth of the sconse, properly located, is indicated in his letter to Secretary Walsingham, written while he lay at anchor off the coast opposite Roanoke Island. Referring to the advantages of a certain inlet, he states that this inlet, "if fortified by a sconse, could not be entered by the whole force of Spain."<sup>22</sup>

Of special interest in this respect is the fort built by Lane at St. John's Island (now Puerto Rico) on his way to Virginia, as recorded in one of White's drawings (Figures 3 a). This fort—or perhaps Lane would have called it a sconse—was built as a temporary protection from the Spanish while the English colonists were gathering salt.<sup>23</sup> No scale is shown on White's sketch, but judging from the size of the people and a small boat, the fort was apparently similar in size to the earthwork on Roanoke Island. The distinctive thing about this St. John's fort was its plan—a square with bastions on the sides rather than at the corners.

White shows one odd-shaped bastion in the Puerto Rico fort, with a sort of "arrow-head" plan. It is possible that this is the artist's conception of a leaf-shaped form, such as the southeast bastion of the Roanoke Island fort. Likewise, the entrances of both forts may have been more similar than White's drawing would indicate.

Although the St. John's fort, as represented in White's sketch, has bastions of a sort, it is not a bastioned fort in the true sense, and basically is similar to the fort on Roanoke Island. The similarity of these two structures is the strongest evidence we have thus far for identifying the one on Roanoke Island as the fort built by Ralph Lane for the first Virginia colony.<sup>24</sup>

Post-settlement accounts of the site are not sufficiently detailed, or precise as to location, positively to identify the traditional site. A fort in this location first appears on the 1770 Collet map, which eliminates the possibility of its having been built during the

<sup>22</sup> *Calendar of State Papers, Colonial Series, 1574-1660*, 3.

<sup>23</sup> The official record of this episode is as follows: "The 26. day our Lieutenant Master Ralph Lane went in one of the Frigats which we had taken, to Roxo Bay upon the Southwest side of Saint John, to fetch salt, being thither conducted by a Spanish Pilot: as soon as hee arrived there, hee landed with his men to the number of 20. and intrenched himselfe upon the sandes immediatly, compassing one of their salte hills within the trench." Hakluyt, *Navigations*, XIII, 295-296. White's sketch, however, shows what appears to be two salt hills.

<sup>24</sup> To Dr. Charles W. Porter should go the credit for first suggesting the comparison of these two forts built under the direction of Ralph Lane as possibly the surest way of identifying the ruins on Roanoke Island. He called attention to a general similarity between the two, suggested by comparison of the 1896 survey and the White sketch. (Porter, "Fort Raleigh," 29.)

Revolutionary War. There is no record of military activity in this vicinity prior to 1770, although there is evidence that a town, with fortifications to defend it, was planned for Roanoke Island early in the eighteenth century.<sup>25</sup> The location, apparently, was to have been approximately that of the present town of Manteo, but later maps and land records would indicate that the plan for building the town and fortifications was never carried out.

Weighing all available evidence, therefore, it would seem that the case for the ruins at Fort Raleigh being those of the fort built by Lane in 1585, which tradition has staunchly maintained throughout the years, is too strong to longer doubt.

One wonders why the fort was located some 500 feet inland, whereas the one at St. John's Island was built directly on the shore. The answer is quite obvious. The St. John's fort was built to protect the Englishmen from Spaniards, already on the island, while the salt hill was being looted and the salt loaded on their ship, anchored off shore. At Roanoke Island, on the other hand, the settlers were concerned with Spaniards who might approach from the water. Obviously, the fort was not constructed to provide protection from the Indians. Even as undermanned as the settlement was, the English did not look upon the "savages" as worthy military antagonists. They certainly realized that an earthwork with a few cannon would be quite ineffective against an enemy that hid behind trees, shot fire brands into the thatched roofs of their houses, and attacked without warning in the night.

There is evidence that the shore line has changed perceptibly during the past three centuries, although the shore directly opposite the fort may have been in about the same position as at present. Apparently considerable erosion has taken place westward from the site. There is also evidence that the present cove, toward which the northeast bastion of the fort points, did not exist in its present form in earlier times. It is difficult to say just what the shape of the shore line was in 1585, but it seems likely that there was a slight indentation opposite the fort site. This would explain not only the indentation shown on White's map in this general vicinity, but also the orientation of the fort. Guns in the two pointed bastions would have controlled nearly half a mile of shore line opposite the fort. In this position the

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<sup>25</sup> Porter, "Fort Raleigh," 40.

little earthwork could have dealt quite effectively with landing parties from Spanish ships. This important problem of the configuration of the shore line during the time of the settlement obviously calls for further research.

From the archeological evidence thus far secured, some conclusions can be drawn as to the original appearance of the fort. The ditch appears to have been about five feet deep and from ten to twelve feet across at the ground level. A hypothetical section through the ditch and parapet is shown in Figure 5.

The excavating thus far has revealed no evidence of a stockade laid against the scarp (logs laid vertically against the fort side of the ditch), which was sometimes done when soil conditions required. Likewise, there may well have been a berm (level space between toe of parapet and top of ditch), in view of the sandy nature of the soil and the difficulty that would have been encountered in adequately sodding the slopes.

Excavations have thus far revealed none of the features found in more elaborate defensive works, such as a "covert way," "place of arms," or "palisade," in the area outside the ditch, and it is doubtful if such features would have been used in so simple a structure. Nor was there conclusive evidence of a "glacis" (slight elevation at top of outer edge of ditch), although this feature may well have been used.

The excavating thus far has not been sufficient to determine any details concerning the original parapet. There was probably a "banquette" (firing step) along the inside of the parapet, as shown in Figure 5. The outer slope of the parapet, normally sodded on works of this sort, may have been faced with logs, but almost certainly brick or stone was not used. The number and location of embrasures for the guns will probably never be known, although further excavating inside the fort may reveal the location of timber gun platforms.

The fort undoubtedly had some sort of feature for protecting the entrance ("ravelin"), although the one trench extending west from the entrance revealed no evidence of such a structure. It could well have been a simple breastwork, without ditch or palisade, in which case all remains would likely have disappeared.

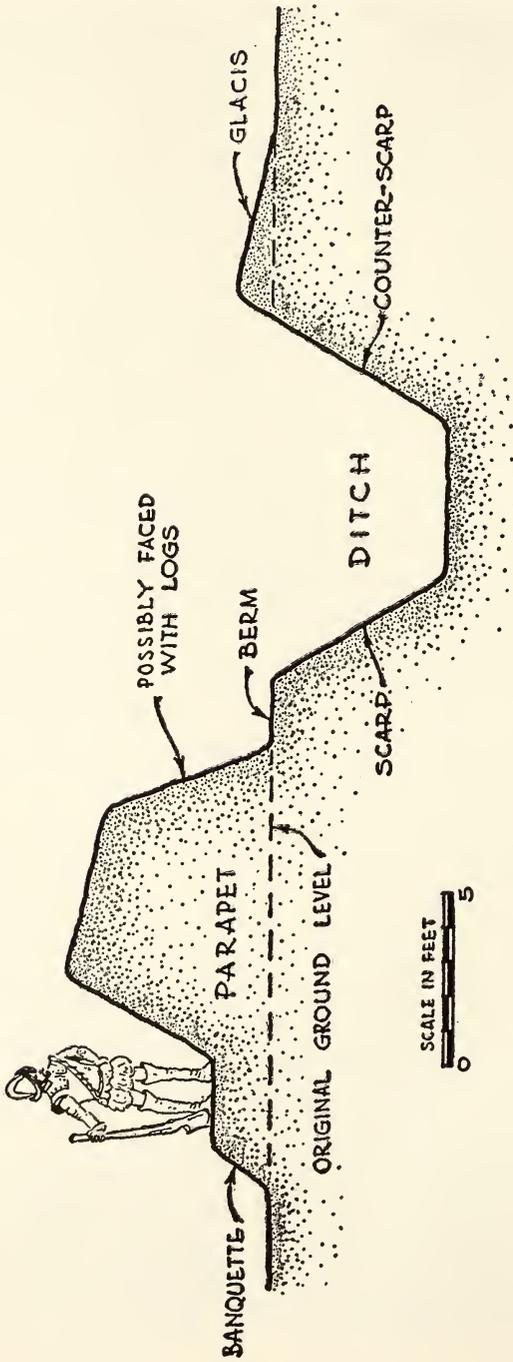


FIGURE 5

SECTION THROUGH PARAPET AND DITCH OF SIMPLE TYPE OF EARTH WORKS OF THE FORT RALEIGH PERIOD, SUGGESTING POSSIBLE APPEARANCE OF THE FORT CONSTRUCTED BY THE RALEIGH COLONISTS ON ROANOKE ISLAND.

Within the fort there was at least one thatched building, as previously mentioned. This may have been a storehouse or quarters for the garrison. There would likely have been a powder magazine and a well, both of which should be found when further excavating is done.

#### THE VILLAGE

Although some 4,000 lineal feet of exploratory trenches were excavated outside the fort, no physical remains of settlers' homes were found, nor was there encountered sufficient building or household refuse to indicate the proximity of a habitation area. The fact that no visible remains of houses were found is not surprising, even though the exploratory trenches may have crossed the settlement area. The buildings were certainly constructed of impermanent materials and were probably built directly on the ground.<sup>26</sup> In spite of the presence in the colony of brickmakers and masons and in spite of the Irishman Glande's testimony, it is doubtful if bricks were made and used in any of the houses at Fort Raleigh. Moreover, the Indians, who were in the region for at least a hundred years after the settlement was abandoned, would have carried away almost anything they might have found on the ground.

Even though relatively little habitation refuse was found in any of the trenches, it is true that more was found immediately to the west of the fort. The trenches north, east, and south of the fort were completely sterile. In view of the available evidence, it is my opinion that the settlement lay to the west of the fort, possibly within a distance of a few hundred feet. Further excavating in areas beyond those already explored may reveal definite evidence of house sites, but it is not impossible that the settlement stood within the area already explored.

In excavating the five-foot-wide exploratory trenches, the earth was removed in layers, roughly two inches thick, until the yellow-brown subsoil was reached. Intrusions into this subsoil stratum, whether natural or man-made, are easily recognized. Only a very few features or disturbances of human origin were encountered, and these, on the whole, appeared to be of no importance.

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<sup>26</sup> Undoubtedly the buildings were timber-framed, with a timber sill resting on the ground. Possibly other crude materials were used, such as wattle, but it is almost certain that logs, laid horizontally, were not used by the early English colonists.

Some were clearly of recent origin, such as the filled post holes from the posts for the speaker's stand, erected for the August 18, 1937, celebration at which Franklin D. Roosevelt spoke. Even so, every disturbance of the ground was accurately recorded for future reference. In addition, the location of trees, evidenced by darkened areas caused by decayed or burned roots, was recorded.

Only one feature worth mentioning here was encountered. It was a rectangular pit, roughly three and a half by four and a half feet in size and four and a half feet deep, located about 100 feet west of the fort. The bottom two feet of the pit was a solid mass of charcoal, made from unsplit pine sticks, from one to four inches in diameter. Some showed ax marks where they had been cut, and none of the pieces appeared to be much longer than a foot. There was evidence of heat on the sides and bottom of the pit, but no ashes were found in the pit, suggesting that it had been used infrequently, possible no more than the one time. This is certainly not the conventional method of making charcoal, but we cannot assume that the first colonists in Virginia were always conventional. Even though this pit may not have served as an intentional means of making charcoal, it is quite apparent that it is very old and may well date from the period of the settlement. It stood for a considerable time, nearly filled, as shown by the relatively thick humus layer over the depression. No cultural material was found in the fill or among the charcoal, but it may be possible to date the feature by tree-ring study. Such a date would be highly important, for if it should be later than 1587, it would show that the colonists had not abandoned the site earlier than that date. Discovery of this charcoal reminds us of the fact that the first group of colonists had set up a portable iron "forge" in Puerto Rico in May, 1585, while en route to Roanoke Island, for making nails.<sup>27</sup>

In planning further excavations, as well as interpreting historical records and archeological finds, it would be advantageous to know as much as possible about the topography of the site at the time of the settlements. During the recent excavating some information was gained concerning soil conditions and topography changes, particularly the development of the sand dunes.

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<sup>27</sup> Porter, "Fort Raleigh," 27.

The original ground in this vicinity was relatively level, sloping from eight to ten feet above average high tide near the shore to about fourteen feet at the southeast corner of the sixteen-acre tract. The fort was not placed on a natural eminence, as might be supposed, although there was a low knoll 300 feet west of the fort. This knoll, in the vicinity of the present log chapel, may have been the cause for the later accumulation of wind-blown sand which formed the dune on which the chapel stands. The present topsoil layer averages six to eight inches in thickness and shows no evidence of having been plowed. In addition to the dune deposits previously mentioned, there is a thin sand deposit over a great portion of the area. There are no large trees growing on these sand dunes, and no trees in the vicinity, for that matter, of any great antiquity. It is doubtful if any tree there is 200 years old.

Archeological evidence showed quite conclusively that some, and probably all, of the dunes on the site had developed after the period of the settlement. A brass buckle, an iron nail, and some miscellaneous refuse, such as burned clam shells, were found on the old top soil below considerable sand dune deposit. The finds were made under closely observed conditions, and it was clear, in each instance, that the sand layer had not been disturbed since it was deposited. This evidence confirms the theory that the dunes along the shore in this vicinity, as well as the sand deposit of varying thickness over most of the site, were formed subsequent to the clearing of the land when the settlement was established.<sup>28</sup> It also explains the apparent incongruity of a fort built behind the dunes when it obviously was intended to command the approach of enemies from the water side.

In addition to the objects found in the excavations at the fort ruins, relatively little European material was recovered. No single artifact found thus far is limited in provenience to the Elizabethan period, although most of the objects are not out of place there. It is unlikely, moreover, that any such object will ever be found, although there is always hope that a coin or some other datable artifact will come to light.

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<sup>28</sup> It is possible, of course, that the colonists made use of land already cleared by the Indians.

Of the ceramic fragments found, one is a small piece of lead-glazed earthenware from the rim of a Spanish olive jar. As the colonists had traded for supplies in the Spanish West Indies while en route to Virginia in June, 1585, this discovery may be of prime significance.<sup>29</sup> A few small fragments of stoneware appeared, but they cannot be ascribed to a specific period. Two larger pieces of earthenware, however, appear to be very old and could well be from the settlement period. A portion of a brass buckle was found among a large group of Indian pottery sherds near the entrance to the fort. This buckle is not out of place at Fort Raleigh, but cannot be assigned exclusively to the Elizabethan period. The same is true of a second brass buckle fragment found in the westernmost trench, lying in the old topsoil below more than two feet of sand dune deposit.

A brass finial, said to have been found in the roots of an overturned tree several years ago and now in the collection at Fort Raleigh, may very well date from 1585. A lead ball was found in a location that suggests it was not of recent origin. It was 16 mm. in diameter, which would be about .62 calibre, or 20 to the pound.

As mentioned before, the interesting thing is the relative scarcity of cultural material or refuse of any sort. There were, of course, the usual bottle caps, but aside from these and occasional modern nails and tin cans, there was very little of recent origin. This would confirm the evidence, both traditional and documentary, that the site had not been built upon since the time of the Raleigh settlements until the recent activities of the Roanoke Island Historical Association.

#### ABORIGINAL INHABITANTS

Sherds of Indian pottery were found in several of the trenches, but in no large quantity, except in one small area just outside the entrance to the fort. Study of this pottery suggests several interesting problems, particularly when it is compared with pottery from other Indian sites in this general region. Much more work will have to be done, however, both at Fort Raleigh and at other sites nearby, before the subject can be discussed intelligently. It is quite possible that information will be secured which will establish the cultural position of the local Indians contemporan-

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<sup>29</sup> Porter, "Fort Raleigh," 27.

eous with the Raleigh settlement. Such studies should also show the sequence of Indian cultures in the region both before and after the short contact with Europeans at the close of the sixteenth century. Study of the Indian remains in the Roanoke Island region appears to be a most fertile field for answering important historical questions, among them the story of the Lost Colony. This would require surface surveys and excavations at selected sites which the surveys indicate are probably contemporaneous with the English settlement.

#### SUMMARY

Briefly, the two seasons' explorations at Fort Raleigh National Historic Site have shown, beyond reasonable doubt, that the site is that of the Raleigh settlements on Roanoke Island. They have established the identity, type of construction, and plan of Ralph Lane's fort, built there in 1585. They failed to locate the site of the village, which was presumably in the general vicinity of the fort, but they did reveal certain conditions which strongly suggest that the settlement may have been located in the area immediately west of the fort.

An important result of the excavating was in showing that a great deal of the original fort is left in the ground, and that careful investigation of these remains should provide fairly complete information as to its original appearance.

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