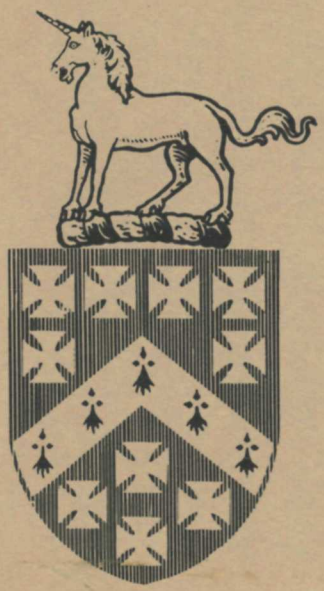
GREEN SPRING PLANTATION

Archeological Report

by LOUIS R. CAYWOOD



BERKELEY

Prepared for

VIRGINIA 350th ANNIVERSARY COMMISSION

&

JAMESTOWN-WILLIAMSBURG-YORKTOWN-CELEBRATION COMMISSION

UNITED STATES

DEPARTMENT OF THE INTERIOR

NATIONAL PARK SERVICE

Cover: Sir William Berkeley's coat of arms.

EXCAVATIONS AT
GREEN SPRING PLANTATION

by Louis R. Caywood

Archeologist

Colonial National Historical Park

Yorktown, Virginia

May 25, 1955

FOREWORD

The settlement at Jamestown---the first permanent settlement by English-speaking colonists within the present boundaries of the nation ---is the first great event in the history of the United States. In 1957 America will reach the 350th anniversary of this historic event. Looking forward to that year the Virginia General Assembly has created the Virginia 350th Anniversary Commission and the United States Congress has established the Jamestown-Williamsburg-Yorktown Celebration Commission to cooperate in planning an appropriate celebration.

The two commissions have established joint headquarters in Williamsburg and are developing plans for a year-long observance in 1957 designed to make Americans everywhere conscious of their heritage and of their debt to the first settlers, and to restore and preserve the scenes of the nation's beginnings.

The celebration will in the main, be centered around the historic sites of the Jamestown-Williamsburg-Yorktown area. It is hoped that several important historic structures can be reconstructed or restored before 1957. Supplementing these sites will be the extended Colonial Parkway, new reception and information centers, exhibit buildings, ceremonials and parades, pageantry, and presentation of music and drama. Outside of the keynote area, the counties and cities of Virginia and their people will join in a Statewide homecoming celebration for the nation. Other local or regional celebrations throughout the State will be appropriately integrated, and the entire celebration will be designated The Jamestown Festival.

One of the important historic areas being featured for the celebration is the site of Green Spring plantation, the seventeenth century home of Virginia's Governor Sir William Berkeley. The two commissions have sponsored an archeological excavation of the remaining foundations, and it is hoped that the site can be connected with the Colonial Parkway and preserved as a national shrine. In view of its importance as the onetime seat of the governor of England's largest American colony and the site of important political, economic, and artistic developments in America's seventeenth century history, it is our belief that the preservation of its site would be one of the most valuable permanent effects of the Jamestown Festival which could possibly be achieved.

Lewis A. McMurran, Jr., Chairman,
Virginia 350th Anniversary Commission

Robert V. Hatcher, Chairman
Jamestown-Williamsburg-Yorktown
Celebration Commission

PREFACE

In 1954 two commissions were created and organized to commemorate the 350th anniversary of the first permanent English settlement in America founded at Jamestown, Virginia in 1607. The Jamestown-Williamsburg-Yorktown Celebration Commission was created by Congressional action and the Virginia 350th Celebration Commission was established by the General Assembly. Both commissions set up offices in the historic Travis House in Williamsburg and worked jointly on the celebration project. The Federal law setting up the Federal Commission also provided for commemorating the flowering of Colonial Virginia culture at Williamsburg and the final winning of American independence at Yorktown in 1781.

As part of the original planning for the 350th anniversary of the founding of Jamestown, members of the two commissions projected the restoration of Green Spring Mansion House as one of the initial projects.

Miss Jane Carson, then of the Institute of Early American History and Culture and now with Colonial Williamsburg, undertook the compilation of a historical report which appeared, on December 1, 1954, as "Green Spring Plantation in the Seventeenth Century: House Report". The historical significance of Green Spring Plantation was ably handled by Miss Carson, and her editorial help is also appreciated.

Mrs. Leonora W. Wood also contributed her abilities, being a writer of Virginia history in her own right. She was kind enough to locate certain data and information for the writer at the library of the William and Mary College.

In conjunction with the Green Spring archeological work, J. Paul Hudson, Museum Curator for the Colonial National Historical Park, worked tirelessly, directing the care of the artifacts which were uncovered daily. Mr. Hudson had these artifacts washed, catalogued and stored in trays; he further classified and identified them for the writer. This work was of considerable help in the study of the artifacts.

Mr. A. Lawrence Kocher, now retired, but formerly the Architectural Records Editor of Colonial Williamsburg, was retained by the Virginia 350th Celebration Commission to make an isometric map of the foundations. He made a very careful and accurate map of the findings (Map 4) and was of considerable help to the writer because of his background on colonial architecture.

Mr. C. Malcolm Watkins, a curator for the Smithsonian Institution, helped in the ceramic studies. Identification of many of the wares was the result of his knowledge.

The owner of the land, Mr. Phillip Murray, of Newport News, Virginia, was approached and an option was obtained by Mr. Parke Rouse, Jr., Executive Secretary of the Virginia 350th Anniversary Commission, to purchase the lands upon which the old foundations existed.

From the beginning it was evident that an archeological study of the site was required. The two commissions requested the National Park Service to undertake this work. This was agreed upon and the writer was detailed for the assignment which was placed under the direct supervision of Superintendent Stanley W. Abbott, of Colonial National Historical Park at Yorktown, Virginia. Subsequently, permission was obtained from Mr. Murray to excavate the foundations to obtain information in regard to the original buildings, should restoration become possible. It was further agreed that artifacts obtained during the excavations should be stored at the Jamestown Laboratory for not more than two years and would go to the then owner of the land.

Before the actual work was begun at Green Spring, the excavation of the site of the 3rd and 4th State Houses on Jamestown Island, on land belonging to the Association for the Preservation of Virginia Antiquities, was accomplished. This was a fortunate break, in a way, for the writer became better acquainted with existing conditions and he was able to get tools, equipment and men together during the period from October 20 to November 15.

Work on the Green Spring project began on November 22 and ended on May 25, with the completion of this report, with the exception of the period from December 19 to January 6 when it was necessary to return to San Francisco to complete a special report, "Excavations At Two Fort Okanogan Sites, 1952" for the Washington State Parks and Recreation Commission.

The costs of the excavation at Green Spring were shared by the Virginia 350th Anniversary Commission and the Jamestown-Williamsburg-Yorktown Celebration Commission. The excavations proceeded according to plan through the winter, often interrupted by severe weather. With the advent of spring the work progressed at a faster pace and the major field excavations were completed by the end of March. Throughout the work the writer found much helpful assistance at every hand--in the commission offices, from the National Park Service staff, from various staff members of Colonial Williamsburg, in the William & Mary College library and elsewhere. Special mention should be made, also, of valuable advice by Dr. E. G. Swem, of Williamsburg, and Mr. P. M. Griesenauer of Five Forks, Virginia. Mr. Griesenauer participated in earlier excavations performed by Mr. Jesse Dimmick in 1928. Valuable data also came from Mr. Thomas T. Waterman's chapter on Green Spring in Domestic Colonial Architecture of Tidewater Virginia.

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Aerial view of Green Spring after excavation. Pottery kiln in lower left corner.

INTRODUCTION

The remains of the Green Spring Mansion are located three and one-half miles north and slightly west of Jamestown. (Map No. 1). In the seventeenth century it was on the first carriage road in Virginia which led from Jamestown to Middle Plantation, now Williamsburg, Because of its ever-flowing waters, Green Spring was the site of an Indian village of the Paspaheghs long before Sir William Berkeley built the first Green Spring Manor House in the fourth decade of the seventeenth century.

In the long period from 1607 to 1699 there were many governors but none better known or of longer tenure than Sir William Berkeley, who was both loved and despised by those he governed for the English Crown. He might be termed the first gentleman farmer of Virginia and his plantation, adjoining the Governor's land, was as fully developed as any in the colony in its period. It has long ceased to exist and its formerly extensive buildings have long since disappeared. It has through the years, however, continued to be a subject of interest and speculation. Those connected with planning for the celebration year soon saw the importance of Green Spring and began to assemble the basic facts needed in any interpretive and development plan to be effected here. The preliminary studies pointed out that more information was necessary-- historical, archeological and architectural.

The appearance of Green Spring before excavations began was that of a typical Virginia pastoral scene with a few brick walls of some of the dependencies (the outbuildings of the plantation) still standing. Fortunately, Mr. Murray had cleared the land surrounding the site of the Green Spring Mansion House and the ruins of the Ludwell-Lee House 300 feet to the north. The well-preserved walls of a large brick building to the northwest of the Green Spring foundations are known as the jail. To the southeast (Map No. 2) is a small new brick spring house from which flows the famous Green Spring. To complete the scene there was a herd of cattle guarded by a bull.

Upon closer examination, a number of small mounds and shallow ditches became evident. The brick-lined walls of two large basements and a few brick foundations could be noted. These evidences of the remains of the Green Spring Mansion House were all that was left of the once most famous house in seventeenth-century Virginia.

This report will describe the architectural ground plan (Map No. 3) of the buildings separately, room by room. The description of other features of the plantation adjacent to the buildings will follow. In the excavations made by Mr. Jesse Dimmick in 1928-9, three basements were fully excavated and left exposed to the elements. Fortunately, the nature of the brick in these structures was such that it

has stood up fairly well over the years. Also much credit should be given to Mr. Dimmick's foresight in attempting to stabilize the brick walls by pouring a thin mixture of cement over the brick. Roots, the elements, and possibly amateur diggers did away with most of this covering by 1954.

The first few days were spent in getting tools to the site and starting test trenches along the fifty-foot grid lines in areas away from the mansion house. Six laborers were assigned to the project from the work on Jamestown Island. These men were all from Surry County south of Jamestown Island, and became very good workers who took pride in their ability to carry out the necessary archeological work.

The archeological work was divided between explorations for features not already known and a careful examination of known foundations and features. The Dimmick map was used to determine the extent of the walls found by him. Since Mr. Dimmick uncovered only the tops of the walls, much additional information and many worthwhile artifacts were recovered when trenches were dug on both sides of the brick foundation walls to their entire depth. In the case of the west garden wall (Plate III) excavation on only one side proved a major undertaking with a four-foot wide and six-foot deep trench.

Since the period covered (1643-1797) was more than 150 years of occupation at this house site, it was hoped that some of the excavation tests would reveal good stratigraphic sequences. However, rather disappointing results were obtained from the few locations where cultural depth was found. The artifacts fall well into the last half of the seventeenth century, with some few of earlier origin and many more of later times, showing continual occupation.

Weather from January to March of 1955 was most uncooperative. Although work was delayed from time to time to allow snow and mud to dissipate, experience created a remarkably high degree of efficiency which went far to compensate for adverse working conditions.

The most disheartening development was to see the day-to-day deterioration of the brick and mortar in the foundations as they literally exploded from the constant freezing and thawing conditions to which they were subjected, sometimes for weeks. Some good weather came in March which facilitated the exposure of the foundations. By the second week in March the excavations were at their best and on Sunday, March 13, the project was opened to the public from 2:00 to 4:00 P.M. After this date the work consisted mainly of ferreting out special details about the construction of the building. A large trash area to the east of the site was completely worked out with very gratifying results.

HISTORICAL BACKGROUND

Much is known of Sir William Berkeley and his prominent role in seventeenth-century Virginia, (Carson, "House Report", Appendix A). The matter of the physical appearance of his house and plantation at the time of his residence, however, is something else again. Data on this is extremely meager. No period drawing, plan, or even adequate word picture has come to light in the old records. Consequently, the existing remains which lie underground are invaluable. The paucity of historical fact makes the interpretation of these even more difficult—and more challenging. It requires the skillful use of any tested speculations that can be made.

William Berkeley was born in London about 1608, the youngest son of Sir Maurice Berkeley, an original member of the London Company of 1606. William graduated from Oxford in 1629 and in 1632 was appointed one of the Royal Commissioners for Canada, in which office he won the personal favor of Charles I, who appointed him a gentleman of the privy chamber. He was one of the eight original Lord Proprietors of Carolina. His coat of arms appears on the Great Seal of the Lords Proprietors of Carolina (Ashe, 50) and has been taken from there for the cover of this report.

In August 1641 he was appointed Governor of Virginia and came to the colony in 1642. On June 4, 1643, he obtained by court order 984 acres known "by the name of Green Spring". In 1646, when surveyed,the tract was found to contain 1090 which was his holding until 1661, when it was increased by 1000 acres by patent. In addition, he had the use of 3000 acres of Governor's Land that adjoined toward the west, fronting on the James River.

At what point Berkeley built on his property is not specifically known; seemingly it was undeveloped initially. By 1649 he had a comfortable house befitting his station. At this time there is a reference to Berkeley in residence and entertaining as if he was then very well established. He relinquished the governorship in 1652 although continuing to reside at Green Spring.

His second term as governor was from 1660 to 1677, and in this period we know that he was conducting a fully developed plantation in the seventeenth-century manner. His activities were extremely diverse and would have required extensive development to accomodate them-- a large mansion and outbuildings in number. His efforts in wine producing, rice and flax cultivation, horticulture, silk raising and tobacco are well known. He had orchards and a vineyard, servants in number, produced timber products, and had horses and oxen. He entertained lavishly. In 1670, at the age of 64, he married Frances Culpeper Stephens. Lady Frances was 36 at the time of marriage and

possibly this event suggests some expansion of his home as originally conceived and built. It was spacious enough to accomodate the Assembly after Bacon burned Jamestown in 1676.

The estate passed to his widow, Lady Frances, who married into the Ludwell family, and it was used by this family for a century and a quarter--for the remainder of the life of the Berkeley home. How much the various Ludwell owners and occupants added and subtracted from the Berkeley structures is one of the difficult problems of this study. It could have been considerable or it could have been little, both in buildings and in grounds development. It was a Ludwell seat that was heavily used and enjoyed.

A dearth of pictorial material exists for Green Spring. All that is known comes from the late Ludwell period. Disaster fell in 1781 when, only a few miles from Green Spring, Lafayette and Cornwallis fought a battle on land belonging to William Lee. Both Lee and John Paradise lost their slaves. The mansion at Green Spring was left in a "ruinous" condition (Shepperson, 136). The good that came out of the battle was a map of the battle area by Col. Desandrouins in 1781. (Map No. 6). This map is our only clue for dating that part of the plantation development called in this report the Green Spring Mansion House. We know that by 1781 it was in existence, probably had been for many years, and none of the Old Manor House described in this report is shown.

In 1796 Benjamin H. Latrobe, a French architect, was retained to study and make recommendations for repair of the Green Spring Mansion House. However, these plans came to naught except that a south elevation was made by Latrobe which is of value because it shows the house as it might have looked after repairs. Instead of repairing the old house it was abandoned and dismantled.

The then owner of the property, William Ludwell Lee, built a new home some three hundred feet to the rear of the old Berkeley site. The area then encompassed the work of Berkeley and any enlargements that he may have made, plus any changes or additions performed by or for the Ludwells. Berkeley's work could have been in several stages--(1) the initial structures built in his first term, (2) any activity after his temporary retirement in 1652, (3) possible expansion during his second term, and (4) any new work after his marriage in 1670. His widow, it might be added, in 1678 wrote that Green Spring "I thinke...the first seat in America & the only tollerable place for a Governour..."

ARCHEOLOGICAL EXCAVATIONS

The first work done at Green Spring in preparation for the excavation project was to lay out a coordinate, or grid system, on magnetic north. A topographic map with contours at foot intervals (See Map No. 2) was made at the same time. The base point for the coordinate system was selected to the southwest of the building area. The numbering started at this point with 1000. Lots 100 feet square were laid out to the north and east of this point. Lot N12(00) E14(00) would be located 200 feet north and 400 feet east of the base point. In order to measure more easily from the grid points the area around the building foundation was divided into 50-foot squares. Coordinate sheets with a scale of 1/4" to the foot were made up for each fifty-foot square on which the details of the excavations were recorded.

The excavations were carried out to search the area in the vicinity of the mansion house for the remains of buildings and features and to expose the foundations of the buildings for further measurements, and especially for elevations.

The elevation of the Green Spring area was not known, so an assumed elevation of 100 was taken. The bench mark for this elevation was the concrete sill of the spring house.

Since the excavations relate only to the foundations, no attempt has been made to designate many of the rooms as to their possible original uses. A careful study of appendices J and K in Miss Carson's report, "Green Spring Plantation in the 17th Century, House Report" reveals different names assigned to the rooms by Benjamin H. Latrobe. It is suggested by Miss Carson that Appendix J shows the floor plan of the rooms as Latrobe found them when he visited the house in 1796.

In order to avoid confusion only the dependencies have been named as to use, if such use is known, either by the archeological findings or from other sources. The rooms of the house and other features have been designated by letters beginning with A. The foundations of the Mansion House consist of a long file of rooms beginning with an ell on the northwest corner and extending eastward. The work by Mr. Dimmick as reported in his "Green Spring" article in the William and Mary Quarterly alludes to certain progressions in the building of the plantation mansion. He believed that the cluster of rooms to the east marked A on his ground plan was the first building to be erected at Green Spring, and he attributes that building to Governor Berkeley. Messrs. T. T. Waterman and John A. Barrows in Domestic Colonial Architecture of Tidewater Virginia, page 11, differed from that thought and stated that the main foundation (to the west) fell into a familiar category of architecture common to England in the seventeenth century. They assigned no uses to any of the rooms except to say

(page 12) that the kitchen would be assumed to have been within the house, not detached, as medieval influence was still strong at the time of the building. Miss Carson concurred with Messrs. Waterman and Barrows' suggestion, but stated in Appendix G of her report that "perhaps further archeological work will determine this point". From these viewpoints in regard to the ground plan exposed by Mr. Dimmick and from my own observations it became very evident that the crux of the excavations was the relationship between the two groups of rooms and all related features. Since it was evident from the start of excavations that two dwelling houses existed here, built at different times, the two structures to avoid confusion have been designated by different names. This will help to keep clear in the reader's mind what is referred to during the description of the excavations. The earlier of the two buildings has been called the Old Manor House. The later structure has been called the Mansion House. Map No. 3 shows the difference by shading on the walls of the Old Manor House.

The Old Manor House was built in Sir William Berkeley's first governorship and probably completed by 1649 or perhaps earlier. Although not all of the walls of this house were found it appears to have been square in shape with the foundations of two medieval-type towers on the rear or east side. The house apparently faced west and the main entrance may have been between Area H and Room N since a door sill was found here. That this house is earlier than the Mansion House is clearly shown by several pieces of evidence. The iron sandstone foundations upon which some of the room walls were constructed were removed when the east wall of Room D of the Mansion House was built. Later construction is also shown by the placing of the curved east garden wall over the debris-filled basement of Room N. The rooms of the Old Manor House are small, but the large hall, M, could readily have held the 40-odd members of the Assembly in 1676.

Work was begun by the digging of test trenches at various locations outside the building site area to determine the type of soil to be dealt with, the depth of overburden on the original soil layer and the possible existence of unknown structures.

The nature of the site divided the area into several sections. To the south was a large entrance court into which the main carriage road from Jamestown entered. This had been flanked by two sets of three buildings to the east and west (See Map. No. 5). The spring house was one of the buildings on the east. The uses to which the other structures were put was not determined. This entrance court probably contained part of the formal gardens and the carriage turnaround below the terrace. To the east was the mount which unfortunately was not completely tested but from my observation appeared to be entirely man made. At least two brick structures had been built on parts of this mount. They were not tested as they had been previously

dug out; so their uses are not known. In this area was the kitchen and the pottery kiln, both of which were completely excavated. To the west was the building known as the jail and the nursery or hot house. To the south was the main gate and wall. The central portion of the terrace site, which was almost completely excavated, consisted of three garden walls, two of which were curved, and the remains of the Mansion House buildings themselves.

The exploratory trenches away from the house site revealed a number of interesting observations and features. The trenches dug in the entrance court revealed that masses of broken brick and mortar had been used as road fill for the road leading in through the main gates. This was self-explanatory because water was reached at about two feet below the surface and no further work was deemed necessary here. Either Berkeley or the Ludwells had found it necessary to fill here to keep carriages from bogging down in the mud.

To the west, test trenches were started but there appeared to be no depth to the overburden at the areas tested. No further exploratory work was done here except to determine the exact location and extent of the large drain from the building known as the jail. The details of construction of this arched drain are shown on Map No. 4.

Exploration to the north of the foundations was not extensive. The few test pits put down failed to reveal any evidence of trash or structures, except north of Room I. Surface indications directly north of the Mansion House foundations show brick paving. The paving was not traced out in detail but appeared to have been the remains of a former walk possibly leading from the back stairway (G) east to the kitchen.

Because of lack of time and funds no attempt was made to do any exploratory work in the Ludwell-Lee house to the north. Although this was not considered a part of the Green Spring project, it might have been well to have tested the terraces to determine whether brick and debris from the Mansion House was used in building up the terraces for the Ludwell-Lee house and gardens.

DESCRIPTION OF FINDINGS

The description of the rooms will be made beginning with those of the Old Manor House first and progressing westward to those of the Mansion House. The arbitrary designation of rooms from A to S was made prior to the full determination of a sequence in the building construction.

Old Manor House

The Old Manor House consisted of eight or nine ground floor rooms, two of which were basements. Cellar No. 2 was found within the area of Room O. Beginning at the northeast corner the rooms will be described one by one.

According to an old inventory (Neill, Virginia Carolorum, footnote, page 204), the original Berkeley Mansion contained, "Six rooms, as many closets, a spacious hall and two passages, with garret rooms". Here Sir William Berkeley, the royal governor, who came in 1641, was to reside. This reference from Neill is undocumented. His undocumented quotations are quite reliable and were from sources which are no longer extant. The similarity between the actual number of rooms and the number listed from this source would make us think that the source was correct.

Room J formed the northeast section of the Old Manor House. Here are found a number of very interesting features. The inside measurements are 14 by 16 feet. In the southeast corner, on the east and south walls, the foundations go to a depth of $3\frac{1}{2}$ feet. The east wall is 3 feet thick above this deep wall. Since there is no other location in any of the foundations where such a section of brick was placed, it would appear, from a study of the ground after excavating, that a natural depression or drainage ditch had originally existed there. Foundation strength was necessary in order to build Tower No. 1 at this location. The terrain probably was such that the plan of the building made it necessary to add this huge brick wall. The details of this foundation are shown in Plate IV, A. Tower No. 1 and Tower No. 2 in Room L form a plan which is typical of any early period of architecture in England and which certainly places this section of the foundation area as the earliest. The east drain was found leading from Tower No. 1; this feature is shown on Dimmick's ground plan and must have been more extensive at the time of first being excavated. No traces of some of the walls shown by Dimmick were found in the 1954-1955 excavations. Another important feature in Room J was the corner fireplace built into the northwest corner. The brick of the fireplace were free and not bonded into the walls of the room. Corner fireplaces are not supposed to have come into common use until the late seventeenth century. It could have been that Berkeley was ahead of

the years with such construction. The firebox measures 4.5 feet wide by 2.2 feet in depth. There was no brick hearth in the fireplace nor any evidence of where the original floor level had been. The room had been filled with a clean yellowish marl which packs well and probably formed the floor, but evidence of the exact elevation was not determined. The floor was probably destroyed by former work at the site.

Room K formed the central section of the Old Manor House measuring 16 by 22 feet inside. From very slight evidence next to the east wall it is possible the room originally was brick paved in diagonal pattern.

Room L formed the southeast corner of the Old Manor House but not all of its foundations were found. Apparently the south and west walls were removed so that no trace was found, not even the trench in which these foundations had been built. The remains of Tower No. 2 were found and plotted. This tower appears to have been similar in size and shape to Tower No. 1.

The foundations of Room O were laid of two courses of iron sandstone of local origin. This stone, locally called swamp pudding, is rich in iron and was used by the colonists for foundations and for the construction of some structures. It is brownish in color and is easily shaped. These foundations are irregular in form. No evidence of the east wall of this room could be found. A fireplace had been built in the west wall. Cellar No. 2 was found in the center of this room.

The only remains of the walls of Room O were found on top of the north foundation. Mortar was first laid over the two courses of stones and brick were laid on top of this.

Room O may originally have been paved with brick tile measuring $6\frac{1}{2}$ inches square. A considerable quantity of this size tile came from Cellar No. 2 and could have fallen into the cellar after abandonment.

The large basement, Room M, was excavated by Dimmick and has been exposed to the elements since 1928. The brickwork held up surprisingly well over that period of years. This basement formed the central section of the Old Manor House and must have been the room referred to in the undated inventory which stated that the original Berkeley Mansion contained ". . . a spacious hall . . . ".

The floor consisted of bricks laid on edge on each side of a central dividing line except for two and one-half feet of the north end and a small section in the southeast corner which were laid of closely fitted cobbles. A brick stairway led in from the southeast corner.

In checking breaks in the brick paving, four post holes, two in each end of the room, were located. Each post hole was approximately one foot in diameter. At the time they were used each pair must have supported a large horizontal timber on which had been laid the floor of the "spacious hall".

Room N was also a basement measuring approximately eleven feet square on the inside. The floor level had been the same as that of Room M but was unpaved. This basement had been partially excavated by Mr. Dimmick. Fortunately, the excavations had not been completed, probably because of the fact that the curved east garden wall had been built on the fill of this room. In completing the excavations the curved wall was supported by brick piers built up to the bottom of the wall (Plate VI). A very good collection of artifacts came from the unexcavated portion of Room N.

The original use of Room N was not determined. A number of iron tools, all of which were covered with coal and dust, were found on the floor. A small projecting wall two bricks high and one brick wide was built out from the west wall.

Area H appeared to have been originally a room which measured 22 feet wide by approximately 27 and one-half feet long (east to west). The foundation of this room had been laid of two courses of brown iron sandstone on which mortar had been placed before laying up a brick wall. The workmanship of Area H was identical to that of Room O and is the complement of Room O except for minor variations. Apparently neither Room O nor Area H had towers similar to those found in Rooms R and L. The last use to which Area H was put was as a paved court without walls but probably roofed. It had been paved with bricks set on edge, stone paving blocks, and small Dutch bricks. The entire area, including the walls over the foundations had been used as a paved area because in places where the original wall bricks were no longer serviceable they had been replaced with other bricks laid flat (Plate VII). The original paved area was much larger than that found since the west end of the room was cut off when Room D of the Mansion House was constructed. This is evidenced by the fact that portions of the stone foundation with bricks in place are found within the confines of Room D.

An interesting feature of Area H was that in the northeast corner there had been provision for the disposal of waste, slops, dregs, etc. into the beginning of the Mansion House drain.

Room I measured 16 by 19 feet with brown sandstone foundations on the west and north sides and part of the east side. It was partially paved with $8\frac{1}{2}$" square paving tile, one inch in thickness. Some brick was also used for paving. The floor level was 2.6' higher than Room M.

What events took place in connection with the life of the Old Manor House are not known from any extant records. Archeological investigations give few, if any, leads as to what may have happened here during its lifetime. We know nothing as to the use of any of the rooms except by conjecture. Part of the foundations of Room L and an adjacent room at the south end of Room M have entirely disappeared.

In the numerous trenches and pits excavated around the east end of the area quantities of broken brick, mortar, plaster, tile and pantile were found. The plaster had been applied on lath which would bring up the possibility that the original house had been built of wood on stone and/or brick foundations. At least part of the Old Manor House was of this type of construction. Other parts may have been of brick construction-- probably the two towers. Much of the brick and plaster found buried in trash areas showed evidence of fire. From this we may be positive that at one time fire totally or partially destroyed the Old Manor House.

Mansion House

The Mansion House has long been thought of, since its excavation and since its study by specialists on seventeenth century colonial architecture, as the Berkeley residence. I am sure we would all like to consider this as true, and it may be that the Mansion House was built during Sir William's residence at Green Spring. At least Lady Frances, in 1678, one year after his death, thought it was, "the only tollerable place for a Governour". From lack of evidence we may imagine that Sir William, before his marriage to Lady Frances in 1670, must have had a new feeling of social importance and could well have projected and built a new house or rebuilt or added to the original structure. There is no evidence to prove that he did build the Mansion House, but there is plenty of evidence in the test excavations to prove that much razing (perhaps from fire-- burned bricks, plaster, and pantile) took place and of course rebuilding must have resulted, especially after his marriage. But again no records. Lady Berkeley's account of the house in 1678 in her letter to Sir Abstrupus Danby would indicate that the Mansion House had not as yet been built and that the Old Manor House, thirty years after its initial construction, was not in good repair. Perhaps after her marriage to Philip Ludwell the plans for the Mansion House were projected and construction begun. There are periods of construction on this House--the addition of the ell-shaped room (Room A), the addition of the gallery, the changing of the front or main porch, none of which can be dated.

The Mansion House consists of four ground floor rooms, a back porch, a gallery or arcade, a front porch and a drainage system. Proof that the Old Manor House existed, at least in part, at the time of construction of the three rooms, B, C and D, is evidenced by the

fact that the drainage system started at the northeast corner of Area H, ran along the north wall until it reached the northeast corner of Room C, where, as an integral part of the construction, it ran across the central part of the house beneath the porch and ended at the catch basin. All of the construction of these three rooms, except the east end of Room D, show the use of the same type of mortar, a yellow marl mixed with burned oyster shell.

The construction of Room A, the gallery, and the east end of Room D, all are of later vintage according to the mortar used, a white oyster shell mixture.

The foundations of the Mansion House are massive in construction indicating that considerable wall height was contemplated.

Pottery Kiln

The pottery kiln was discovered as a result of test trenching. The first indication was the finding of two courses of a brick foundation on February 8 on the small knoll to the east of the main houses. The weather was extremely bad at this time and the men worked out the perimeter of the foundations in mud and ice. The pile of broken pottery was found and removed from in front of the kiln at this time. (Plate V). Part of the kiln itself was uncovered, but rain, snow and freezing weather made it impossible at that time to continue the work. Later drainage trenches were made from the front of kiln and from one side by removing part of the foundation.

Almost continual rain still would not permit complete excavation. Finally, in March, the earth became dry enough to permit the complete excavation of the kiln.

The complete fill over the floor of the kiln was to a depth of twenty-eight inches. The first four to six inches from the top comprised an artifact layer containing nineteenth and twentieth century nails, nineteenth century blue underglaze transfer-printed Staffordshire, eighteenth-century German salt-glaze stoneware (blue and purple enamel decorations on gray body), hand-decorated eighteenth century Staffordshire earthenware, and blue shell and feather edged nineteenth century English earthenware.

Other items in this top layer included one green glass fragment; one molded clear glass bottle fragment with the inscription, "Hoyt's German Cologne, W. Hoyt & Co., Lowell, Mass."; window glass fragments of the nineteenth and twentieth centuries; one Minie ball and five pipe stem fragments of the late seventeenth and early eighteenth century.

Below this top six-inch layer was a sterile layer from eight to ten inches over the remains of the kiln proper. This layer was of yellow clay similar to that used to build up the mount and may have been an additional layer placed over the mount and its southern extension after the kiln was abandoned.

The last twelve to fourteen inches within the kiln consisted of brick fallen from the arched roof, broken earthenware, and "bats". Evidence of a four-inch wide flue was noted between the arched roof and the south wall of the kiln.

The floor of the kiln was of extremely hard fired soil, varying from one-half to three inches in thickness.

The opening, or eye, through which the firing material and unfired vessels had been placed, measured 4.2' in length by 2.2' in width.

It is estimated that the arched roof had an inside height of seven feet.

In the pottery kiln as well as outside were found a great quantity of "bats" used for pottery rests while pots were being fired in the kiln. There "bats" are identical in shape and size to the flat roofing tile found at Green Spring and Jamestown except for the addition of a lug (Plate XIV). Quantities of liquid glaze had run down on the misshapen "bats", and often the imprints of the rims were found impressed on their surfaces. The "bats" and broken earthenware from the kiln and vicinity constitute approximately one-tenth of the total weight of artifacts found.

The age of the kiln is undisputed as it falls into the period of earliest occupation of the site. Pottery from the kiln was found associated in the lower strata of the early trash pit in association with wine bottles dating from 1660 to 1680.

The kiln was probably built by Governor Berkeley about 1665. Although only crude utilitarian wares were made, the importance of the Green Spring kiln cannot be overstressed. It was one of Virginia's early industries; and to date is the only seventeenth century pottery kiln which has been found in the State. (Types of earthenware made in the kiln are shown on Plate No. XIV. Two types of earthenware were made in the Green Spring kiln--(1) red body wares with no glaze and (2) red body wares usually glazed only on the inside with a lead glaze to make a piece impervious to liquids.

Greenhouse or Nursery

This unexcavated structure, to the southwest of the Mansion House has a three-foot thick original wall still standing; an inner wall with pointed mortar joints and a later plastered wall, make up this three-foot thick wall, showing two periods of construction. In one of the mortar joints of the later wall is a broken piece of pipe stem with a long spur which would date in the second half of the eighteenth century. This second wall appears to have been built for added insulation.

This type of greenhouse with furnace always faced south and was glassed in on the south side. The north side usually was built against the side of a hill, or in this case, a terrace was built up against it. The furnace or stove which was used in this structure, must have been fairly large. Only the cast iron base was found. This measures $27\frac{1}{2}$ inches wide by 31 inches long and is 3 inches thick in places. It weighs approximately 350 pounds.

Sir William's greenhouse is mentioned in the literature of his time. It continued in use long after his death and probably was still a part of Green Spring plantation until the 1860's.

Spring House

No attempt was made to discover any original part of the spring house. The present structure of cinder block with brick facing is about two years old. Other foundations do appear at the spring house. At one time a pump and pressure tank had been installed here to take water to buildings on the Ludwell-Lee terrace. Another pipe line also led to the jail where water was discharged into the jail basement and drain to be used for irrigation of the original garden plot adjacent to the greenhouse.

Kitchen

A building to the east of the Old Manor House was used as a kitchen and bake house at one time. The size and layout of the building are shown on Maps 3 and 4. According to the type of brick and the method of construction the kitchen appears to be of seventeenth century construction. However, no artifacts of seventeenth century times were found in the building. In the west half of the building a considerable quantity of iron trimmings were found along with coal dust. Apparently, the last use to which the building was put was that of a blacksmith shop.

Artifacts found along the inside of the north wall consisted mainly of early nineteenth century types of pottery as follows:

1. Hand-Painted Staffordshire Ware
2. Transfer-Printed Staffordshire Ware
3. Staffordshire Spatterware
4. Staffordshire Blue Underglaze
5. Blue and Green-Edged Ware

The remains of the two hearths and two bake ovens are of interest. Exactly what arrangement existed for the use of the bake ovens is not known. Probably hot coals or even fires were used in the oven before baking. Flues must have led to the main central chimney. No evidence of a passageway was found between the east and west rooms of this building. There might have been room enough to have squeezed by the south oven. It is more probable that two doors existed on the south side so that entrance could have been made to either room from the outside.

Landscaping

The final layout of the Mansion House grounds consisted of an entrance court and forecourt. The entrance court was enclosed by a front garden wall on the south (Map No. 6), by dependencies on the east and west and by a terrace on the north. The forecourt, in front of the Mansion House, was flanked by curved garden walls to the east and west.

To the rear of the Mansion House was a level area bounded by the mount on the east and a natural rise of ground to the north. This natural rise was added to after 1800 for the formal gardens of the Ludwell-Lee house.

The mount is a huge man-made structure of unknown age. Proposed test trenching to determine its physical make-up did not materialize so it can only be said that it appears to be entirely built up. Mounts exist at other places in Virginia and were common in England at that time and earlier.

The progression of landscape development at Green Spring may have been along the following theme:

When Sir William came to build at Green Spring, a narrow spur of high ground overlooked the spring. On this land was built the Old Manor House. This structure faced west so any gardening development for the beautification of grounds would have taken place to the west of the building. Some terracing probably took place at this time but on a rather limited scale because most of his efforts were being spent on agricultural developments. Probably before his death more developments were made, but it appears to have been after the building of the Mansion House that great terracing developments resulted.

The Mansion House with central drainage system, front and rear porches and a central garden wall all appear to be of the same approximate period. At this time the garden elevation appears to have been some twenty-two inches lower than the present level.

The last development appears to have been the abandonment of the rectangular front stairway and the building of the curved one to replace it. At this time the central garden wall was abandoned and the curving east and west garden walls with gates were added. Between the central garden wall and the curved west garden wall was the catch basin at the end of the drainage system. This appears to have all been abandoned and covered a part of the next earth filling project.

The final landscaping development at Green Spring was a tremendous earth moving project which raised all of the forecourt twenty-two inches and added the terrace west of the west curved wall. The area north of the greenhouse appears to have originally been another spur of ground. How far it reaches toward the greenhouse is not known, but the adjacent terrace appears to be mostly artificial.

Structure S

This massive brick foundation was built on the edge of the forecourt terrace. Its use is not known. Nothing to determine its age or use came from the excavations. On the east end was a hearth. Inside the room was found the remains of a brick structure which might have been a bake oven. Foundations measuring 33" in thickness might have supported walls of the same thickness for the purpose of retaining warmth necessary for baking. On Map No. 4 Mr. Kocher has suggested its use as a blacksmith shop. Such a use would have left some evidence of coal or iron fragments as was found in the kitchen.

This building does not appear on the 1781 map. It does not fit into the plan of the Mansion House and gardens. Nothing found during the excavations gave any evidence of what it was used for. The method of construction and mortar are not similar to any other construction at Green Spring, so its use will have to be left unknown for the time being.

Catch Basin

To the west of the central garden wall there were the foundations of a catch basin marked P on Map No. 3. This apparently was intended to take care of the waste which came from the Mansion House drainage system.

Gallery

On the south side of the Mansion House was a gallery or arcade (E) stretching the length of the house. This was built of brick arches and supported a porch along the second floor. The foundation of the gallery was built at a later time and appears to have had a number of buttresses to help support it. Some of these evidently were constructed to help support the sagging foundations.

Stairways

The main or front stairway (F) shows two periods of construction. The original stairway built with yellow marl plaster similar to that of the Mansion House construction, was T shaped. It consisted of two short stairs leading in from the east and west to a central platform from which the main stairway went up to the second floor. This stairway was abandoned and a flaring stairway constructed to take its place. What motivated this change is not known-- perhaps disrepair led to the construction of a newer style in the last decade of the eighteenth century.

A back stairway (G) led up to a short porch on the north side. Entrance to one or two rooms probably led off this back porch.

APPRAISAL OF GREEN SPRING SITE

The condition of the brick foundations uncovered by Mr. Dimmick and during the 1954-1955 excavations vary. Some of the foundations exposed by Mr. Dimmick in 1928-9 are still in good condition after more than a quarter of a century of exposure to the elements. On the other hand, some of the foundations uncovered in November of 1954 literally exploded into tiny fragments because of freezing and thawing. With such differences in the bricks themselves it is difficult to make any true appraisal of the foundations of the various structures.

If the land should be acquired, a method of interpretation would have to be worked out for the plantation site as a whole. A multitude of questions would immediately arise as to the best method of presentation of the seventeenth century plantation story. Possibly a complete restoration, not only of the buildings but also of the dependencies, gardens, fields, and industries would be the only way to do justice to Green Spring. But other less costly methods could also be used which would portray the life of the times to the visitors. It is not the province of this report to make any recommendations in such matters. the immediate need is to keep the foundations as well preserved as possible by backfilling.

DESCRIPTION OF ARTIFACTS

By the middle of the seventeenth century when Sir William became settled at Green Spring, tools and supplies used to support life and hack an existence out of the raw wilderness of the New World were certainly well established as to shape and size. In studying this period, one cannot rely on contemporary records to tell us the way of living to any great extent. To familiarize ourselves with the many non-perishable objects of those times, archeological explorations are one of the best sources of information. And even then, the objects unearthed are not the personal heirlooms or even the craftsman's tools. These are carefully handed down from one generation to another. What we find are the broken tools and farm implements, dishes, bottles, smoking pipes, discarded building hardware, and other objects which were thrown away after they had served their purposes in the homes of the day.

An amazing amount of good material was recovered during the Green Spring excavations. Hardware, tools, ceramics, glass, metal ware, brick and roofing tiles were the chief finds. One coin, a brass weight, five brass thimbles, Chinese porcelain, English slipware, and many Dutch delft fireplace tiles were among the finer items unearthed.

By this time the period of early colonization had passed. The personal tools, household articles, bedding, kitchen ware, and other domestic items and household accessories, brought over by each family, were probably mostly used up. New object were bought in England by the sale of tobacco and other Virginia products, and we have a continuous process of better and differently made objects. These can be dated, as many records exist of the manufacture of certain products in England. Silver can be dated by hall marks, pewter and latten metal by "touch" marks, and pottery and glassware by its type, shape and design. Only then does archeology take on another aspect-- that of telling the story of the times by actual objects relating to the lives of the people who helped build this nation.

In the Virginia colony the pattern of agricultural work was well organized by 1650. The source of labor was well established and the tools used probably did not vary too much. Some few tools, such as the Virginia hoe, were probably developed here for special use in tobacco culture. A good selection of agricultural tools is shown in Plate IX.

Other objects of iron such as building hardware, equestrian items and a rare type of pole arm known as a bill, are well illustrated in the drawings in Plate X.

When iron objects of this age are excavated, they are badly

encrusted with rust, earth, and sometimes carbonaceous deposits. The study of these objects is almost impossible unless they are properly cleaned, preserved and catalogued. The treatment and cleaning of these objects is adequately taken care of in the Jamestown Laboratory by manual and chemical cleaning. Objects are numbered for identification and preserved by boiling in a protective coating of paraffin and cerese wax. The objects may then be studied, photographed and displayed according to need. The Green Spring preservation work in the laboratory was efficiently done by Dr. Alfred Armstrong and Mr. Edward Katz.

Other metal wares--mostly of brass--are well illustrated in Plate XI. They represent a variety of household uses and trades. The various articles as drawn need no further explanation except for possible dating. The military button is of the nineteenth century.

The latten spoons with makers' marks are of seventeenth century origin. The rat-tailed pewter spoon is a type commonly used in the late seventeenth and early eighteenth century. The brass "pin" probably was used for holding plumes in hats. The brass upholstering tacks were used between 1675 and 1750 on Jacobean, Queen Anne and early Georgian furniture. The smaller of the brass rings were probably used as grommets, many of which were found on Jamestown Island. The two-tined fork was a type used as early as 1675. The brass clock plate was of the eighteenth century.

A fine selection of ceramic objects came from the Green Spring excavations. Broken pottery was found everywhere. If this is any indication as to the many types of fine Chinese porcelain, delft ware, German stoneware and later English earthenwares, Sir William and those who followed him at this plantation site certainly had diverse origins for their table services. Sir William was not content with the English, Dutch, German and Spanish pottery objects, but had a kiln built at Green Spring from which came locally made utilitarian pottery so commonly found on the site as well as at Jamestown. Undoubtedly, potters were brought either from Jamestown or from the Old World, and established the earliest known Virginia pottery kiln at Green Spring plantation during Sir William's life-- certainly not later than 1675. This Virginia pottery came in the shapes shown in Plate XIV. The clay is of local origin. The paste of the vessels is usually without noticeable sand tempering and ranges from light yellow underfired to a deep brick red when overfired. The ware was left unglazed in some instances. Where the lead glaze was applied it ranged in colors from a light green to a deep burnished brown, and was usually applied to only the inside of the vessel.

Ceramic wares found at Green Spring have been listed under a designation or nomenclature already used by the Colonial Williamsburg

Archeological Laboratory. This system has been accepted in order to standardize the study of colonial ceramics. The names in use by the National Park Service at the Jamestown Laboratory have been almost identical and are now accepted by the staffs of both institutions according to the following wares found at Green Spring:

1. Crude Earthenware
    a. Virginia earthenware made at Green Spring
    b. North Devon Grit-tempered Ware
    c. English made Crude Earthenware
2. Slip-Decorated Ware
    a. North Devon Sgraffito Ware
    b. Earthenware with slip decoration
3. Hispanic Maiolica
4. Delftware (English and Dutch)
5. Whieldon Ware
    a. Agate Ware
    b. Tortoise-shell Ware
6. Creamware
7. Brown Stoneware
8. Gray Stoneware
9. Salt-Glazed Ware

The Virginia earthenware made in the pottery kiln at Green Spring has already been described in a preceding paragraph. Other Crude Earthenware types found at Green Spring include North Devon Grit-tempered Ware and possibly English made earthenware of unknown provenience.

The primitive technique of incising designs in the unfired body for decoration was common in this period from 1640 to 1740 and was found on North Devon Sgraffito Ware. The use of slip or semi-liquid clay for decoration was also common at this time, and examples of Slip-Decorated Ware and Combed Ware were found during the excavations.

Tin-glazed earthenware was popular in Western Europe throughout the seventeenth century, and certain Mediterranean types were imported into America by the Spanish. The English and French also imported the same ware-- called by a number of names including Talavera, Hispano-Moresque, and Maiolica. The term Hispanic Maiolica has been applied to that found at Green Spring. It has a cream to buff colored body or paste covered by an opaque enamel on which crude decorations were applied by brush either while the vessel was on a wheel or by hand, or both. The motifs are usually banded and floral in blue, purple, and black colors. A few examples of Hispanic Maiolica were unearthed at Green Spring.

Other tin-glazed wares were made in Holland and England and came to be known as Delftware. As it is most difficult to differentiate between the products of the two countries, they have been grouped under one heading. From associations in the excavations it appears that Delftware was in use at an early period, probably as early as 1650, at Green Spring. The types found consist of undecorated; lobed with blue and purple hand-painted decoration; blue, both dark and light; and blue with red decoration. Shapes include apothecary jars, large and small bowls, porringers, and plates. The majority of the tin-glazed earthenware specimens found at Green Spring fall into this category.

Only three fragments of Whieldon Ware were found. Each has the buff colored paste and represent Agate Ware and Tortoise-shell Ware.

A few fragments of Creamware were unearthed. This ware is also known as Liverpoolware and was exported to America in great quantities. It was developed after 1760 by Josiah Wedgwood following hundreds of experiments. He perfected a greatly improved household ware that became the most popular of all English ceramics. Wedgwood's methods were widely copied by other potters, and they contributed directly to the prosperity which with his lifetime came to the Staffordshire ceramic industry. More of this ware would probably be found in trash pits of the later Ludwell-Lee period.

Brown and Gray stoneware were common to the seventeenth and eighteenth centuries and considerable quantities were unearthed. The fragments show a number of shapes which included mugs, jugs with handles, jars, tankards, and bottles. The Gray Stoneware, of the characteristic German style and workmanship, and probably also of German origin, was a household and commercial ware. The examples bear boldly defined areas colored with intense cobalt blue against a light background.

Salt-glazed ware, a fine white glazed finish on stoneware, was produced by throwing quantities of salt into the kiln when the heat was at its highest. This highly glazed ware came in teapot, mug, and plate shapes at Green Spring.

Next to ceramics glass fragments were the most numerous objects excavated. Most of the fragments are of green wine bottles. Gin and rum bottle fragments of the same color were found but not in great numbers. Window glass came in both diamond-shaped and rectangular-shaped quarrels. One interesting piece of quarrel had the name Lucy cut into it. Could this have been done by one of the Ludwell girls?

A few fragments of clear wine glasses and wine glass stems were found. A portion of a large green glass punch bowl was pieced

together from the broken pieces but not enough was found to determine its full size or shape.

Clay pipes became very important in the economy of the colonies and, as a matter of fact, in countries which adopted that manner of using tobacco in the sixteenth and seventeenth centuries. From an archeological viewpoint, the chief interest lies in the dating of these pipes and identifying their place of manufacture. At the present time the dates may vary as much as ten or twenty years. The dates shown on Plate XVI are tentative but to the best of our knowledge are accurate. Future work in this field will make it possible to date pipes more accurately.

The pipes found at Green Spring fall into the period from 1640 to 1800, with very few exceptions. A description of the various types is unnecessary since they are well illustrated. In addition to the English pipes, similar types fired in reddish clay appear to have been made locally. The greatest number of clay pipes of both types are those shown in the bottom group in the upper left section of Plate XVI. Of over 300 pipe bowls and bowl fragments found, 68 appear to be of this type. Virginia-made pipes of the same type were found. These local reddish specimens appear to have been made in pipe machines with the same molds as their English cousins.

It will be noted that the pipes were made with "heels" or "spurs". The earliest pipes were the smallest in size. From those found in Jamestown and in London the very early types were almost identical to the two Green Spring examples but much smaller, about one-half the size. Marks often appear on the bottoms of the heels. These are very helpful in identifying the maker and dating the period. In later years the heels appear to have become spurs.

In the colonies some pipes without spurs were imported from England, and a few without spurs or heels were also made in Virginia. According to one reference (Price, 238-9) one such pipe was found in England and attributed to the time of William III. This fits into the chronology of Plate XVI. To further elaborate on this type of spurless pipe which is found in quantity at Green Spring, it is believed that it was made in England for the export trade only. Many are "LE" pipes (Plate XVI, lower left). Perhaps these pipes were made in this manner because of the fact that the spurs broke off during shipment. They were copied in Virginia, both in pipe machines and by hand. Many of the hand-made specimens were decorated. These "roulette-like" decorated pipes (Stewart, no page) could well have been manufactured at Jamestown for trade purposes.

Further marking and decoration are found on many of the stems of both the English and Virginia-made pipes. Most of those found at

Green Spring are illustrated in Plate XVI. The Virginia-made pipes are illustrated slightly darker than the English-made types.

Methods of dating pipes have been followed from a number of sources, (Oswald, 157; Harrington, no page; Price 230-240). As stated previously, the dates on Plate XVI are not to be taken as final. Further studies may bring slightly different dates.

To do credit to the study of Green Spring pipe fragments, a monograph should be written. It is hoped that the information given is sufficient to add to our present store of knowledge without greater detail than is presented here.

Only one nineteenth century red clay glazed pipe bowl was found. This may have been made locally or at Pamplin, Virginia. The stems were made out of Virginia reeds which grew in the Dismal Swamp area in southeastern Virginia.

CONCLUSIONS

From the study of ceramics; metal wares; wine bottles and other glass wares; smoking pipes; tiles and bricks, the period when most of the activity took place at Green Spring appears to have been from about 1650 to 1700. Fully 40% of the artifacts appear to be of the period from 1650 to 1675. About 25% of the artifacts fall into the period from 1675 to 1700. The remainder would be 10% from 1700 to 1750 and 10% from 1750 to 1800.

The excavations of the first large country house in America are important in their findings. Here in Virginia we had a Royal Governor living in the grand manner. He was a gentleman surrounded by persons of importance, and his station decreed that he live in such a style. Coming from England he brought with him the idea of the type of manor house of the times-- replete with two medieval towers. Although it was more than a mile from the river, it faced west toward the river.

Sir William Berkeley's plantation was about self-sufficient in its physical setup. Here, besides his experiments in agriculture, he had practically all the elements necessary to completely sustain his community in the wilderness. It is difficult for us today to realize that here in Virginia, in the middle of the seventeenth century, flourished an estate which had servants and slaves in number. There were special buildings for artisans where spinning and weaving, glass blowing, pottery making, silk culture, woodworking, tool and implement making, and even a distillery and a winery, were undoubtedly part of the plan.

The excavations at Green Spring add greatly to our knowledge of the architecture, and life and customs of Colonial Virginia, extending from the second half of the seventeenth century to the middle of the eighteenth century. This period, when plantation life was becoming well established, extends from the time when Jamestown was a thriving town (circa 1649), into the first manifestations of the flowering of English culture at Colonial Williamsburg.

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ILLUSTRATIONS

MAPS:

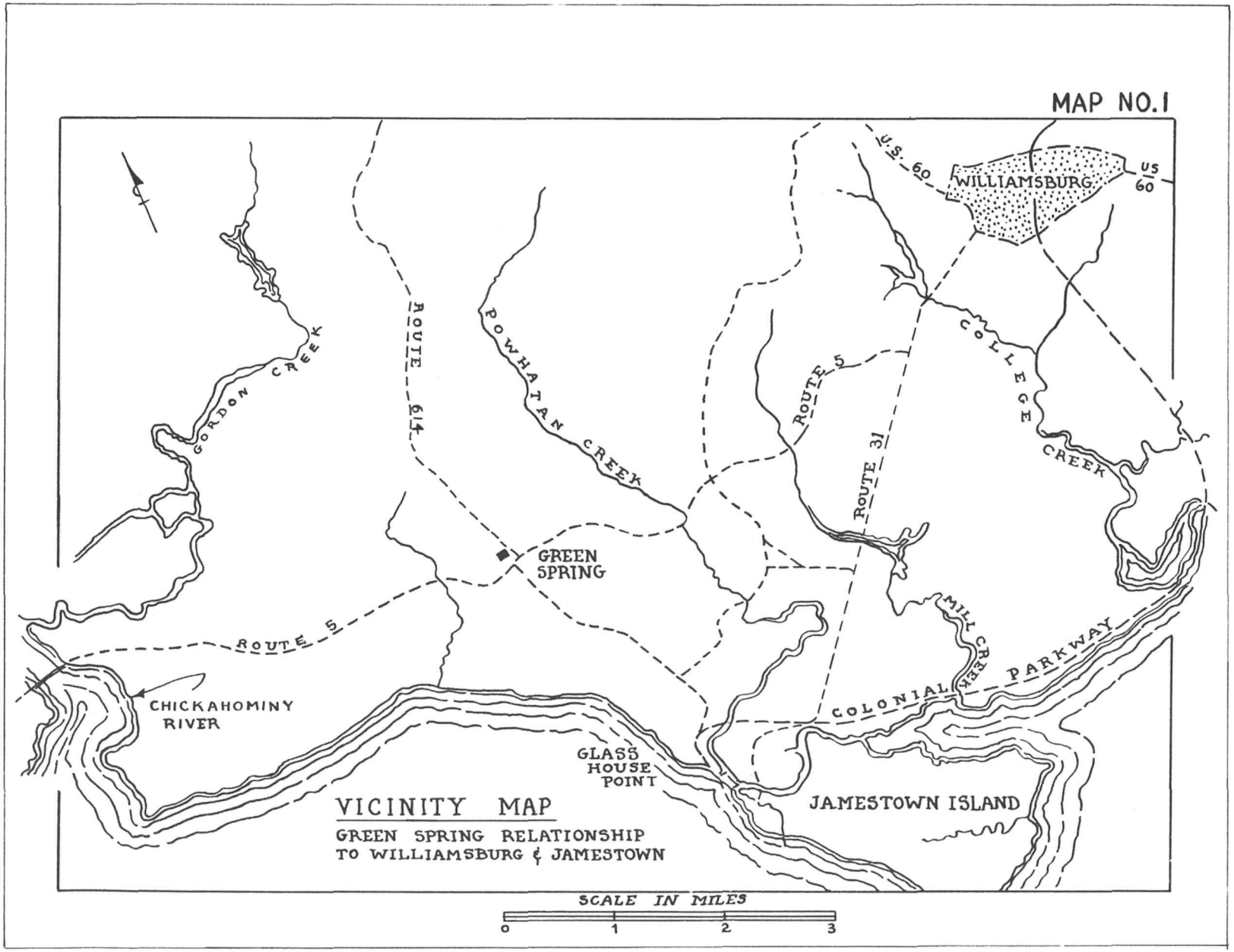
No. 1 Vicinity Map
No. 2 Topographic Map
No. 3 Green Spring Foundations
No. 4 Isometric Plan of Foundations
No. 5 Dimmick Ground Plan
No. 6 Desandrouins Map of 1781

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Frontispiece - Aerial View of Green Spring
I General View From West Showing Excavations
II General View From East Showing Excavations
III West Garden Wall
IV Features in Room J
V Pottery Kiln
VI East Garden Wall
VII Area H
VIII East Drainage System
IX Iron Objects
X Iron Objects
XI Metal Objects
XII Glass Bottles
XIII Glass Bottles
XIV Pottery Kiln Reconstruction and Green Spring Crude Earthenware
XV Fragments of Blue-Decorated Chinese Porcelain
XVI Clay Pipes
XVII Pottery Chart

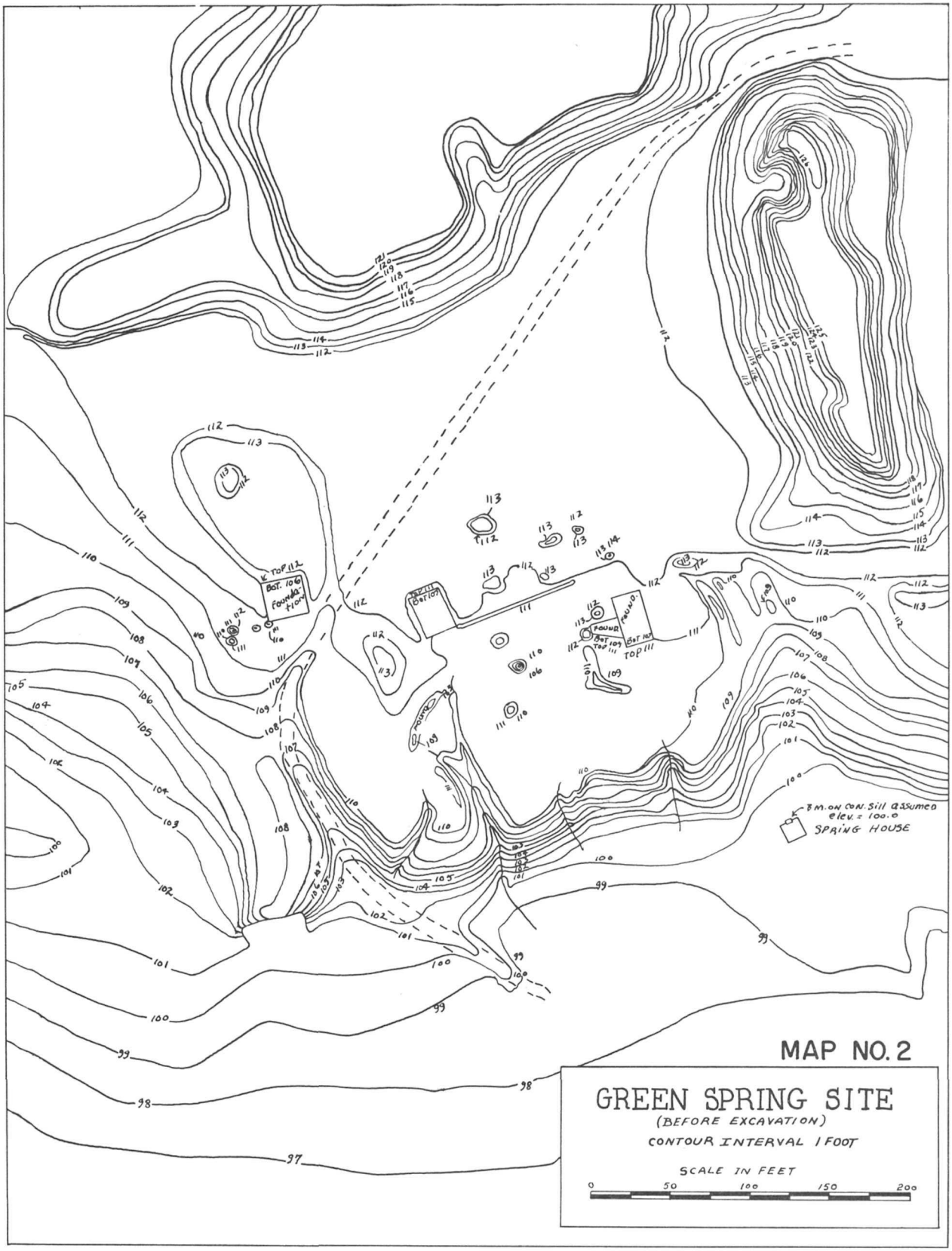
82353

MAP NO.1

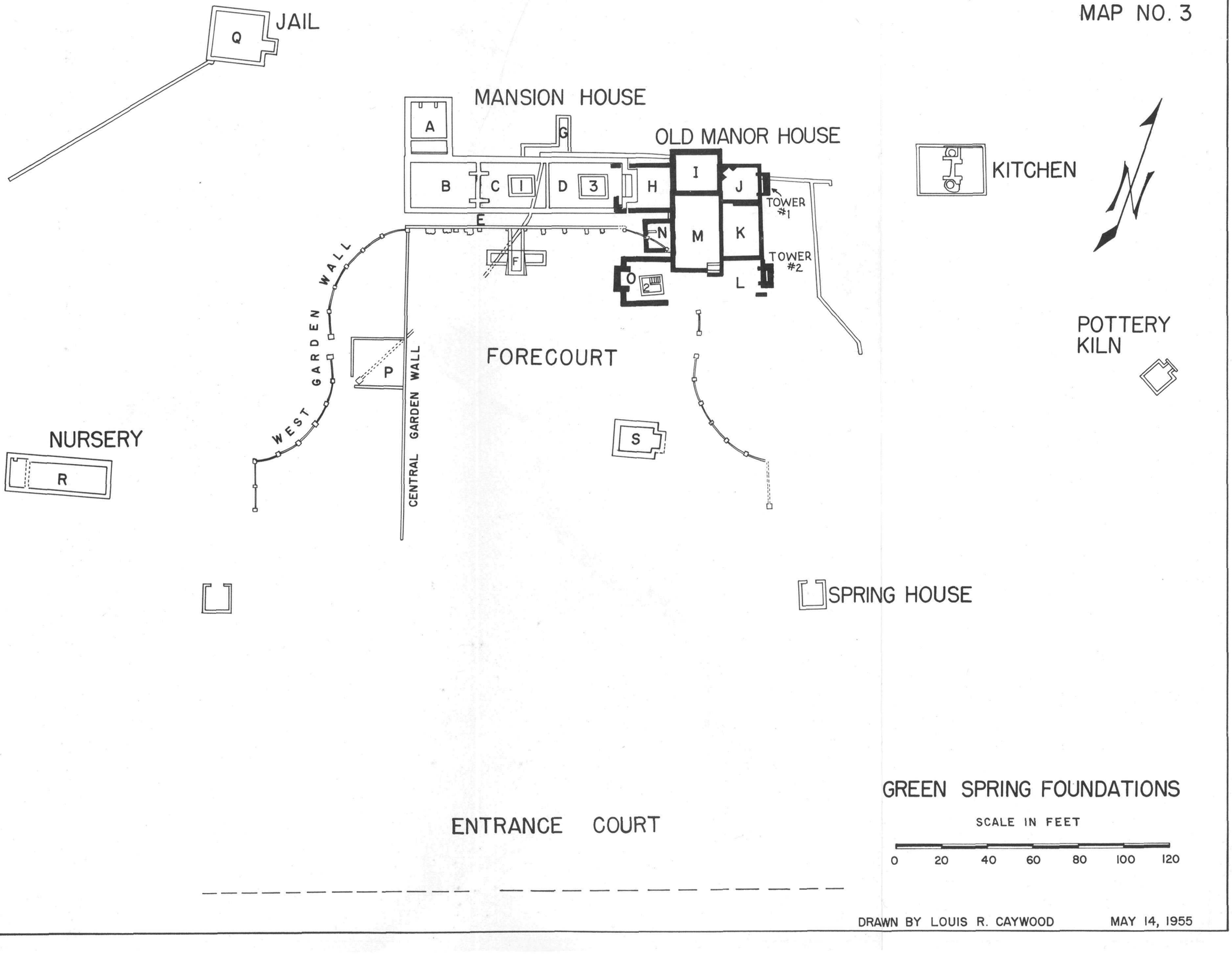


VICINITY MAP

GREEN SPRING RELATIONSHIP TO WILLIAMSBURG & JAMESTOWN


B.M. ON CON. SILL ASSUMED ELEV. = 100.0
SPRING HOUSE
K TOP 112 BOT. 106 FOUNDATION
TOP 111 BOT 107
FOUND.
BOT 109 TOP 111
BOT 107
TOP 111
MAP NO. 2
GREEN SPRING SITE
(BEFORE EXCAVATION)
CONTOUR INTERVAL 1 FOOT
SCALE IN FEET
0 50 100 150 200

MAP NO. 3



GREEN SPRING FOUNDATIONS

SCALE IN FEET

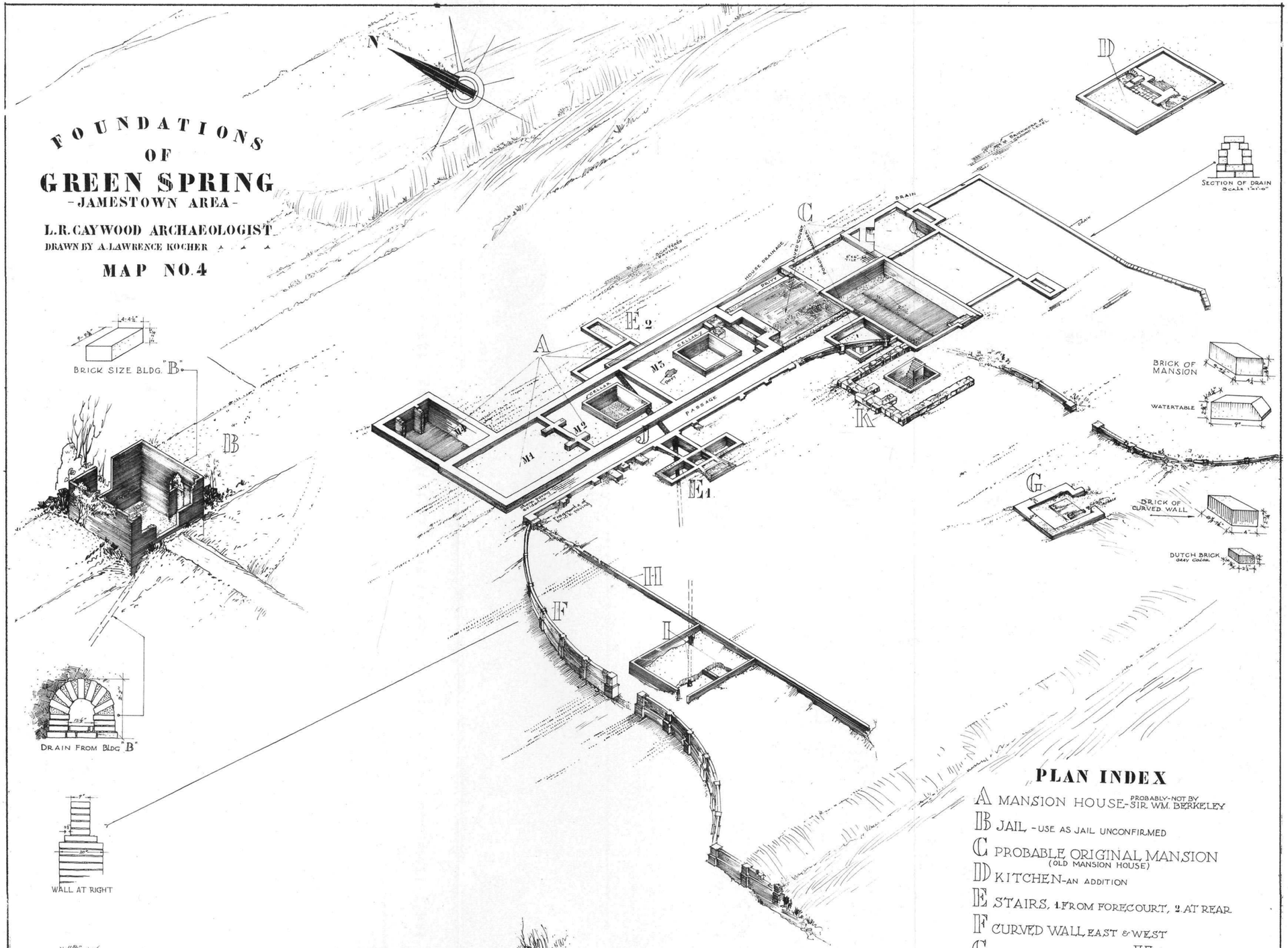
0 20 40 60 80 100 120

DRAWN BY LOUIS R. CAYWOOD MAY 14, 1955

FOUNDATIONS OF GREEN SPRING
-JAMESTOWN AREA-

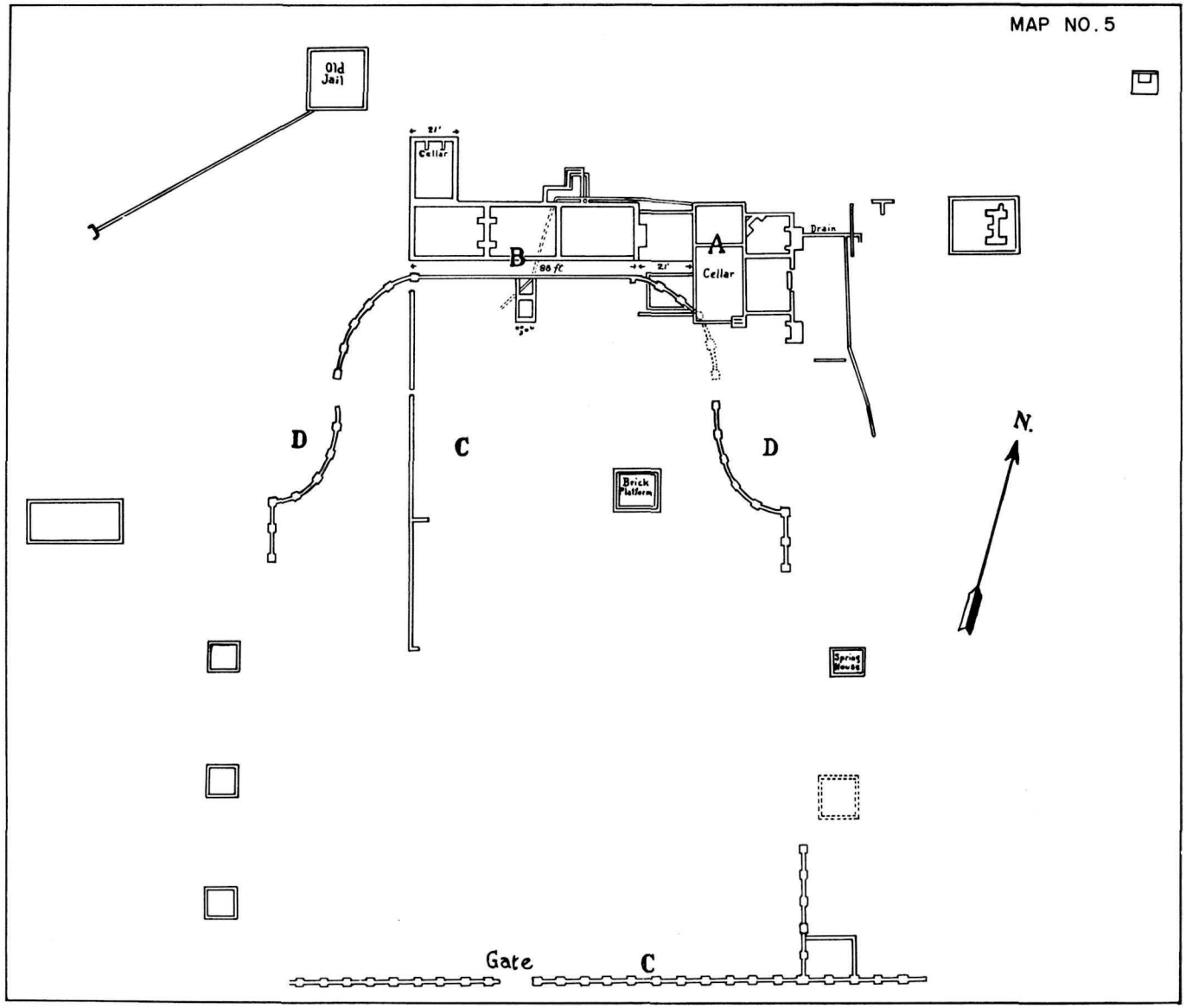
L. R. CAYWOOD ARCHAEOLOGIST
DRAWN BY A. LAWRENCE KOCHER

MAP NO. 4



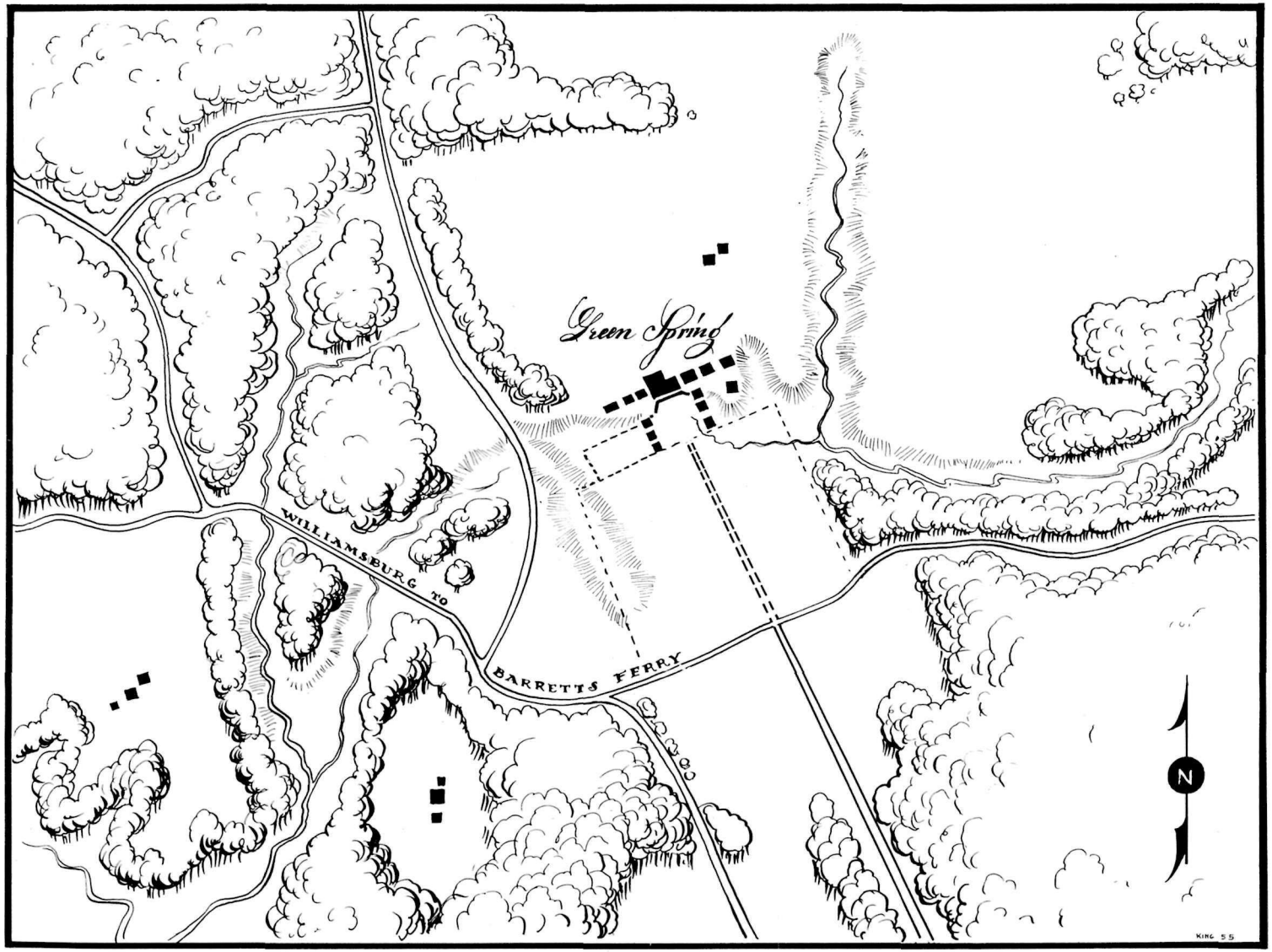
PLAN INDEX

A MANSION HOUSE-PROBABLY-NOT BY SIR WM. BERKELEY
IB JAIL - USE AS JAIL UNCONFIRMED
C PROBABLE ORIGINAL MANSION (OLD MANSION HOUSE)
DD KITCHEN-AN ADDITION
E STAIRS, 1. FROM FORECOURT, 2. AT REAR
F CURVED WALL EAST & WEST
G SMITHERY-PROBABLE
H EARLY WALL
I CATCH BASIN-END OF DRAIN
J GALLERY UNDER PORCH
K STONE FOUNDATION WITH CELLAR
L GREEN HOUSE



From a plan in the *William and Mary Quarterly,* Second Series, IX (1929), pp. 128-9. Article on "Green Spring" by Jessee Dimmick.

MAP NO. 6



From Colonel Desandrouins' 1781 map of the Battle of Green Spring.



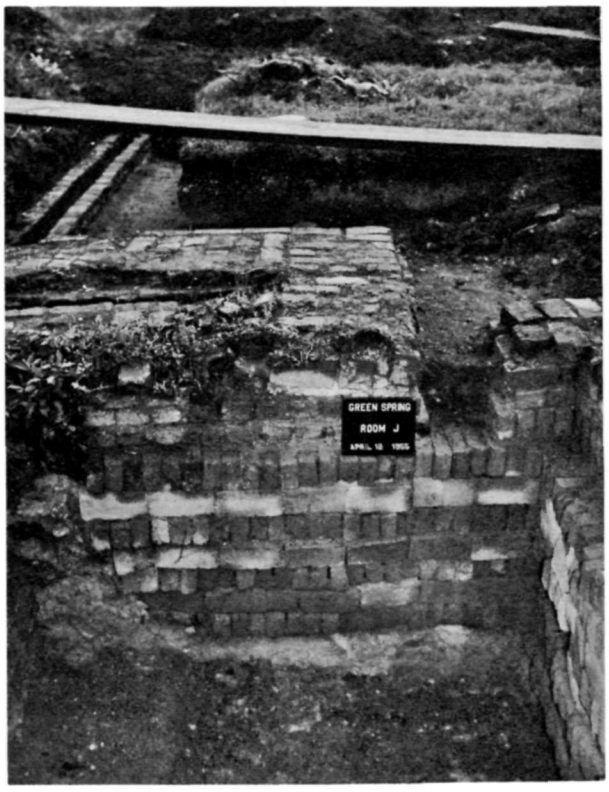
PLATE I: General view from the west during excavations.



PLATE II: General view from the east during excavations.



PLATE III: The trench to expose the bottom of the curved west garden wall foundation reached a depth of 6 feet. In the distance are trenches to test the fill in the entrance court.





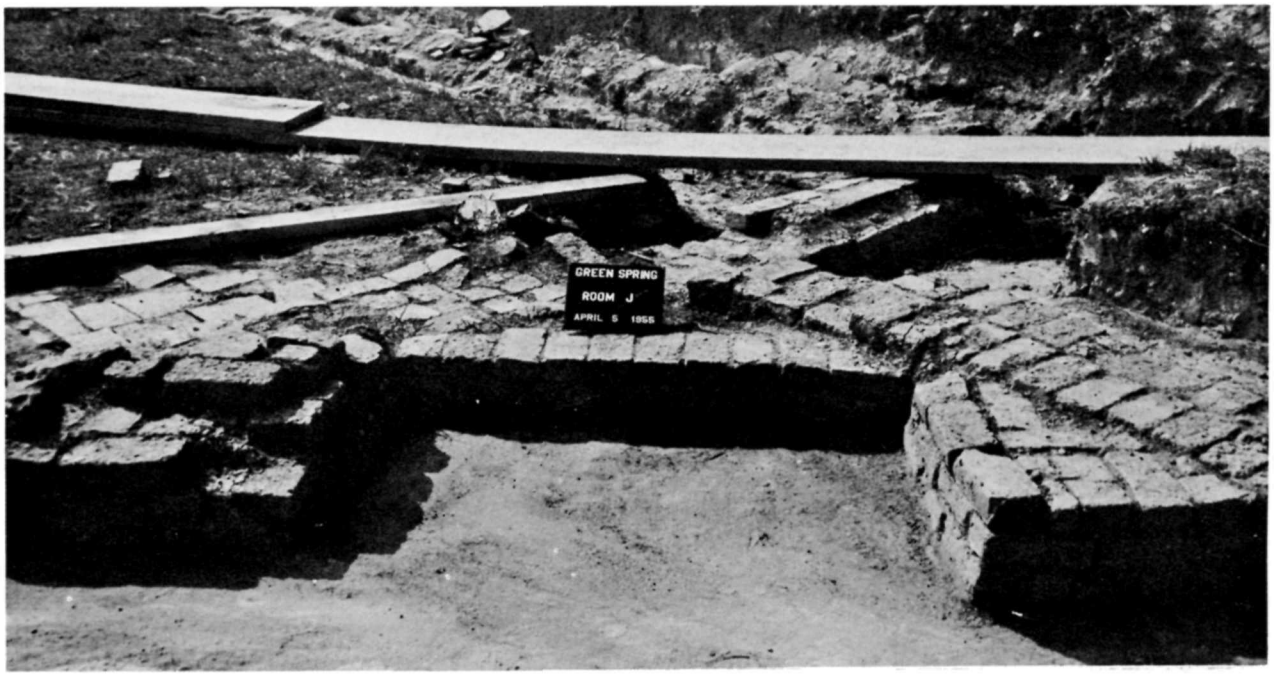


PLATE IV: Features of Room J. *Upper Left:* Foundation in northeast corner of Room J partially beneath Tower No. 1. Brick laid without mortar. Note drain beyond tower. *Upper Right:* Tower foundation showing beginning of drain. *Below:* Corner fireplace.

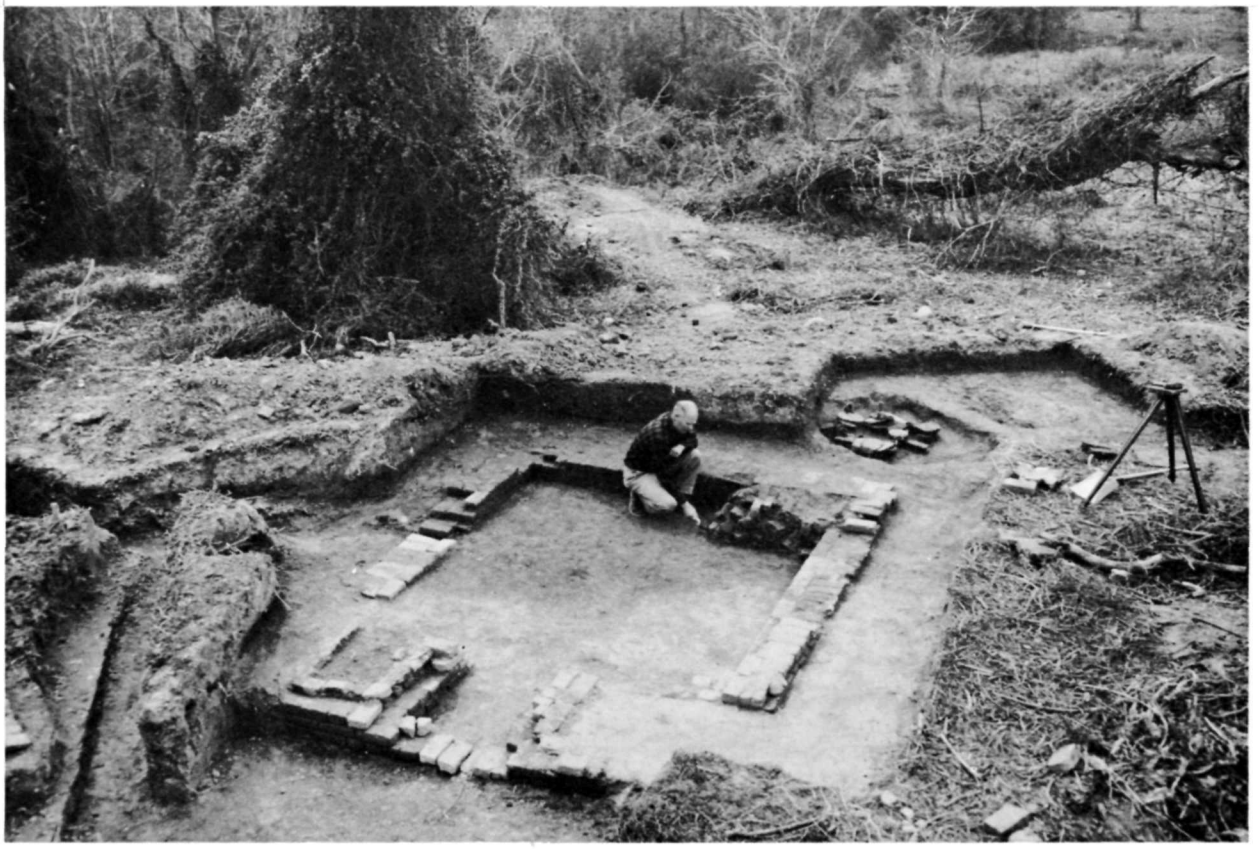




PLATE V: *Above:* Foundations of pottery kiln and cache of tools. *Below:* Pottery rejects found north of kiln.



PLATE VI: East curved garden wall built over Room N. Cellar No. 2 in background.



PLATE VII: Paved flooring of Area H. Intrusion of Room D shown in west end.



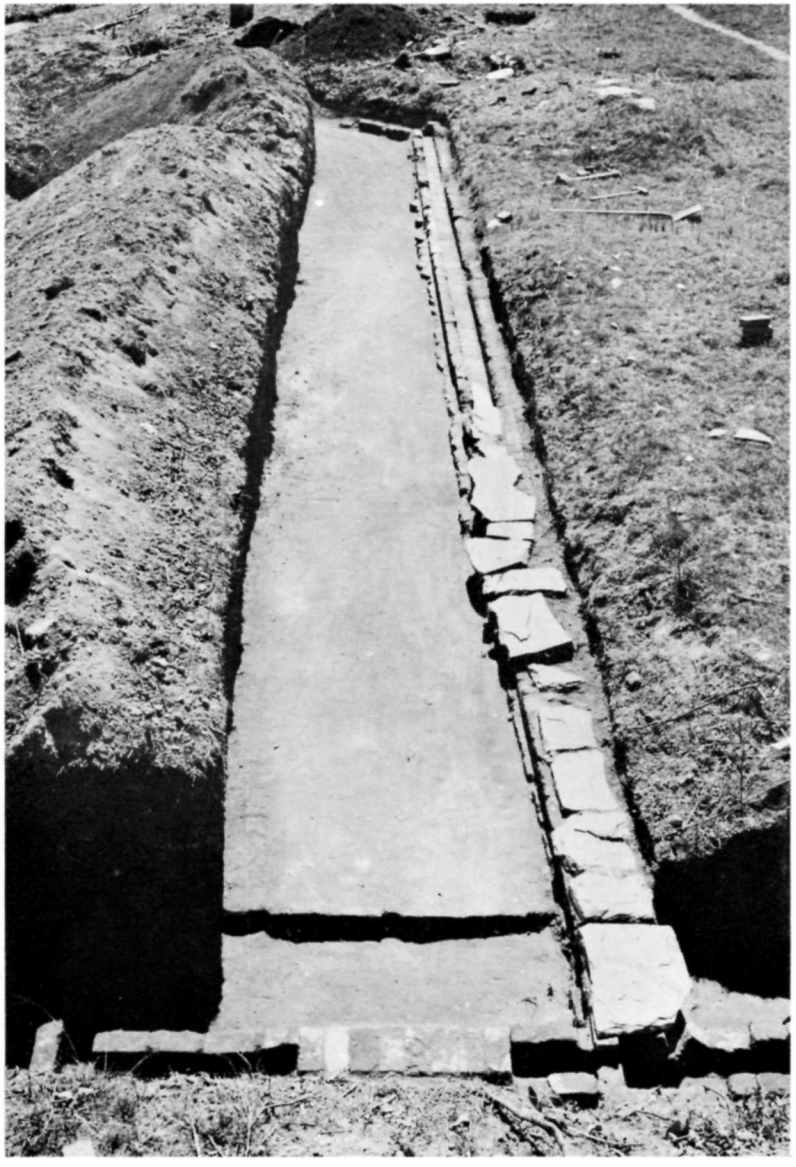
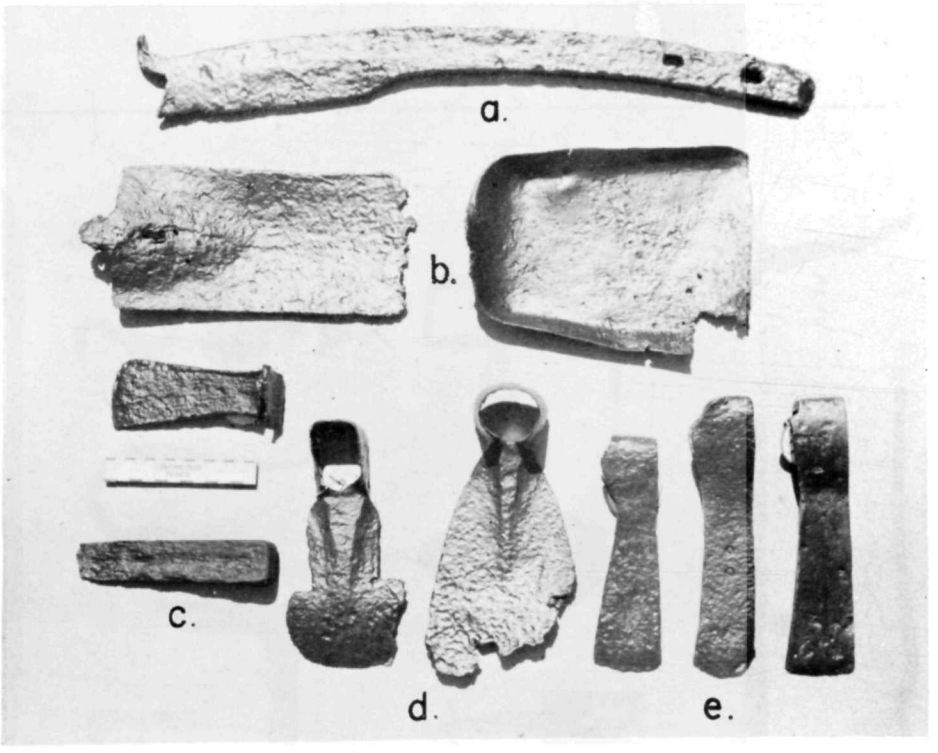


PLATE VIII: East drainage system.



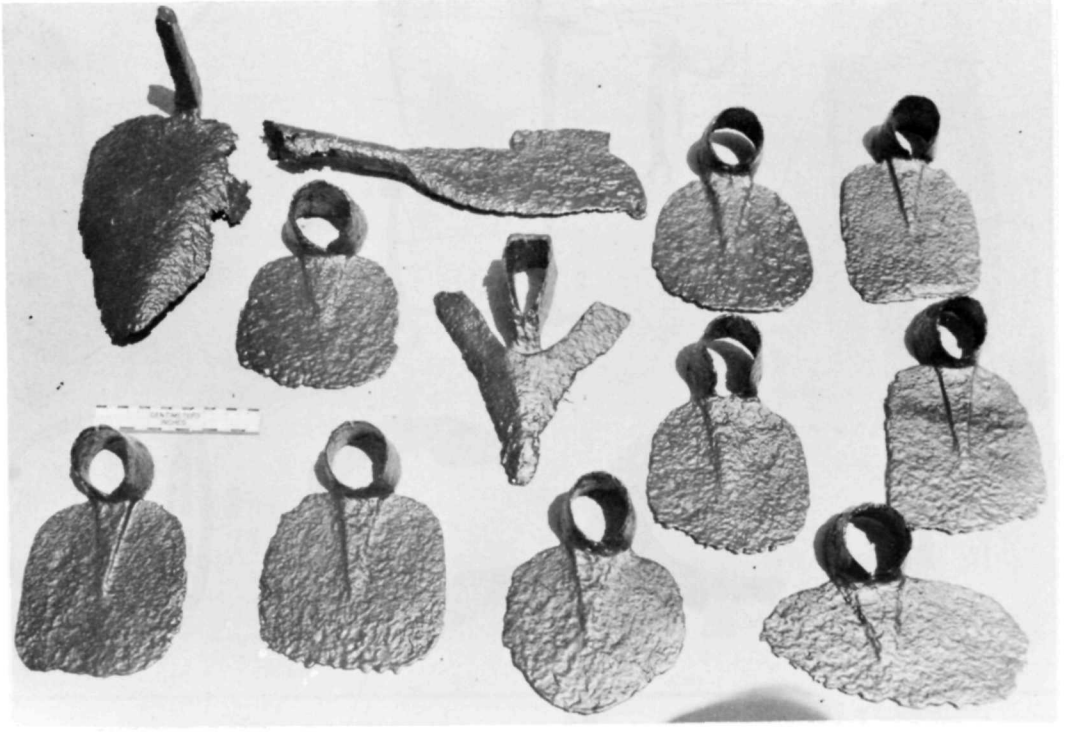


PLATE IX: *Above:* Iron tools: (a) Use unknown; (b) shovels; (c) wedges; (d) hoes; (e) narrow axes. *Below:* Part of a cache of agricultural tools found near the pottery kiln.

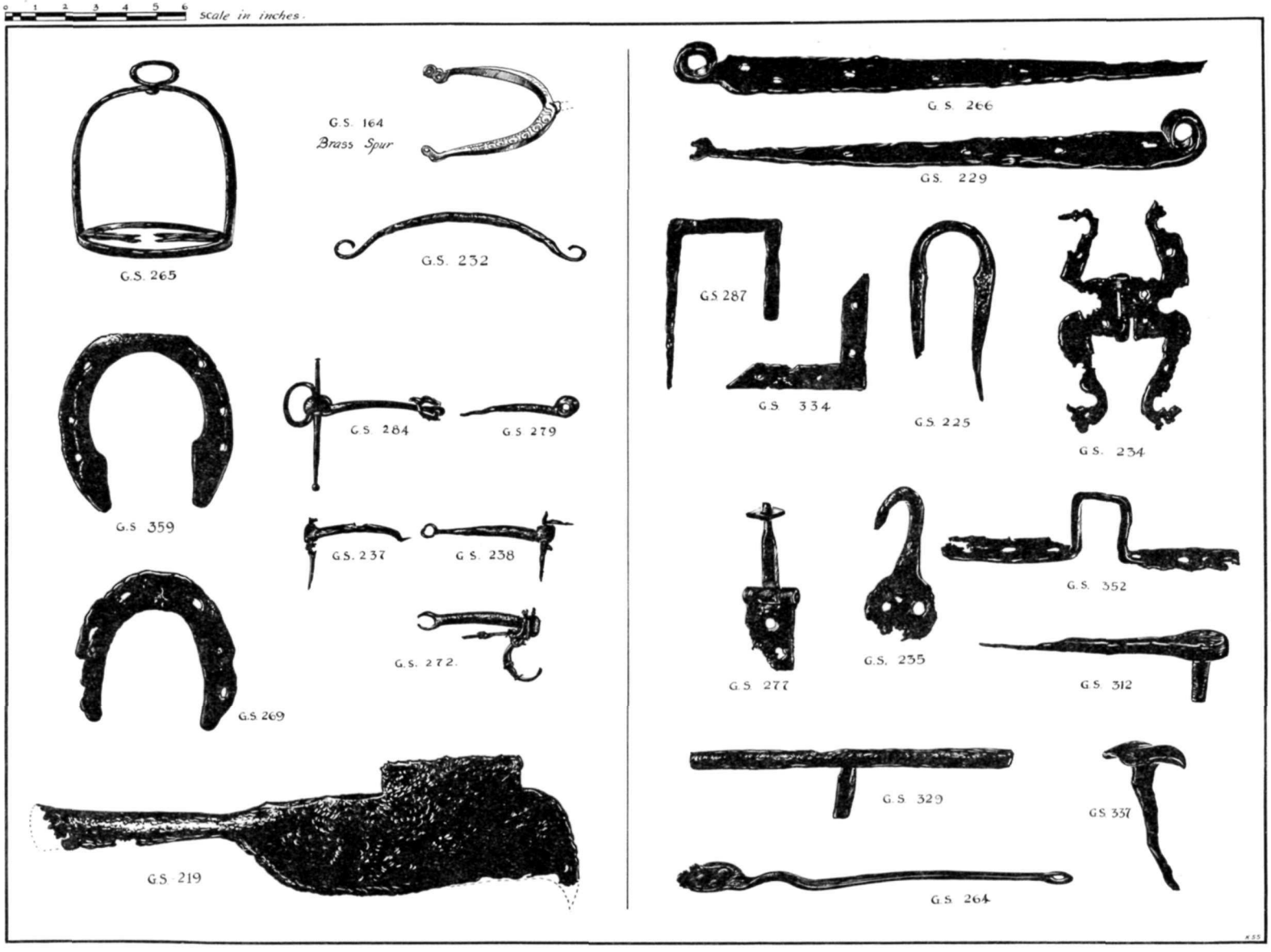


PLATE X: *Left:* Equestrian items: Stirrup, spur, bridle bits, and iron shoes. Lower object (G.S.219): Pole arm or bill. *Right:* Building hardware.

0 1 2 3 SCALE IN INCHES

Thimbles



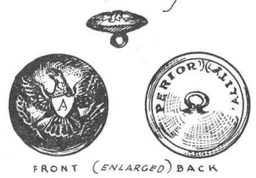
G.S. 184 GS 156 G.S 179 G.S. 162

Brass Buttons



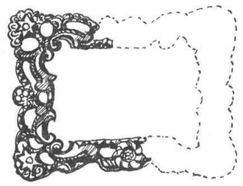
G. S. 180 G. S. 177 G.S. 183

Military



FRONT (ENLARGED) BACK
G.S. 172

Brass Buckles



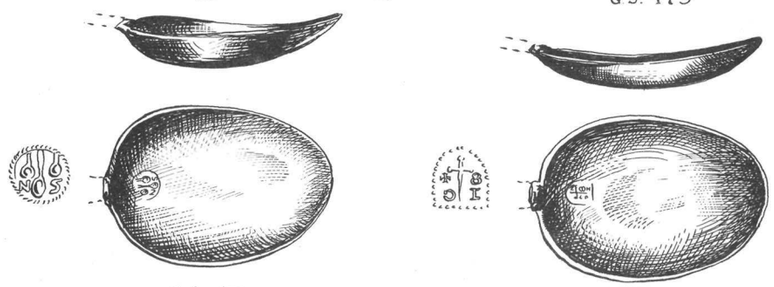
G.S. 158



G.S. 159

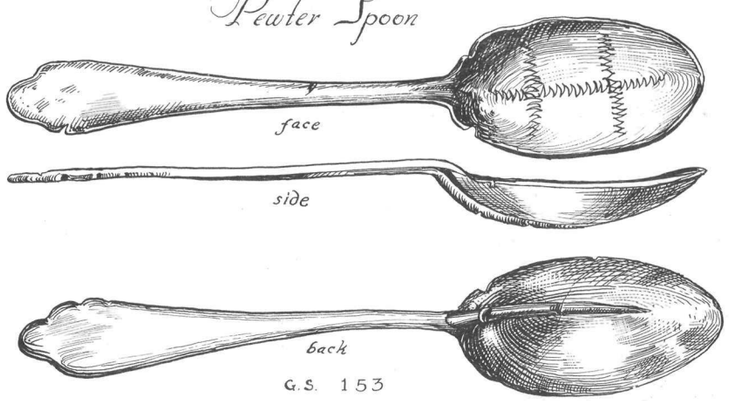
Latten Spoons

G.S. 176 G.S. 175



G. S. 176 G. S. 175

Pewter Spoon



G.S. 153

Brass Pin G.S 165



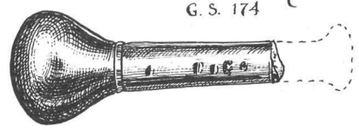


G.S.185 G. S. 160 G. S. 161

Upholstery Tacks

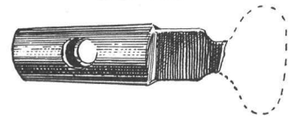
Broken Pestle

G. S. 174

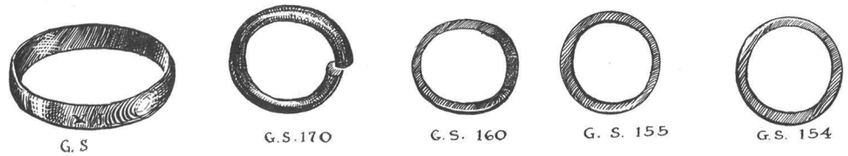


Hollow Brass Petcock Plug

G. S. 168



Brass Rings

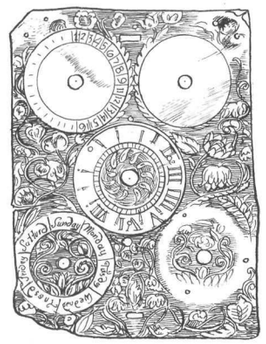


G. S G.S. 170 G. S. 160 G. S. 155 G.S. 154

Two Tined Fork.

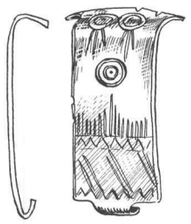


Part of Brass Clock Face



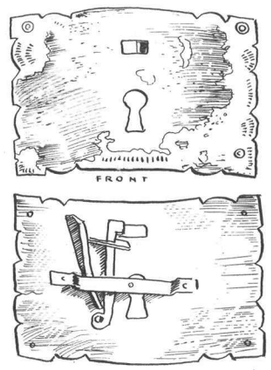
G.S. 167

Brass Book Clasp



G.S. 163

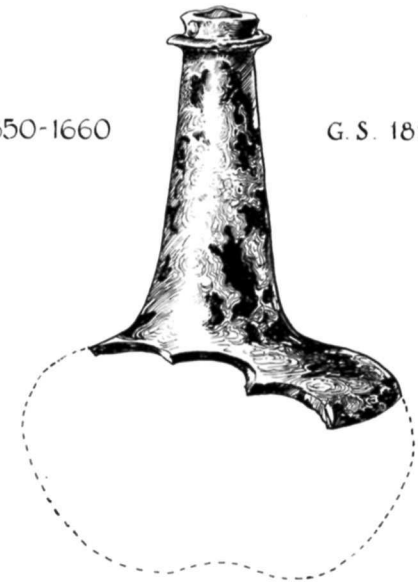
Drawer Lock.



G.S 181

PLATE XI: Metalware objects (mostly of brass) found during the excavations.

1650-1660 G. S. 189

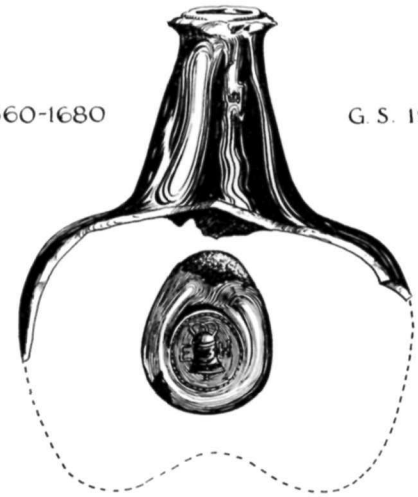


1650-1660



G.S. 190

1660-1680 G. S. 196



1660-1680 G. S. 197

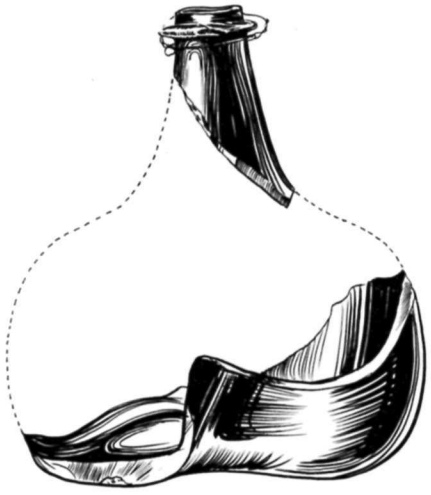


Wine bottle seal made about 1660



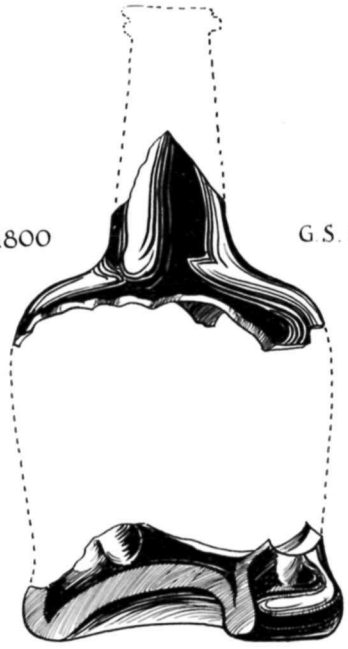
PLATE XII: Green glass wine bottles used in the period 1650 to 1680.

1680-1700 G S. 390



Green Glass
Wine Bottle
(Base & Neck with copper wire)

1750-1800 G.S. 393 a-b



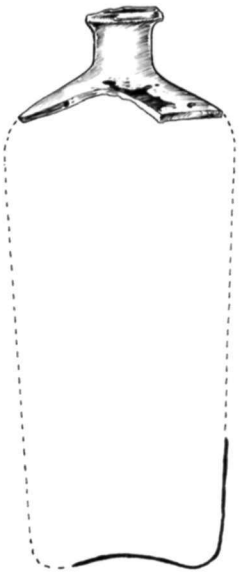
Green Glass
Wine Bottle Neck Base

1690-1710 G.S. 387



Green Glass
Wine Bottle
(WITH COPPER WIRE)

1650-1675 G.S. 392



Green Glass
Gin Bottle Neck



PLATE XIII: Green glass wine and gin bottle shapes of the period 1680 to 1800.





PLATE XIV: *Above:* From the archeological excavations, this reconstruction of the pottery kiln is probably authentic. *Below:* Shapes of some of the crude earthenware found in the reject pile of the pottery kiln. All were glazed inside except the round-bottomed vessel in the lower left. The pitcher in the upper left was glazed both inside and outside. The three thumb impressions on the bottoms of the handles appear to have been typical of Green Spring earthenware.



PLATE XV: Fragments of blue-decorated Chinese Porcelain.

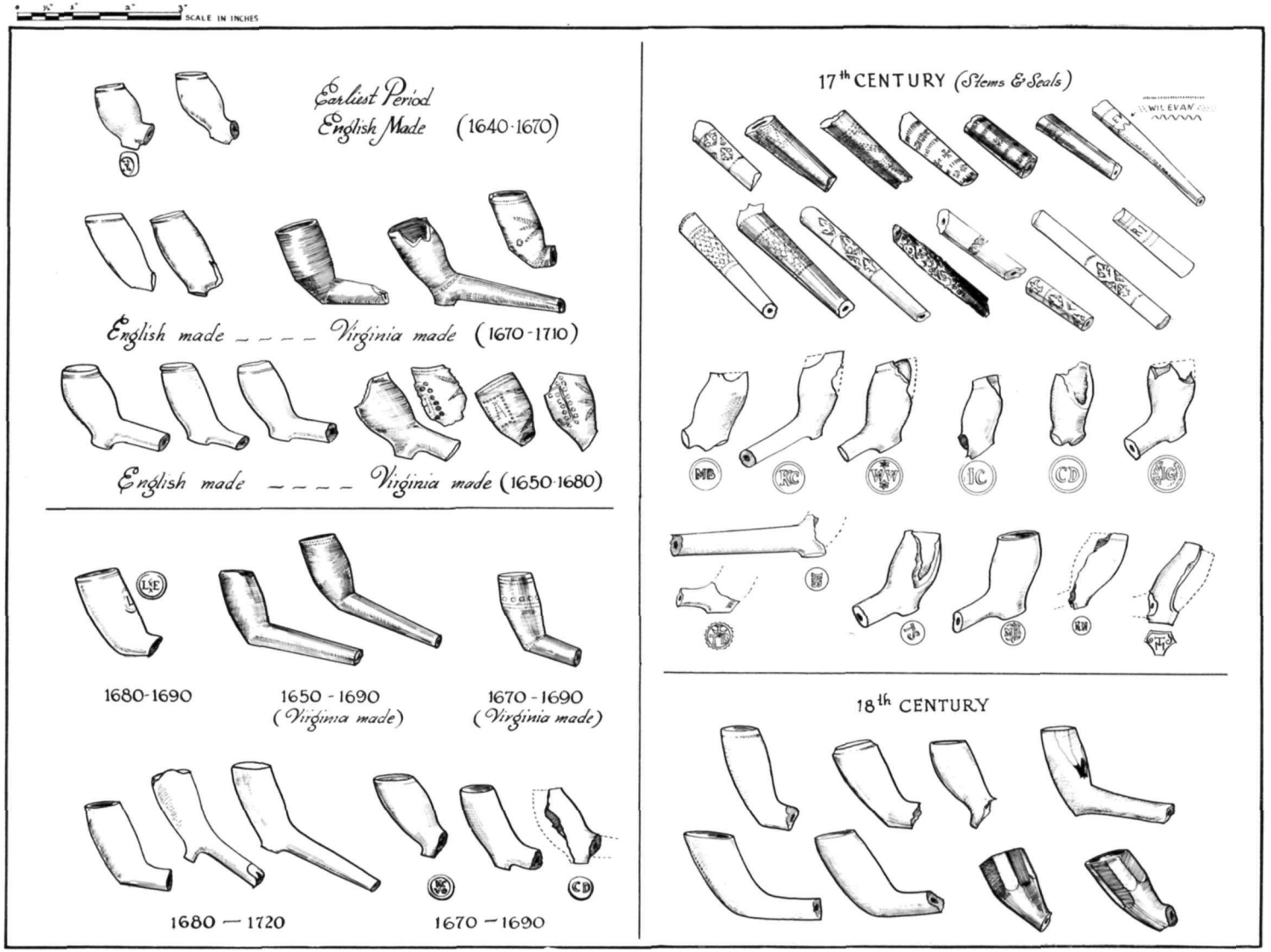


PLATE XVI: *Sequence of Clay Pipes.* Clay pipes found at Green Spring follow a good chronological order as already set up by English antiquarians. The Virginia-made pipes usually followed the style of the time but were manufactured of native clay and fired a brown color rather than the white of the English clay. The dates given are according to present information and could change from additional research.

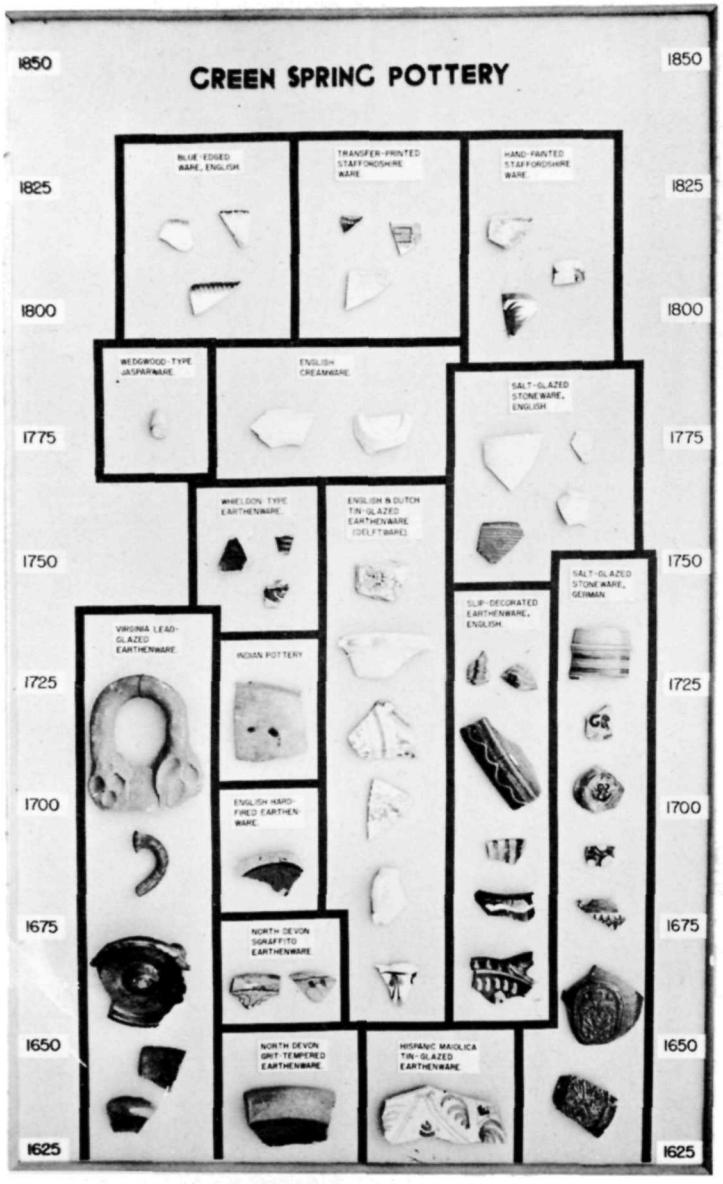




PLATE XVII: *Left:* Chronological sequence of pottery from excavation. *Right:* Top, bat (left) and roof tile. *Bottom:* Large earthenware storage jar.