

**Archaeological Testing and Mitigation
at the Stable Building,
Heyward–Washington House**



**The Charleston Museum
Archaeological Contributions 23**

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Heyward—Washington House**

by

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The Charleston Museum

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Mrs. Joann Chrisman, Heyward House Administrator, and Mr. Neil Nohrden, Historic House Custodian, showed us some of the house's many "secrets." They also worked to ensure the safety of both the archaeologists and the visitors. The house interpreters also worked to include the archaeological work in the house tour.

Special thanks go to architect Glenn Keyes and restoration contractor Richard Marks for their careful attention to archaeology. Both worked hard to protect the archaeological record, and considered damage to the site in their plans. Richard worked carefully during the grading phase to separate and screen all of the disturbed soils. And Glenn devised a plan to leave the significant features open for public interpretation.

Thanks are especially due to Dr. John Brumgardt, Director, and Mr. Brien Varnado, Assistant Director of The Charleston Museum for their far-sighted interest in archaeological research. It is through their efforts that archaeological research, interpretation, and protection are part of the long-range plan for the Museum's historic houses.

CHAPTER I

BACKGROUND

Introduction

Testing in the vicinity of the stable building at the Heyward–Washington house was conducted intermittently in August and September 1991. Over the years, accretion of soil in the central path of the workyard caused rainwater to drain toward the north wall of the stable building, rotting the doors and sills. Remedies for this situation, proposed by architect Glenn Keyes and contractor Richard Marks, ranged from regrading the area to installation of a gravel drainage pit. In any event, these improvements would impact the archaeological record in this vicinity, an area which had not been excavated by Elaine Herold in her 1970s project.

The Heyward–Washington house was built by Thomas Heyward in 1772 and was visited by George Washington in 1791. It was saved from certain destruction by The Charleston Museum and the Society for the Preservation of Old Dwellings in 1929. Since that time it has been operated by The Charleston Museum and open to the public. In recent years, The Charleston Museum has considered the house integral to its general mission to preserve and interpret the social and natural history of Charleston and the Lowcountry. House interpretation has been revised to focus on the role of the property in the general history of the city, and on all of the site's previous residents. Greater attention to the work yard, the outbuildings, and all related resources, including archaeological remains, is part of the new approach.

Previous Research

The Heyward house is the scene of the most extensive archaeological excavations in Charleston to date, and the project conducted by Dr. Elaine Herold is still in progress. Herold conducted excavations, mostly on a volunteer basis, from 1973 to 1977. The areas excavated include the cellar, the area around and beneath the kitchen, the privy, and most of the yard area between the kitchen and the front of the stable, the driveway beside the house, and the small area between the front of the house and the sidewalk. A map of Herold's excavation is shown in figure 2.

Herold conducted her excavations in five foot squares, and they were excavated in natural levels, whenever possible. The materials were hand excavated and screened through 1/2 inch mesh. Field notes, maps, and photographs were kept, and over 500 cubic feet of artifacts were collected. The materials have been catalogued, and a preliminary report has been produced. (Herold 1978). This preliminary report summarizes the history of ownership of the property and

discusses some of the larger features and artifacts recovered at the site. Herold is still writing the final report for this largely volunteer project.

Dr. Herold is still in possession of all field notes, maps, and photographs. Some secondary maps of features are available. Because Dr. Herold is still working on her research, the present document will not attempt an overall synthesis of Heyward house archaeology. It will instead discuss the 1991 work in relation to Herold's preliminary interpretations, and in the context of a general synthesis of the Charleston landscape (Zierden and Herman 1993).

Role of the Present Project

Archaeological research and protection are part of the general management plan for all three of the Museum's historic houses. All of the excavations, whether they are designed for research purposes or, as in the present case, to mitigate the effects of renovations to the property, are guided by a series of long-term research questions for the city (Rosengarten et al. 1987; Zierden and Calhoun 1984). These various questions have recently been united under the umbrella of a landscape approach to Charleston's development. This approach embraces the idea of a cultural landscape, the modification of land according to a set of cultural plans, embodying often inseparable technological, social and ideological dimensions. People used these created landscapes in a planned and orderly manner for everything from food production to formal design to explicit statements about their position in the world. The landscape approach has been successful in synthesizing a variety of data, and has allowed the presentation of public interpretations in a succinct manner.

Archaeological excavation projects at the Museum's historic houses, whether small or large, have three concurrent goals:

- 1) to provide direct evidence to answer specific questions about site features and their evolution.
- 2) to contribute information to public interpretation of the house and grounds as relevant to the social history of Charleston.
- 3) to contribute data to the ongoing study of the urban landscape and the social meaning encoded in its features and layout.

Urban Archaeology and the Heyward Site

The Heyward house is one of six large townhouses and one of twenty Charleston sites to be investigated in the past decade. Eleven years of archaeological research in Charleston has produced a controlled data base from twenty sites and supporting information from many others (figure 1). The individual projects have been united under a long-term research design.

Sites excavated in Charleston

Dual function sites

1. Charleston Place
2. McCrady's Longroom
3. Lodge Alley/38 State St.
4. First Trident
5. Atlantic Wharf
6. Exchange building
7. Beef Market
8. Visitor's Center

Townhouse sites

9. Aiken—Rhett
10. William Gibbes
11. John Rutledge
12. Miles Brewton
13. Joseph Manigault
14. Heyward—Washington

Single house sites

15. 66 Society St.
16. 40 Society St.
17. 70 Nassau St.
18. President St.

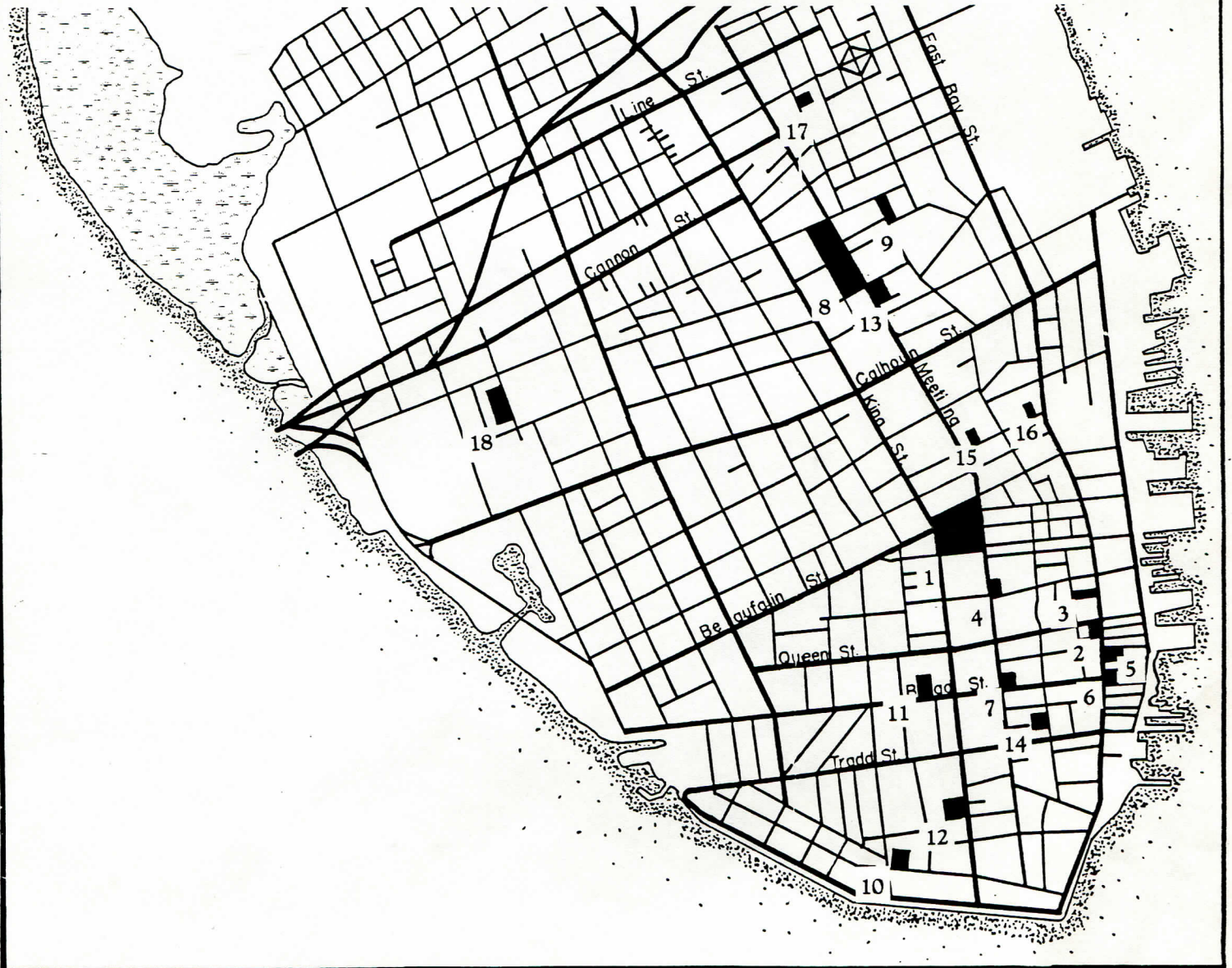


Figure 1

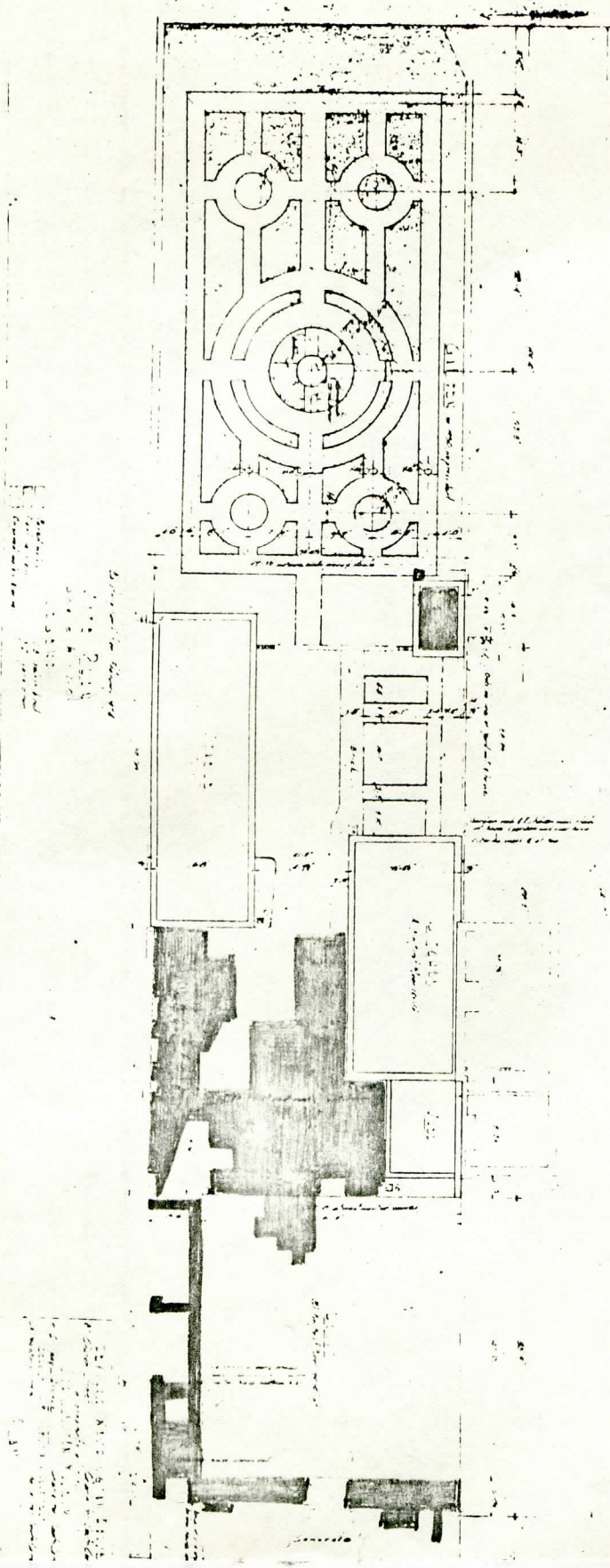


Figure 2

Shaded areas indicate the location of excavations by
Dr. Elaine Herold, 1973-1977
(from Herold 1978).

At the same time, operation of the urban archaeology program under the auspices of The Charleston Museum has provided direct opportunities for public dissemination of archaeological data; these range from exhibits of archaeological interpretations and material to direct integration of interpretation at the museum's three historic houses and Dill Sanctuary. Archaeological research in Charleston has been interdisciplinary in nature, and archaeologists have worked closely with a zooarchaeologist, palynologist, ethnobotanist, historian, and architects. The contributions of these scholars have been integral to ongoing interpretations.

The development of archaeology in Charleston parallels the development of the field in many of the nation's cities. Investigations began with a few isolated projects, essentially descriptive in nature. A number of research efforts initiated in Charleston in 1981 served to bring the city into the mainstream of urban archaeology. These included large-scale, federally funded work at the Charleston Place site (Honerkamp et al. 1982), the expansion of artifact studies (Herold 1981; Singleton 1982, 1984), and the initiation of focused archival research sponsored by the City (Calhoun and Zierden 1984; Calhoun et al. 1982; Zierden and Calhoun 1982, 1984).

The archival research served as an archaeological survey of the city, leading to predictions of site location, type of activity, and length of occupation throughout the city. The two year project was funded by Community Development grants from the City and matching Historic Preservation grants administered by the South Carolina Department of Archives and History. Based on the length and density of human occupation of the urban center, the entire peninsular city below the cross-town is considered a vast, contiguous archaeological site with many components. In order to expand research into Charleston Neck, a second archival study was conducted. The project concentrated on 19th century suburban areas, and on Charleston's industrial growth. Many of the original research questions were refined and new ones proposed (Rosengarten et al. 1987).

An outgrowth of this research was the formulation of long-term research goals for the Museum's Urban Archaeology Program. In subsequent years, the approach has been successful. Most of the archaeological projects in the city, including the present one, are small in scale. By addressing broad issues on a continuing basis, the projects are united in a comparative framework. This approach has produced a number of synthetic articles by a variety of scholars using Charleston data (Honerkamp and Fairbanks 1984; Reitz 1986, 1992; Reitz and Zierden 1991; Singleton 1984; Zierden 1992, 1993; Zierden and Calhoun 1986, 1990; Zierden and Herman 1993).

During and after completion of the research design, excavations focused on sites located in the commercial core. Occupied since the early colonial period, all of the sites served a dual function as businesses and residences, and were built upon several times. Many had served as rental property, and the function and configuration of the properties changed constantly. The limited time available for the study of such complex sites resulted in incomplete documentary data on site owners, occupants, and activities. Therefore, equation of specific excavated proveniences

with site occupants, the traditional approach in historical archaeology, was not possible (see Brown 1987; Honerkamp 1987).

The dual commercial sites include retail, craft, and residential areas such as Charleston Place, First Trident, Lodge Alley, 38 State Street, and the Visitors Center (Honerkamp et al. 1982; Zierden and Hacker 1987; Zierden et al. 1983a, 1983b; Grimes and Zierden 1988), the Beef Market (Calhoun et al. 1984), two waterfront dumps at the Exchange building and Atlantic Wharf (Herold 1981; Zierden and Hacker 1986a; Zierden n.d.) and a tavern at McCrady's Longroom (Zierden et al. 1982).

The ten residential sites are, with two exceptions, located in what were suburban areas of the late 18th or early 19th century and contain original standing structures dating to those periods. Their continuous use as residential property to the present facilitates study of domestic evolution in Charleston. Those double houses (homes of the gentry) that were built in the suburbs include those of William Gibbes (1772), Joseph Manigault (1803), and William Aiken (1817). Others were built on lots closer to the core city. Miles Brewton's 1769 house was the first on the lot; John Rutledge's 1763 and Thomas Heyward's 1772 houses were rebuilt on previously occupied lots (Zierden et al. 1987; Zierden 1992a; Zierden and Grimes 1989; Herold 1978; Zierden 1990; Zierden et al. 1986). The four middle class sites include 66 Society, 72 Anson, and 40 Society, rebuilt on Ansonborough lots after the 1838 fire (Zierden et al. 1988; Zierden 1989; Zierden and Anthony 1993) and 70 Nassau Street, built in the Charleston Neck in the 1840s (Zierden 1990a). All properties retain their residential landscape characteristics. More extensive and more recent work has been conducted at the residential sites, and these data have formed the core of information on the Charleston landscape; however, the commercial sites have also informed the interpretations presented here.

Specific questions to be addressed in the present study include site formation processes and the urban landscape. Interpretations will be based on the modest data base retrieved during the present project and on comparative data from previous projects, including Herold's reported work at the Heyward site.

1) Site Formation Processes – In order to properly interpret an archaeological site, it is first necessary to understand the processes responsible for the formation of that record (Schiffer 1977). An archaeological site consists of a natural setting altered by the humans who occupied that site. Specifically of interest are those activities which introduce materials into the ground and reorganize them after deposition. Urban sites, particularly the Heyward site, are often a complex combination of such events. Site formation processes on suburban sites are somewhat different and less complex than those in the densely occupied commercial core.

2) Artifact Patterning – Site formation processes also affect the artifact patterning at a site. Other factors include technological developments and changes in consumer behavior. For the first time, the artifacts from separate temporal components at a variety of sites are compared. This

initial examination is conducted in an attempt to delimit characteristics of the temporally discrete artifact assemblages and changes in these through time.

3) The Urban Landscape – The landscape approach to investigation of urban sites encompasses many of the issues previously discussed separately, such as subsistence strategy, health and sanitation, lot layout, and socioeconomic status. This approach in Charleston embraces the idea of a cultural landscape, the modification of land according to a set of cultural plans, embodying often inseparable technological, social, and ideological dimensions. People used these created landscapes in a planned and orderly manner for everything from food production to formal design to explicit statements about their position in the world. Previous data on this topic is summarized in relation to the preseny Heyward data. This synthesis is the source of new interpretation at the Heyward house.

CHAPTER II

HISTORICAL DEVELOPMENT

(The following information is summarized from Herold 1978 and the Guide for House Tours and miscellaneous clippings, on file at The Charleston Museum.)

The lot at 87 Church Street is within the bounds of the original city limits, termed the Grand Modell. The property, one half of lot 72, was granted to Joseph Ellicott in 1694. When Joseph died that same year, he left his property to his son and two daughters. Current records do not reveal how the property left their hands. John Milner, a gunsmith, was in possession of the property in the 1730s. He was operating his gunsmithing business on this site by 1737, and living in a small wooden house with his wife and five children. The foundation of this house was encountered by Herold during her study. Evidently, Milner's house and outbuildings burned in the 1740 fire which devastated much of Charleston (Stoney 1976:133). The main house which burned in this fire fronted the street along the south property line (see figure 3). It measured 24 feet in width and was 18 feet deep. The frame house was supported on brick piers and had a central door and a single brick step. Herold has suggested that Milner's house may have looked like the Lining house at the corner of King and Broad, though not as tall.

Milner evidently resumed his business after the 1740 fire, for his son advertised that he continued his father's business after his death in 1749. Several features associated with the Milner's smithing operation were located by Herold; it is not clear from the preliminary report whether they predate or postdate the 1740 fire. These include a barrel lined well directly behind the house and a complex of furnace, forge, well and other features associated with the smithing operation, all enclosed in a frame structure supported by posts. The structure may have been open on the north side.

At the time of his death, Milner owned eleven slaves, at least three of whom were skilled in the gunsmith business. In his will, he divides the slaves among heirs, but instructs them to sell two of the skilled men (Table 1). After Milner's death, his son John Milner Jr. continued his father's business. According to the archaeological data recovered by Herold, the younger Milner built a brick single house as well as the present kitchen and stable building. The single house replaced the wooden structure burned in the 1740 fire. The brick structure was 18 feet wide and of unknown length. It abuted the present sidewalk and the north property line. Herold also found evidence of a paved workyard on the south and west sides of the single house (figure 4). This paving extended to the area between the house and kitchen building and along the south side of the kitchen. Milner also constructed a new well adjacent to the kitchen building.

Milner was forced to sell the property in 1768 due to heavy debts. Col. Daniel Heyward purchased the property from the provost marshal in 1770. He sold the property to his son Thomas in 1771. Construction of the present house began shortly thereafter. The three story

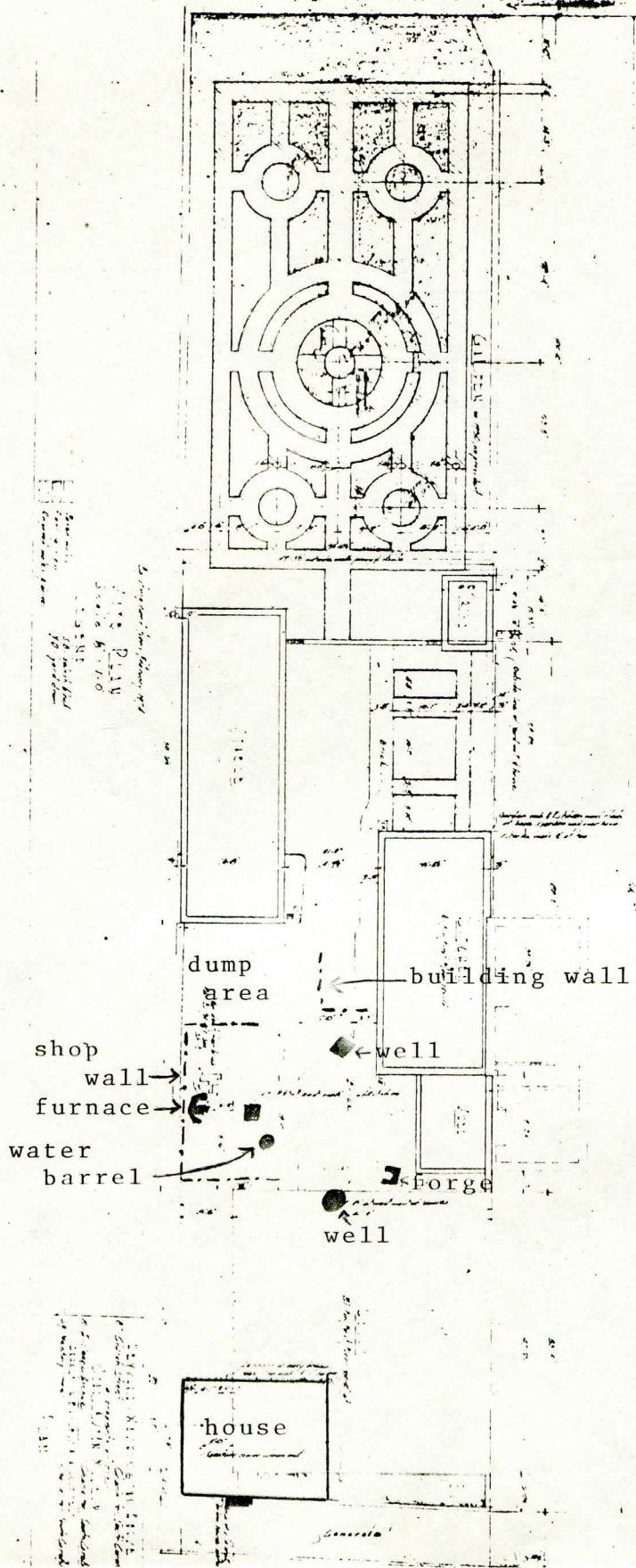


Figure 3

Features associated with the pre-1740 activities of John Milner, excavated by Dr. Elaine Herold (from Herold 1978).

Table 1

Will of
John Milner, of Charles Town, Gunsmith
27 Sept. 1749

To loving sons John Jr. and Solomon all wearing apparel.

To son John, my negroe Fellow Prince a gunsmith, and my mulatto Boy Slave Joe.
also my smiths pair of Bellows, an anvil and a vice.

To Solomon, negro slave Ladd Dandy and negro boy Jack.

To daughter Sarah, my negro slave wench Hester and my negro slave Boy Isaac, the son of Celia,
also out of real estate the sum of 850 lbs. current money to be paid in 3 years in meantime
she be allowed out of rents and profits the sum of 70 lbs. current money yearly.

To daughter Mary, negro slave wench Mariam and negro slave Girl, the daughter of Celia, also
850 lbs. within 3 years.

To daughter Martha, negro slave wench Celia, also out of real estate 1000 lbs. current money
within 3 years, and in meantime she be allowed a sufficient maintenance.

To wife Agathy, out of real estate, 500 lbs. current money in 3 years.

All real estate, subject to payments to 2 sons. Residue to be divided between 5 children.

2 negro men slaves, Prince a blacksmith and Jack a carpenter to be sold and money divided
between 5 children.

(Will proved 13 Oct.1749)

(WPA Project, Wills, vol. 6, 1747-1752, p.200)

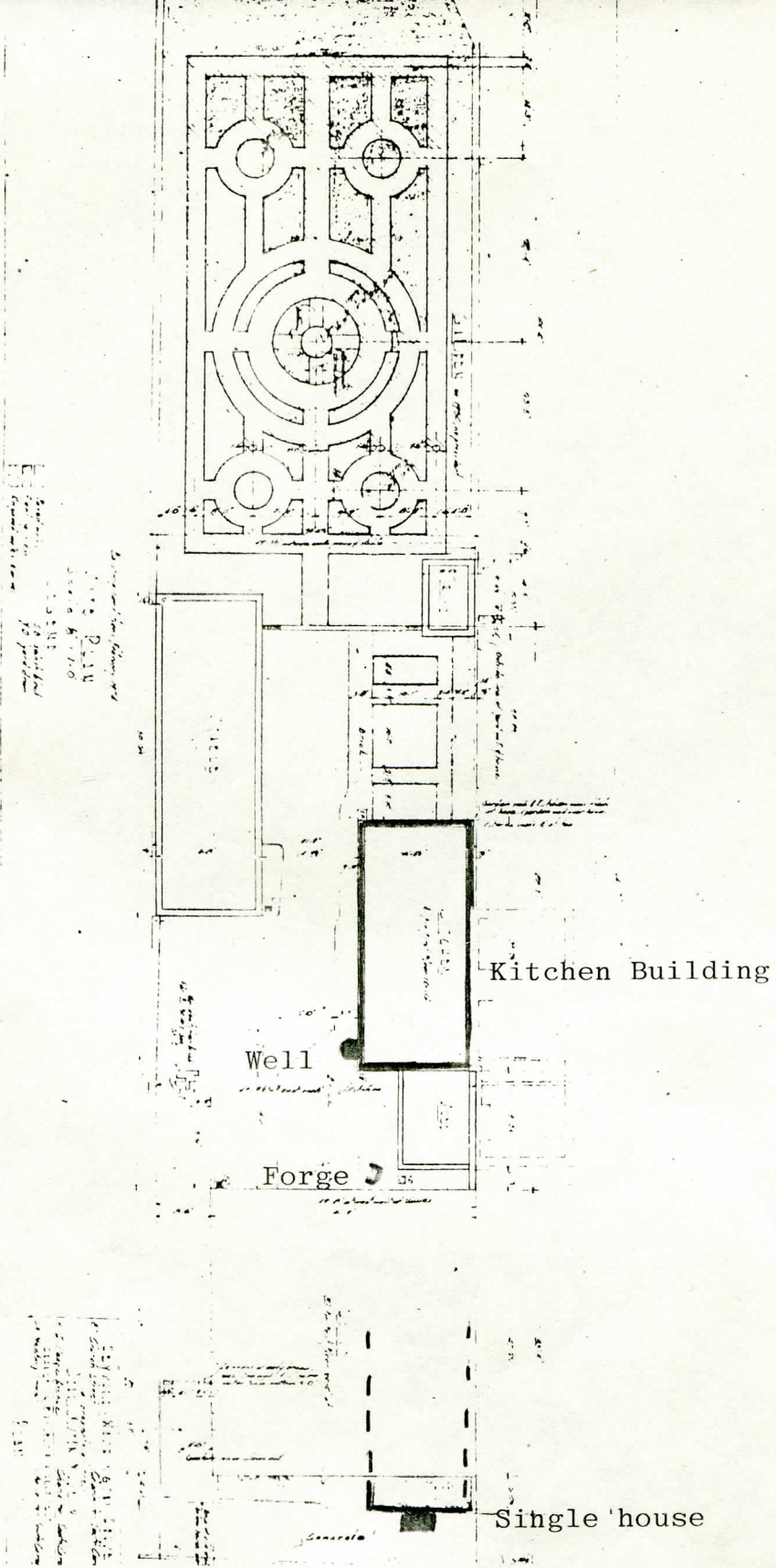


Figure 11. Brick single house. Figure 4. Kitchen building, forge, well, and single house. Excavated by Dr. Elaine Herold, c. 1970.

Features associated with John Milner, Jr.,
 c. 1740-1771, excavated by Dr. Elaine Herold
 (from Herold 1978).

brick double house was 42 feet wide and 48 feet deep. Heyward evidently razed Milner's single house to make room for the new structure and kept the existing kitchen and stable. House construction is dated to 1772 by a coin recovered in the bottom layer of the cellar stair well by Herold.

Thomas Heyward spent only a few years in the house he had built. Thomas Heyward was prominent in South Carolina society, and is nationally known as a signer of the Declaration of Independence. He read law in England, and returned in 1770; in 1773 he married Elizabeth Matthews. Heyward served on the Council of Safety and various revolutionary committees, helped draft the state constitution of 1776, and was elected to the Continental Congress. He saw military action at Beaufort and Savannah, was captured in the fall of Charleston in 1780, and was exiled to St. Augustine, Florida. He was exchanged in 1781. His wife lived at the Church Street property with her sister-in-law, Mrs. G.A. Hall, until May 1781. When Mrs. Hall died, Mrs. Heyward moved to Philadelphia, where she was joined by Heyward and Hall; she died in 1782.

After the Revolution, Heyward returned to Charleston, where he served as associate judge and an alderman in the new city government. He married Elizabeth Savage in 1786; in 1789 he resigned his judgeship, and he and his wife spent a large part of each year on his plantation. Heyward's aunt, Rebecca Jameson, lived in the Church Street house and operated a boarding school for girls. The 1790 census lists 12 girls and 17 slaves in residence.

It was during Mrs. Jameson's tenure that the house was rented to the city to serve as headquarters for President George Washington's visit during his 1791 tour. Mrs. Jameson, an astute business woman, evidently would not accept less than L60 for her trouble. President Washington was evidently not aware of these "arrangements," for in his diary he notes that the "very good" lodgings were the furnished house of a gentleman "at present residing in the country, but occupied by a person placed there on purpose to accommodate me."

Heyward offered the house for sale in 1792, describing it as having "12 rooms with a fireplace in each, a cellar and loft; a kitchen for cooking and washing with a cellar below and five rooms for servants above; a carriage house and stables, all of brick surrounded by brick walls" (South Carolina Gazette, May 16, 1792). The house was rented to Robert Smith at the time of the advertisement; in 1794 Heyward sold the property to John F. Grimke.

The property has changed little since the 1792 description was published (figure 5). Herold has done considerable research on subsequent changes to the cellars of the kitchen and main house. The entrance to the cellar of the kitchen, which faced the main house, was sealed by the cistern and sheds which infilled the area between the kitchen and main house in the antebellum period. Evidently the dirt-floored cellar, used for storage of foodstuffs, was abandoned due to flooding. The cellar to the main house also saw numerous alterations. Archaeological evidence suggests the cellar entrance was covered by a porch which ran the length of the rear of the house; this porch may have been original to the house, or added shortly after construction.

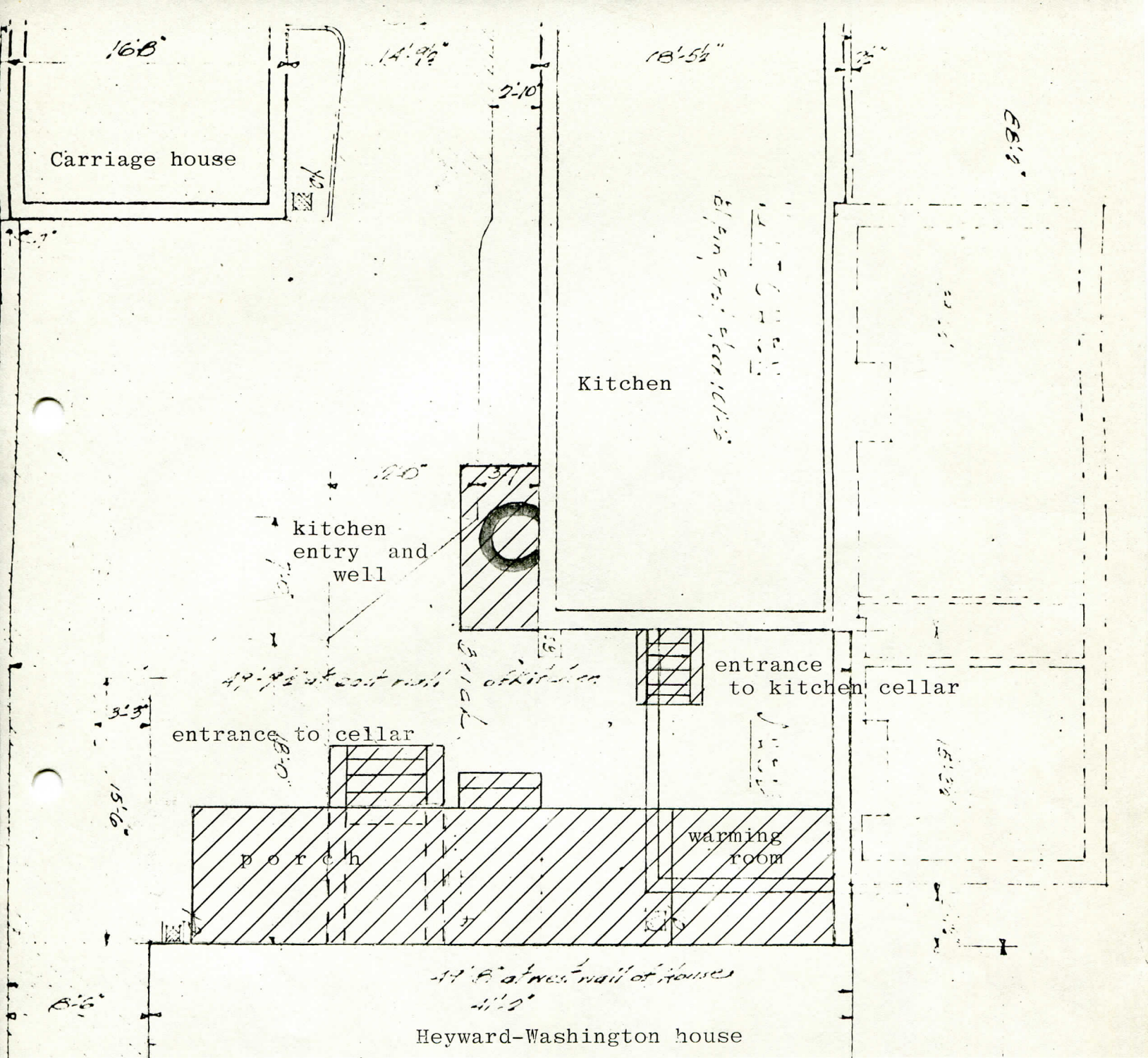


Figure 5

Features associated with Thomas Heyward's ownership of the property.

The Church Street property was purchased by John F. Grimke in 1794. He and his large family lived in the house until 1803, and rented it until 1824. John Grimke died intestate, and in 1835 the Master in Equity sold the property to Margaret Munroe, who had operated a boarding house there since 1820. The house apparently served as a multi-family dwelling throughout the 19th century.

It was probably during Mrs. Munroe's tenure that the back porch was removed, the entry to the kitchen cellar closed, and the cistern and storage sheds added between the kitchen and main house. A small entrance to the kitchen cellar was added to the south side, and a storm drain was added to the yard; this drain ran from the stable, down the driveway to the street.

Mrs. Munroe left the property in trust to her grandchildren, and by 1864 a single granddaughter Elizabeth Jane Trott was in possession of the property. Elizabeth Trott Cooke and her husband Thompson H. Cooke sold the property to Elizabeth Wehrhan in 1879. In 1883, Elizabeth Wehrhan Forstman sold the property to the baker, Henry Fuseler.

The Fuseler family used the property as a bakery and residence. They radically altered the first floor of the house to create a storefront for the bakery. They also built bake ovens behind the kitchen. The 1902 Sanborn map shows a number of additional sheds between the kitchen and stable, covering much of what is now the garden area (Figure 6).

Fuseler died in 1925, during a period of economic stagnation in Charleston. A great number of Charleston's old buildings were in disrepair, and single-family townhouses served as boarding houses or had been altered for businesses. While decay and neglect posed the greatest threat to Charleston's architecture, it was the sale and removal of interior woodwork which moved some of Charleston's citizens to action. Fuseler left his widow and heirs power to sell his real estate. When it became known that "a purchaser of old woodwork" planned to buy the paneling and ship it away, The Charleston Museum and the Society for the Preservation of Old Dwellings united, and took an option on the property in 1929.

The Heyward house, the first historic structure in Charleston to be opened to the public, received a great deal of attention. Steps were immediately taken to remove the bakery storefront and restore the front entrance of the house. In 1931 Emma Richardson initiated restoration of the rear yard as a garden. At this time, the yard beyond the stable and privy was covered with concrete and broken brick. There was no specific documentation for the Heyward garden, but tradition, a few references in 19th century deeds, and the configuration of site features suggested that one may have existed. Facing a lack of specific data, Ms. Richardson designed a garden and selected plants typical of the 1780s. The Garden Club of Charleston has maintained this late 18th century garden ever since. The Charleston Museum has continued to operate the historic house as a public facility, and has gradually researched, restored, and maintained the house, outbuildings, and garden (Figure 7).

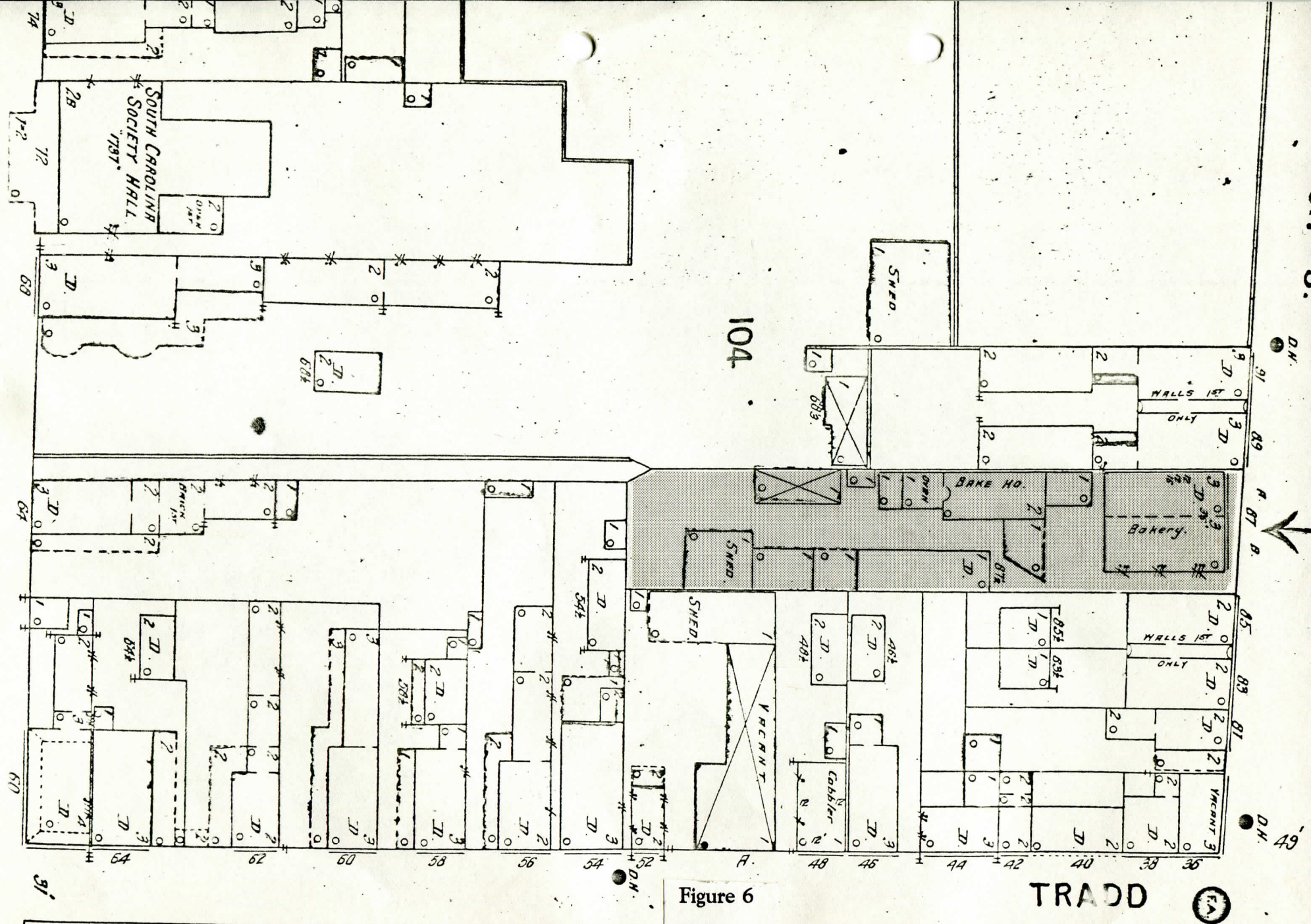


Figure 6

1902 Sanborn Fire Insurance Map showing portions of the Church Street block. The Heyward property is shaded. Note the additional sheds and structures in the present garden area. Note relation of back gate to Ropemakers' Lane.

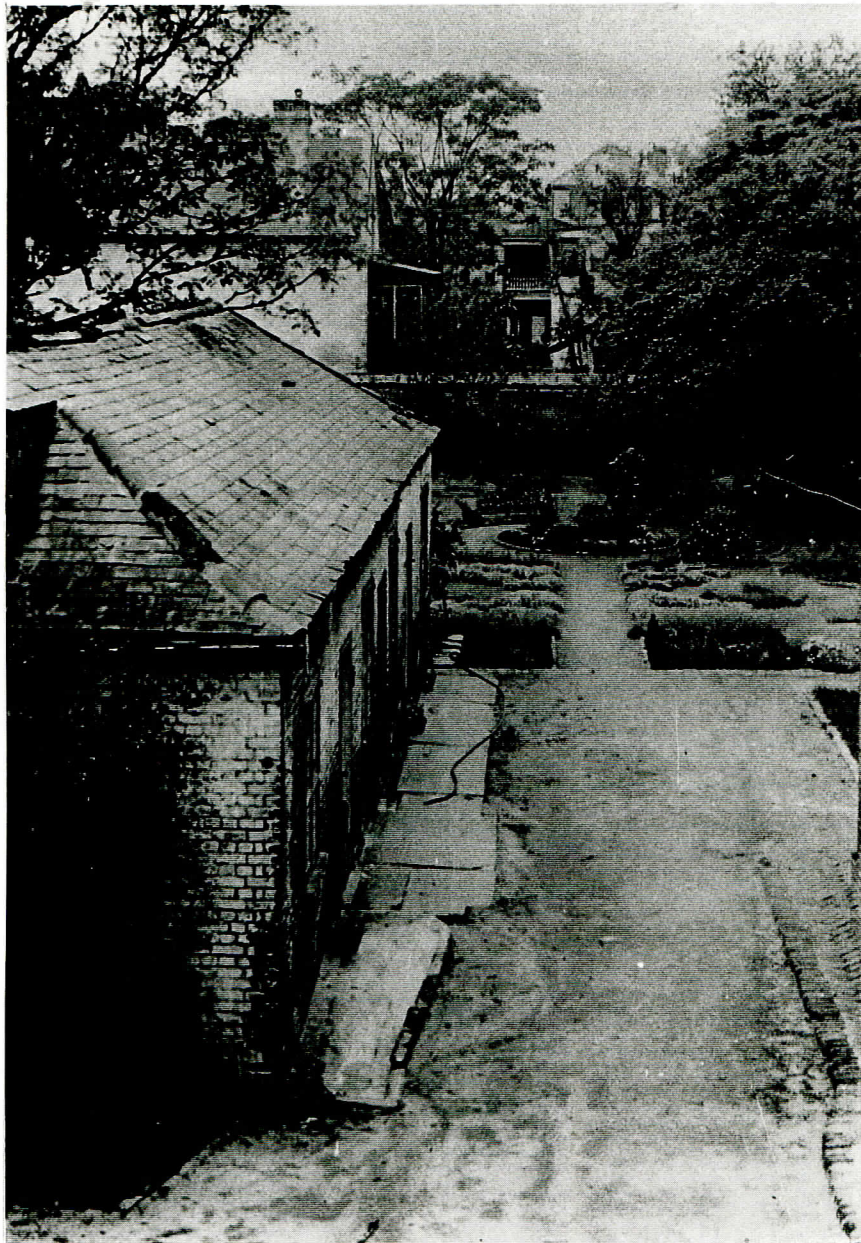


Figure 7

Photograph, c. 1940, showing the rear yard of the Heyward house. Note the french drain and hand pump adjacent to the stable. The pump is evidently connected to the well.

CHAPTER III

FIELDWORK

After extensive consultation, architect Glenn Keyes proposed regrading the soils adjacent to the stable to prevent additional water damage. Grading was planned for the entire length of the stable building, in a strip about five to six feet wide. To mitigate the impact of this project, we proposed to excavate various test trenches in this area and monitor the grading process.

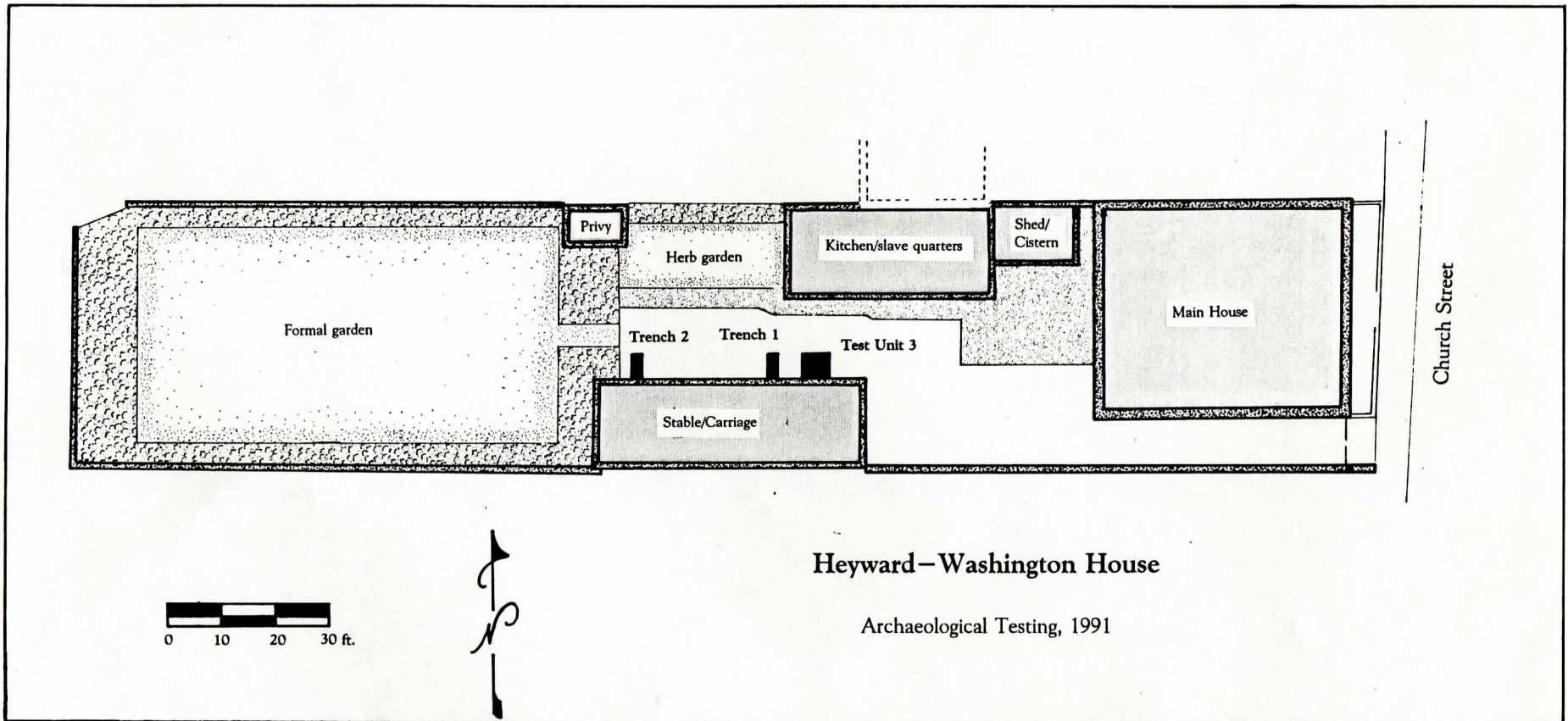
For this limited project, Herold's grid was not reestablished. Instead, trenches were triangulated along the north side of the stable and their locations recorded relative to corners of the stable building. Two test trenches, 2 by 5 feet, were initially excavated; their stratigraphy suggested that additional testing would be redundant. A third, 5 by 5 foot, unit was excavated to explore and expose large features (figure 8).

Description of Excavated Proveniences

Trench 1 measured 2.0 feet east/west by 5.0 feet north/south. The southeast and southwest corners were located, respectively, 16.0 and 18.0 feet west of the east edge of the stable. Zone 1 was .2 feet deep. It consisted of water-washed medium grey and dark grey-brown sandy loam. This was followed by zone 2, consisting of highly mottled black soil with clay inclusions and great quantities of coal and iron artifacts. Such deposits are characteristic of the mid to late 19th century. These soils were very hard-packed. Exposed in zone 2, along the northern edge of the unit were three water pipes, two of cast iron and one of copper. Zone 2 continued to a depth of .55 feet below surface; thereafter the pipes were avoided, and excavations continued in the southern 3.5 feet of the unit.

The truncated excavations began with zone 3, which was a medium brown-tan sand mottled with orange clay. The soil contained large quantities of coal, brick, and mortar inclusions. Zone 3 was .8 feet deep and, in contrast to the 20th century zones above, contained only mid-18th century artifacts. This ceramic assemblage continued throughout the many subsequent deposits.

Based on the appearance of these highly mottled soils, zone 3 was originally interpreted as a large, deep feature. An entrance vault to a brick drain is visible on the surface ten feet to the east, and it was surmised that this might be a builders trench for this feature. Such was not the case, however, as the drain did not continue to this point and the four feet of soil proved to be a series of zone deposits of varying depths.



Heyward-Washington House

Archaeological Testing, 1991

Zone 4 initiated at 1.2 feet below surface and was a fairly even, compact layer of mottled tan, white, and orange sand. When troweled, it readily separated from the surface below. Zone 4 proved to be only .1 foot thick, and was followed by an equally narrow band of orange clay and tan sand with chunks of brick. This was followed by a lense of crushed brick. These three deposits were excavated as separate levels of zone 4, and totalled .4 feet in depth.

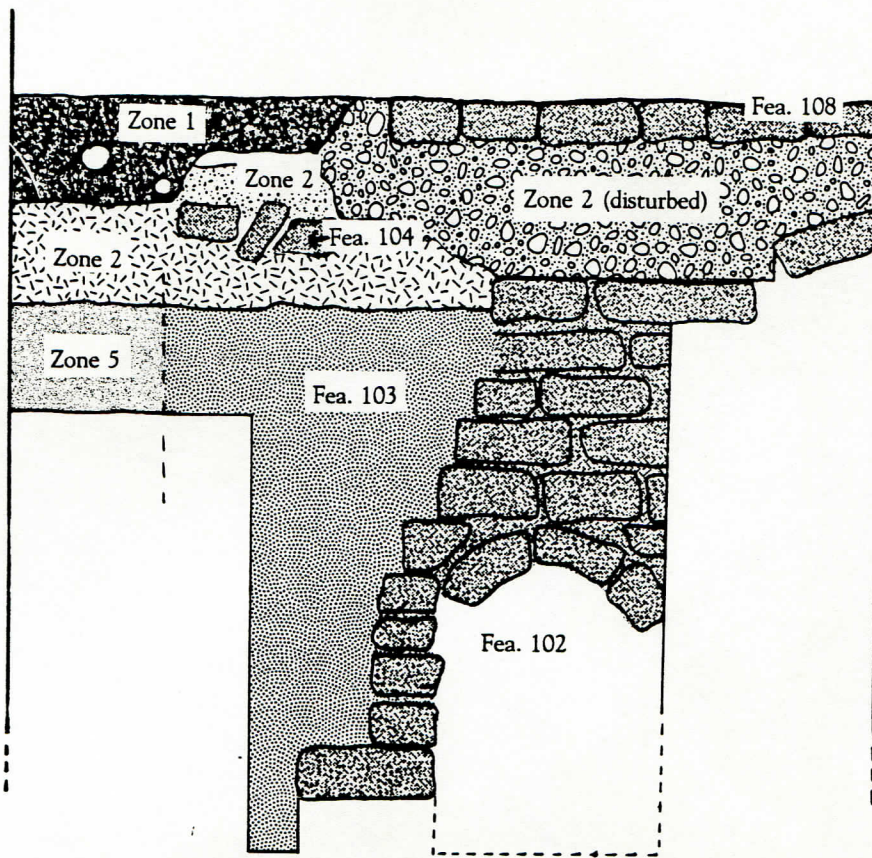
Zone 5 was a deep deposit of mostly grey-brown sand with gold mottling. It had some brick, mortar, and charcoal inclusions. This zone was .4 feet deep. At the base of this deposit we encountered the interface of finished and unfinished brick in the stable foundation. The next lense, zone 6, was a homogenous grey-brown sand with slight amounts of charcoal and brick mottling. Zone 7 was a mottled grey and yellow sand with granular mortar. Zone 8 was a solid grey sand. These lowest three zones all contained larger pieces of mortar and oyster shell.

At the base of zone 7, the foundation for the stable was stepped out one half brick width. Also visible at this level was a builders trench for the stable. This was designated feature 101, to avoid any duplication of feature numbers from Herold's project. The stepped out brick extends .15 feet beyond the stable wall, and the builder's trench was an additional 1.2 feet wide. Feature 101 was excavated; the round-bottomed feature revealed the base of the stable foundation and sterile subsoil .5 feet below the top of the feature. Excavation of Trench 1 was completed at this point (figure 9).

Trench 2 was also a 2.0 foot by 5.0 foot unit, located near the west end of the stable. The southern corners, flush with the stable building, were 41 and 43 feet west of the east corner of the stable. The stratigraphy in trench 2 was identical to that in trench 1. Zone 1 was highly compacted black soil with quantities of coal; zone 2 was a layer of hard-packed clay. The three water pipes were also present in this unit; however, one ran at such an angle that in this unit it was very close to the structure wall. This left a 2.7 foot wide section in the center of the trench available for excavation.

Zone 3 was a mottled medium brown-grey soil with clay inclusions. This was .5 feet deep. At 1.4 feet below surface, homogenous grey sand was encountered. This was designated zone 4, and it continued to 2.0 feet below surface. Because of time limitations, the repetitive nature of the data, and the reduced level of grading required in this portion of the site, excavation of trench 2 was halted at this point.







Examination of the much-repaired and altered drain visible on the surface, and consultation with Neil Nohrdren revealed that the vaulted subsurface drain terminated at this point, having drained from here to the street along the driveway, as revealed by Elaine Herold's excavation. Neil lifted a stone slab just west of the drain to reveal a brick-lined well. The brick well was clearly beneath the stable foundation, suggesting that it predated the 1740 stable building. A subsequently located photograph from the 1930s shows this well fitted with a pitcher pump and a stucco-over-brick drain area beneath it, which funneled waste water into the brick drain (figure 7).



Heyward-Washington House



Test Unit 3 - East Profile

-  dark brown-black topsoil w/ coal and modern artifacts
-  medium brown-grey sand w/ heavy construction rubble
-  medium brown-grey sand, highly compacted, w/ concentrations of building rubble
-  medium brown-grey sand w/ artifact concentrations
-  medium grey-brown sand mottled with orange sand and clay
-  homogenous medium brown-grey sand

Based on these discoveries, we returned to the Heyward workyard on September 3 to excavate in this vicinity and determine the age and relationship of these two features. To accomplish this, a 5 by 5 foot square was placed next to the stable; this encompassed both the well and drain features. The southeast corner of the unit was 6.5 feet west of the northeast corner of the stable. This was designated Test Unit 3.

Zone 1 was excavated in two levels. The top of the unit contained light, loose waterwashed sand, .2 feet deep. Immediately beneath this was a dark loamy sand that was designated zone 1b. Most of zone 1 was highly churned with modern debris. Complete excavation of zone 1 then exposed a number of brick features. The well was surrounded by a square area of brick paving. Based on examination of the brick bond on the interior of the well, it appears that this square brick paving around the well is a later alteration of feature. With the removal of rubble overburden, the entrance to the vaulted drain was clearly visible. This was designated feature 102 (figure 10a).

A linear area of modern brick along the northern portion of the unit overlay pipe trenches. Beneath the brick was a compacted area of clay, sand, and artifacts. This area was designated zone 2, and was present only in the northeastern area of the unit. Immediately beneath this was a remnant of brick paving in herringbone pattern, designated feature 104. This feature was noted elsewhere in the courtyard by Elaine Herold. It was somewhat disturbed within this unit by the other features. Zone 2 was also present on top of the well paving; this provided a *Terminus Post Quem* for this well alteration. The herringbone paving, on the other hand, stopped at the brick well surround, suggesting that the paving postdates the well alteration (figure 11).

The herringbone paving was removed in the northeast portion of the unit, and a soil identical in appearance to zone 2 was encountered. This was excavated as a separate level of zone 2. Soils above the drain (feature 102) in the southeast corner of the unit were different than zone 2, and were more similar to zone 1; thus the soils on the south side of feature 102 were excavated as zone 1c. This bottomed onto four bricks laid side-to-side, sloping in toward the drain entrance, feature 108 (figure 10b, 11, 14).

Excavation of zones 1 and 2, and removal of features 104 (herringbone paving) and 105 (pipe trenches) revealed a different picture of the remaining features: the drain (feature 102), the well (feature 106), and the builders trench for the drain (feature 103). (The area available for excavation was further truncated by the iron pipes in zone 1, whose active use precluded further excavation below them). Feature 103 appeared as a linear area on the north side of the brick drain, 1.3 feet wide. The builders trench soil initiated 1.2 feet below surface, and continued to a depth of 4.3 feet below surface, to the base of the brick drain. Removal of feature 103 exposed the outside of the vaulted drain and entrance, and revealed that the brickwork gradually stepped out. (figures 10b, 12, and 14). There appeared to be two fill episodes, based on variations in the soil appearance, possibly associated with the drain and entrance, respectively. There seemed to be no temporal difference in the deposits, however.



Figure 10a

Test Unit 3, base Zone 2

Visible are the well with the 19th century square paving surrounding it, a loose stone covering, and remnants of the 20th century french drain. A loose stone covering the brick drain is visible to the left.



Figure 10b

Test Unit 3, top Zone 5

The loose stone covering has been removed from the well,
and the builders trench to the brick drain
has been excavated. Remnants of the herringbone
brick paving are visible in the lower left.



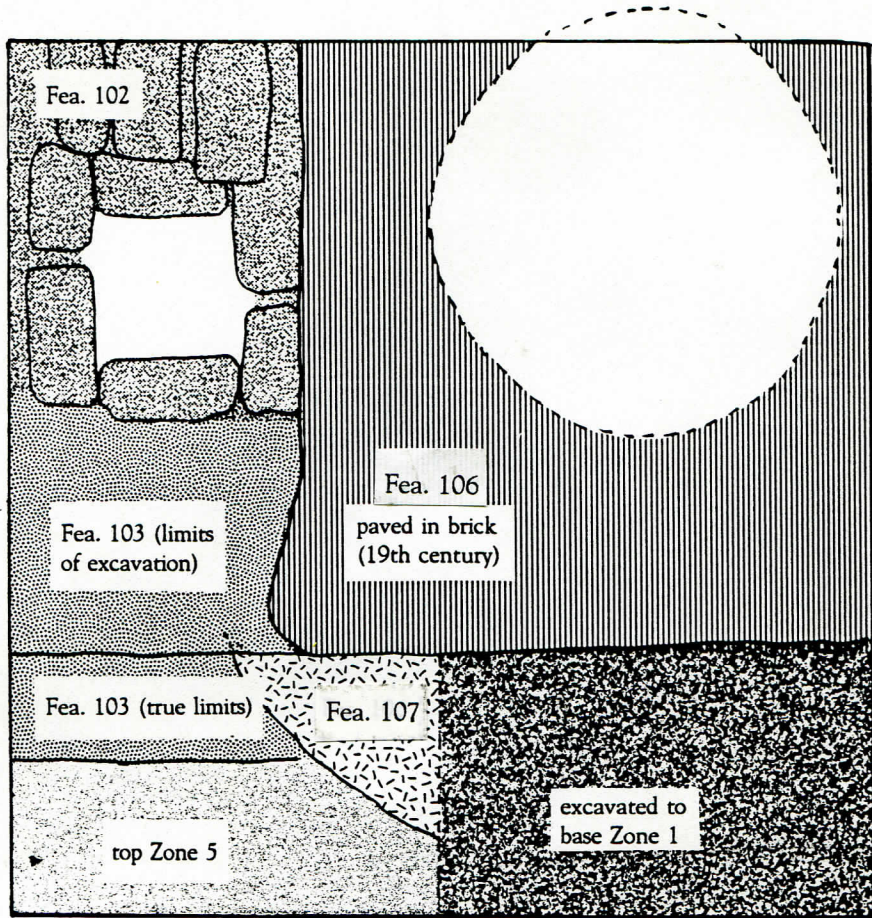
Figure 11

Top of brick drain (Fea 102) before excavation of builders trench (Fea 103). Remnants of herringbone brick paving (Fea 104) are visible in foreground.

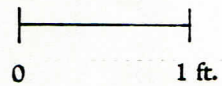


Figure 12

Closeup of drain (Fea 102) exterior, builders
trench (Fea 103) and well construction pit
(Fea 107) after excavation.

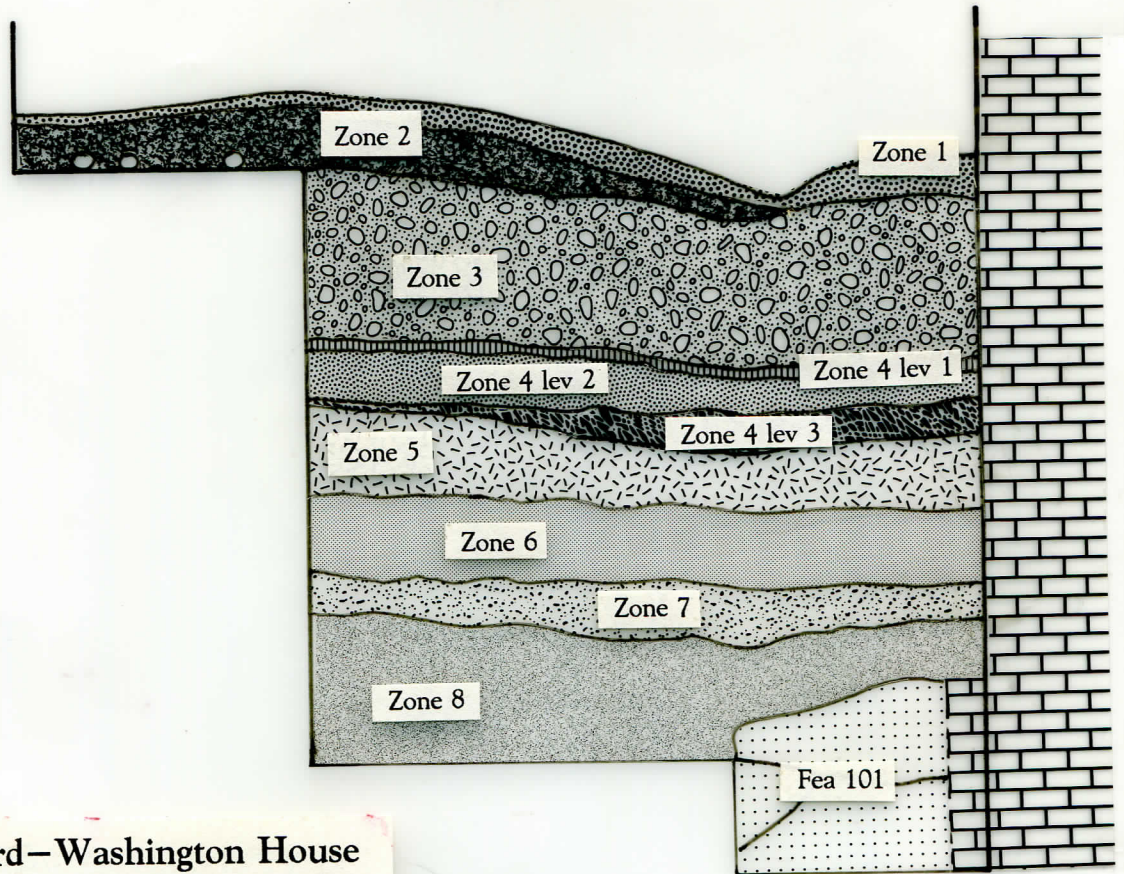


*for key see Figure 14.














Heyward-Washington House
 Test Unit 3 - composite planview

Figure 13



Heyward-Washington House

Trench 1 - East Profile

-  black and grey water-washed sand
-  dark brown-black topsoil
-  mottled brown and grey sand with chunks of clay and coal
-  white, tan, and gold mottled sand
-  orange clay with ribbons of tan sand
-  crushed red brick
-  medium grey-brown sand mottled with gold sand and brick fragments
-  homogenous grey-brown sand with slight charcoal and brick flecks
-  mottled grey and yellow sand with granular yellow mortar fragments
-  grey sand with mortar
-  mottled yellow and grey sand



At this point, the soil beneath the pipes was carefully excavated from underneath them, in an attempt to expose a builders trench for the well. This excavation revealed that the square brick paving around the well was only two bricks deep. Further, the rebuilding of the upper portion of the well itself, visible on the interior of the well, was only four courses deep. At 1.6 feet below surface, a classic well pit was visible, consisting of a circular area of grey, white, and yellow water-swirled sands with lumps of orange clay. This feature had been truncated by the drain and its builders trench, of course, so only a very small portion was available for excavation. Also visible at this level was the true edge of feature 103, revealing that it was in fact 1.9 feet wide (figure 12, 13).

Two .5 foot levels were excavated from the well construction pit, feature 107 (figure 12). The pit intruded into a homogenous medium grey-brown sand, which may correspond to zone 5 in trench 1, or zone 4 in trench 2. Excavations were halted at this point, and detailed photos and profile drawings were made. Plans call for these two features to be exposed and interpreted for site visitors.

Dating the Proveniences

All encountered archaeological deposits were dated on the basis of stratigraphic point of initiation and Terminus Post Quem. Terminus Post Quem is the principal which states that no provenience can be deposited earlier than the newest artifact contained in it. The TPQ date is thus equal to the initial manufacture date of the latest dating item in the provenience. A provenience can be deposited any time after that date; therefore, date of deposition is rarely the same as the TPQ date.

Stratigraphic point of initiation is based on the law of superimposition, the geological principal that soils gradually accumulate on the site of human occupation. Therefore, the deepest deposit is the earliest, with deposits occurring later as one approaches the top of the ground. Relative dates are therefore assigned according to the profile map and the level of the top (or point of initiation) of each deposit. Thus the date of deposition assigned to each archaeological provenience in Charleston is based on both techniques and is determined by considering each provenience relative to those around it.

Stratigraphy in Trenches 1 and 2 was relatively easy to interpret, as both units contained a "layer cake" series of superimposed zones. Test Unit 3 was much more difficult to date, as it contained a series of large, superimposed features which intruded upon each other. Even the herringbone pavement, which usually seals deposits above and below, was truncated by alterations to both the drain and the well.

Based on the determined dates of deposition, the Heyward assemblage has been divided into three temporal subassemblages. The largest dates to the early 18th century and contains the bulk of zone deposits from Trenches 1 and 2. There are smaller assemblages from the early 19th and mid 19th centuries. Interestingly, this area of the site contained no proveniences deposited

between 1750 and 1800, the period of greatest change to the property. A complete list of proveniences and their dates of deposition are shown in Table 2.

Table 2

Provenience Guide

<u>FS#</u>	<u>Provenience</u>	<u>TPQ</u>	<u>Date of Deposition</u>
1	Trench 1 zone 1	1851, white porc.	20th century
2	Trench 1, zone 1b	1850, wire nail	20th century
3	Trench 1, zone 2	1851, white porc.	1850s
4	Trench 1, zone 3	1740, white sgs	1750s-60s
5	Trench 1, zone 4	1670, delft	1750s
6	Trench 1, zone 5	1744, scratch blue	1750s
7	Trench 1, zone 6	1740, white sgs	1750s
8	Trench 1, zone 7	1740, white sgs	1750s
9	Trench 1, zone 8	1715, slip dipt sgs	1730s
10	Trench 1, fea 101	- lead glazed c.e.	1740s
11	Trench 2, zone 1	1851, white porc.	20th cent.
12	Trench 2, zone 2	1740, white sgs	1850s
13	Trench 2, zone 3	1740, whieldon	1750s
14	Trench 2, zone 4	1740, white sgs	1750s
15	T.U.3, zone 1b	1850, wire nail	1870s
16	T.U.3, zone 1b clean	1820, tr. pr. ww	1830s
17	T.U.3, zone 1c	1820, tr. pr. ww	1830s
18	T.U.3, zone 2 above f.104	1820, whiteware	1830s
19	T.U.3, zone 2 below f: 104	1795, tr. pr. pw	1790-1800
20	T.U.3, fea 103, lev 2	1851, gilded ww	1850s, repair
21	T.U.3, fea 103, lev 3	1795, tr. pr. pw	1800s
22	T.U.3, fea 107, lev 1	1744, scratch blue	1740s
23	T.U.3, fea 108 builders trench	1795, tr. pr. pw	1800s
24	T.U.3, zone 2 (above f.107)s	1795, tr. pr. pw	1800s
25	T.U.3, fea 107, lev 2	1795, tr. pr. pw	1740s

<u>Feature #</u>	<u>Function</u>	<u>Date of Deposition</u>
101	builders trench for stable	c. 1740s
102	vaulted brick drain	c. 1800s
103	builders trench to f. 102	c.1800; altered 1850s
104	area of brick paved courtyard	c. 1800
105	pipes and pipe trench	c. 1940
106	brick-lined well	c. 1740; top altered c. 1830s
107	builders trench to f. 106	c. 1740s
108	french drain to f. 102	c. 1830s

CHAPTER IV

ANALYSIS OF THE MATERIALS

Laboratory Methods

Following excavation, all materials were removed to The Charleston Museum where they were washed, sorted, and analyzed. Conservation procedures included reconstruction of ceramic and glass vessels, where possible, and stabilization of metal artifacts. Ceramic and glass vessels were restored with a conservator's glue, B-72, soluble in acetone. Ferrous materials were separated in the field and stabilized by placing them in successive baths of distilled water to remove chlorides, then were oven-dried and bagged. Ferrous materials were removed from their water baths in December 1992. Several ferrous and all non-ferrous metal items were selected for further treatment through electrolytic reduction. The ferrous items were placed in electrolysis in a weak sodium carbonate solution with a current of six amperes. Upon completion of electrolysis, they were placed in successive baths of distilled water to remove chlorides and dried in ethanol. Finally, the materials were coated with a solution of tannic acid and phosphoric acid, and dipped in microcrystalline wax to protect the surfaces.

Non-ferrous artifacts were also placed in electrolytic reduction, in a more concentrated solution with a current of 12 amperes. They were placed in distilled water baths to remove surface chlorides, dried in ethanol, and gently polished before being coated with Incralac to protect the surfaces.

All excavated materials are curated in The Charleston Museum's storage facility according to museum collection policy. Artifacts are packed by provenience in standard size low-acid boxes, labelled, and stored in a climate controlled environment. Field records and photographs are curated in the Museum's archive in acid-free containers in the high security section. Copies on 100% rag paper are available in the general research section of the library.

The first step in the analysis of the materials was the identification of the artifacts. The Museum's type collection, Noel Hume (1969), Stone (1974), Brown (1982), Ferguson (1992) and Deagan (1987) were the primary sources used, although other references were consulted for specific artifacts. Lorraine (1968), Huggins (1971), Kechum (1975), and Switzer (1974) were used to identify bottle glass. Epstein (1968) and Luscomb (1967), as well as South (1964) were used in button identification, and Fontana and Greenleaf (1962) were consulted for nails and tin can fragments.

Following identification, the materials were grouped by functional categories, based on South's (1977) and Garrow's (1982) models for the Carolina Artifact Pattern. South's methodology has been widely adopted by historical archaeologists, allowing for direct comparison; all of the data from Charleston have been organized in this manner. For descriptive purposes, artifacts will be discussed according to South's categories.

Early 18th Century Assemblage

The early 18th century assemblage consists of zones 3 through 8 in Trenches 1 and 2, and features 101 (builders trench for the stable) and 107 (builders trench for the well). Since feature 101 is the deepest of these, it actually serves as the dating level for all of the above proveniences. Since we know that the stable was built after the 1740 fire, all of the proveniences would have been deposited after this date. The lack of creamware, first manufactured in 1762, in any of the proveniences suggests they were deposited shortly after 1740. Since the well appears to predate the stable, it is probably the earliest provenience in this assemblage. The assemblage consists of 555 artifacts.

Kitchen

Kitchen materials comprised 60.3% of the assemblage; nearly 64% of these were ceramics, and glass artifacts comprised the remaining 36% of the group. The ceramic assemblage consisted of 214 sherds.

Table and tea wares (hereafter referred to as tablewares) comprised 62% of the ceramics, with the remainder serving a utilitarian function. Tablewares included Chinese porcelains (6.5%), white saltglazed and scratch blue stonewares (8.8%), whieldon ware (.46%), delft (18.2%), Astbury ware (.93%), and the coarse earthenwares of the mid-Atlantic potters (.43%). The bulk of combed and trailed slipwares also served as tablewares, though presumably less formal ones.

Chinese porcelain was the most expensive and most desired of all the ceramics. It was relatively scarce in the 17th century (and thus is indicative of high status); by the second half of the 18th century, Chinese porcelain had become popular and readily available in the colonies, particularly major ports such as Charleston. Chinese porcelains comprised 6% of the ceramics; only 14% of the porcelains featured overglazed designs.

The most common tableware in the assemblage was delft, a tin enamelled coarse earthenware of English manufacture, comprising 18% of the ceramics. The tin enamelled earthenwares were not very durable, and rapidly declined in popularity in the second half of the 18th century. Delft was produced in a variety of tea and table wares, and decorated in blue or polychrome decorations.

One of the most distinctive ceramic products of the 18th century was white saltglazed stoneware. These molded wares were durable and attractive, but expensive. Dipped wares, first manufactured about 1720, are distinguished by the band of brown slip applied to the rim. The elaborately molded white tableware were first developed in 1740. These wares were manufactured into the 1770s, when they were rapidly replaced with the refined earthenwares (Martin 1987). White saltglazed and dipped wares comprise 12% of the ceramics; scratch blue stoneware (white saltglaze decorated with incised lines containing blue glaze) comprise an additional 1.2%.

Two other table wares occur in minor amounts in the 18th century assemblage. Astbury ware is a fine bodied lead-glazed redware, often trimmed with white clay. It was in use in the second quarter of the 18th century. Astbury wares are .93% of the ceramics. Whieldon ware was the first of the Staffordshire refined earthenwares. First produced in 1740, this white bodied ceramic was decorated with a mottled or stippled green, purple, brown, and yellow glaze in a variety of combinations. These wares were later perfected by Josiah Wedgwood, and became the most important ceramic development of the 18th century. None of the later creamwares were recovered from proveniences in this subassemblage. Whieldon wares comprise .46% of the tablewares.

Another minor artifact tentatively listed with the tablewares are the lead-glazed earthenwares attributed to a variety of mid-Atlantic potteries. These are usually small redware bowls with a solid lead-glazed exterior and a slipped and mottled glazed interior. Specific wares in the Charleston collections have been attributed to Philadelphia and Massachusettes potteries (Steen 1989; Carl Steen, personal communication 1992). These wares were previously termed "Staffordshire earthenware" due to an attribution by earlier researchers. They will henceforth be listed as "Mid-Atlantic earthenwares."

The bulk of the ceramics in the tableware category are the combed and trailed slipwares from the Staffordshire potteries. These wares have a clear to yellow glaze over a clay slip applied to the typical Staffordshire buff-colored paste. Vessel forms include hollow wares such as mugs and cups; these wares are glazed on both the interior and exterior, and the exterior is decorated with brown slip dots and trailed designs. The large, shallow bowls and plates are glazed only on the interior, and are often decorated with combed and trailed slips in a variety of brown and yellow shades. Slipwares comprise almost 26% of the ceramics.

A significant portion of the ceramic assemblage are from utilitarian earthenwares and stonewares. Lead glazed coarse earthenwares included some of the earliest artifacts, beginning with North Devon gravel-tempered ware. This heavy lead-glazed ware was first developed in the mid-17th century, and its recovery is usually heralded as a sign of 17th century occupation. However, North Devon was manufactured into the mid-18th century, and may therefore have been used throughout the colonial period. Three fragments of North Devon were recovered from early 18th century proveniences.

Two lead glazed earthenwares from the Staffordshire potteries were recovered. Manganese mottled ware (or Mottled ware) exhibits the buff colored paste typical of Staffordshire earthenwares. The ware is glazed in a thick dark brown; manganese inclusions give it a speckled or mottled effect. The glaze is rather thin near the top of the vessel and puddles in the bottom of the hollowares. Tankards or mugs in a variety of sizes are the only vessel types recovered in Charleston. The slip coated wares are identical to the mottled ware with the exception of the manganese inclusions in the glaze. The resulting glaze is a solid light or dark brown. Five mottled ware and 2 slip coated ware sherds were recovered, comprising 3% of the ceramics.

A variety of lead glazed earthenwares were recovered (19). Three exhibited a black lead glaze on a redware body, and two exhibited a lustrous brown glaze, reminiscent of Nottingham stoneware, on a light brown body. The remainder exhibited a variety of glaze and paste colors. Lead glazed wares comprise almost 9% of the ceramics.

A variety of utilitarian stonewares were also recovered. These included brown and grey saltglazed stoneware and the cobalt decorated Westerwald. Brown saltglazed stoneware was manufactured primarily in England and, in the 18th century, were often large jugs and wide-mouthed crocks. Grey saltglazed stonewares were made in similar vessel forms. The Westerwald, or Rhenish, blue and grey stonewares were manufactured in the Germanic region and dominated the stoneware market in the 17th and 18th centuries; they were declining in popularity by the 1760s. Westerwald stonewares are commonly jugs and chamber pots. The utilitarian stonewares comprise nearly 9% of the ceramics.

The final ceramics are the Colono wares, the unglazed low-fired earthenwares of local manufacture. These wares have long been of interest to South Carolina archaeologists, as they are found in great quantity on Lowcountry sites of the 18th century. Most scholars believe that the bulk of these wares were manufactured on plantations by enslaved African-Americans (Ferguson 1992). Some of the wares may be the product of itinerant Catawba Indian traders (Crane 1993). The manufacture and distribution network of these wares is poorly understood and is currently receiving some attention (Crane 1993). Colono wares form a major component of 18th century Lowcountry plantation slave sites (as much as 50%) and to a lesser degree planter sites. They are also consistently represented on Charleston sites, averaging 5% of the ceramics. The wares decline rapidly after the close of the 18th century.

Colono wares comprise 14% of the early 18th century component. This is significantly higher than the average 5% from Charleston. This may be a temporal rather than functional phenomena, as many of the Charleston sites with an early 18th century component exhibit an elevated percentage of Colono ware.

The remainder (36%) of the kitchen group consisted of storage and table glass. The most numerous artifacts (82) were fragments of dark olive green bottle glass, used for wine and other spirits. Smaller amounts (13) of clear bottle glass were recovered. Twenty fragments of medicinal glass were present; these were from small hand-blown glass vials. The final artifact in this group were six fragments of table glass, such as tumblers or goblets.

Architecture

Architectural material comprised 23.9% of the assemblage. This group consisted of window glass and nails; the brick and mortar rubble from the proveniences was sampled and discarded.

The window glass fragments (24) were all light green in color; some of the fragments exhibited the bulbous edge of individual panes. The nails and nail fragments (109) were too corroded for further identification.

Other Groups

The single Arms artifact, .18% of the assemblage, was a fragment of worked flint. Clothing items comprised .36% of the assemblage and consisted of two brass straight pins. The single personal item (.18%) was a slat fragment from a woman's fan. It was made of bone. There was also a single furniture item (.18%), a brass upholstery tack. White kaolin tobacco pipe fragments comprised 14% of the assemblage. These were all stem and bowl fragments from the popular and highly breakable white clay pipes. Activities items comprised .72% of the assemblage. This group contained a barrel strap fragment and three pieces of miscellaneous brass.

Mid-19th Century Assemblage

The mid-19th century assemblage consisted of the zone deposits which postdate the herringbone paving of the courtyard, including later alteration to the drain entrance. All of these proveniences (7) have a TPQ of 1820 or later. The assemblage does not include the few 20th century deposits. The mid-19th century assemblage (subsequently referred to as the antebellum assemblage) contained 409 artifacts.

The 227 kitchen artifacts comprise 55% of the assemblage; ceramic sherds numbered 155 for 68% of the kitchen group. The overwhelming majority of the ceramics were tablewares, reflecting the revolution in refined earthenwares. A few colonial-era tablewares were recovered as well; these include 9 sherds of blue on white Chinese porcelain, a single sherd of slip-dipped white saltglazed stoneware, and six sherds of white saltglazed stoneware. Also present were nine sherds of delft and 15 sherds of combed and trailed slipware. The bulk of the tablewares were the refined earthenwares which revolutionized the ceramics market in the late 18th century.

A revolution occurred in earthenware manufacture in the 1750s when Josiah Wedgwood developed a refined earthenware with a cream colored glazed which he called cream coloured ware, or creamware. Perfected in the 1760s, creamware rapidly became immensely popular due to its durability, affordability, and availability in a wide variety of vessel forms and matched sets. Wedgwood matched his potting abilities with marketing savvy; by the 1770s creamware was "the rage" and could be found in every corner of the world (Martin 1990). Wedgwood, according to Ann Smart Martin, managed to compress the cycle of luxury-to-common consumption into a very short time period. By continually introducing new styles, Wedgwood satisfied both the middle class consumer eager to display their knowledge of manners and the fashionably wealthy who sought to distance themselves from the nouveau. In the 18th century, the upper class chose creamware for their everyday china. After 1820, it was relegated to large, utilitarian forms such

as bowls and chamber pots and was considered the least expensive ceramic. The mid-19th century assemblage contains 28 sherds of creamware, 18% of the ceramics.

Josiah Wedgwood continued experimenting with production of a whiter ceramic; in 1779 he introduced "pearl white" china. By adding cobalt to the lead glaze to negate its natural yellow tint, the vessel took on a bluish-white cast. A variety of decorative motifs – hand painting in blue or polychrome, shell edging in blue or green – were introduced in 1780. Still others – transfer printing, annular designs – were introduced in 1795. Some of these motifs are associated with specific vessel forms and relative costs (Miller 1980, 1991; Otto 1979). Transfer printed wares came in a range of hollow and flat wares, and in complete sets for table or tea; these were the most expensive. Annular ware, with its variety of stripes, were always unmatched bowls and mugs. Designed for casual dining and one-pot meals, these were the least expensive decorated wares. The hand painted wares were most often tea wares, and the shell edge was predominantly flatware (plates, soup bowls). These were moderately priced. The Heyward assemblage contained 91 undecorated, 2 polychrome hand painted, 14 transfer printed, and 7 annular pearlware sherds.

During the 1820s, the manufacturing process was refined to achieve an even whiter ware. Termed whiteware, this gradually replaced pearlware as the preferred tableware. The same decorative techniques, with some stylistic changes, continued on whiteware throughout the 19th century – shell edging, hand painting, transfer printing, annular. The main change in all the wares is a shift in color palette from earth tones (brown, yellow, burnt orange, pale green, cobalt blue) to bright colors (light blue, forest green, mulberry red, black) in both hand painted and transfer printed designs.

The assemblage also contained a few mid- to late 19th century tablewares. These include American white porcelain, manufactured after 1851, and whiteware with gilt decoration, manufactured after 1891. Only a few fragments of utilitarian wares were recovered. These included a single sherd each of the 18th century stonewares – brown saltglazed stoneware, grey saltglazed stoneware, and westerwald. Four fragments of miscellaneous stonewares manufactured in the 19th century completed the utilitarian ceramics group.

Glass artifacts comprised the remaining 32% of the kitchen group. This included 31 fragments of dark olive green bottle glass and 26 fragments of clear bottle glass. This increase in clear bottle glass is expected for the 19th century, when technological innovation greatly increased the availability of glass containers. Four fragments of pharmaceutical glass were recovered, along with 11 fragments of table glass. The final artifact was a fragment of milk glass, manufactured after 1870.

Architectural artifacts comprised 34% of the assemblage. This included 53 fragments of window glass from a variety of periods. The majority of the fragments were light green window glass from the 18th century. Also included in this group were 87 nails or nail fragments. Two brass nails from slate roofing and a fragment of delft tile completed the group.

Two arms artifacts were recovered, comprising .5% of the assemblage. This included a gunflint and a lead flint grip. Clothing items comprised 2% of the assemblage and included 8 brass straight pins. Personal items comprised 1% of the assemblage and consisted of a bone slat from a woman's fan, two fragments of slate pencils, and a coin. Advanced erosion made further identification of the coin impossible.

No furniture pieces were recovered. Seventeen fragments of kaoling tobacco pipes comprised 4% of the assemblage. Activities artifacts comprised 2% of the assemblage and included 5 unidentified brass artifacts, a fence staple, a brass grommet, and a fragment of clay flower pot.

Early 19th Century Assemblage

The early 19th century assemblage was very small, and consisted of only three proveniences. These are separated analytically from the mid-19th century because they were separated physically by the brick paving, feature 104. The three proveniences consist of the original builders trench for the drain (feature 103 level 3) plus two areas of zone 2. The assemblage is also small in terms of artifacts; only 91 are included. Kitchen, architectural, and pipes were the only materials recovered.

Kitchen materials comprised 36% of the assemblage, and the majority of these (87%) were ceramics. Tablewares included a number of 18th century types: two sherds of blue on white Chinese porcelain, two sherds of white saltglazed stoneware, one sherd of scratch blue stoneware, and two sherds of delft. The largest type recovered was Staffordshire combed and trailed slipware, with 8 sherds. Late 18th to early 19th century tablewares included a single sherd each of creamware, hand painted pearlware, and undecorated whiteware. Four sherds of hand painted whiteware were also recovered.

Utilitarian wares included a sherd of mottled ware, three sherds of lead glazed coarse earthenware, and three sherds of colono ware. Four fragments of bottle glass (three olive, one clear) completed the kitchen group.

The largest group in the assemblage was architecture, 50.5%. The group consisted of 18 fragments of window glass and 26 nails. Two brass nails for slate roofs completed the group.

The final artifact recovered in this assemblage was 12 kaolin pipestem fragments, these comprising 13% of the assemblage.

Table 3

Quantification of the Assemblage

	<u>Early 18th cent.</u>	<u>Early 19th cent.</u>	<u>Mid 19th cent.</u>
Kitchen			
Oriental porcelain, b/w	11	2	9
Oriental porcelain, o/g	2		
White porcelain			3
Brown s.g. stoneware	3		1
Grey s.g. stoneware	7		1
Westerwald stoneware	9		1
Slip dipped s.g. stoneware	2		1
White s.g. stoneware	17	2	6
Scratch blue stoneware	2	1	
19th cent. stoneware			4
Astbury ware	2		
Mottled ware	5	1	
Slip coated ware	1		
Whieldon ware	1		
Creamware		1	28
Pearlware, undec			11
Pearlware, shell edge			
Pearlware, hand paint		1	2
Pearlware, transfer print	1		14
Pearlware, annular			7
Whiteware, undec		1	11
Whiteware, shell edge			2
Whiteware, hand paint		4	
Whiteware, transfer print			29
Delft, blue on white	17	1	3
Delft, undecorated	17	1	4
Delft, polychrome	5		2
Slipware, American	1		1
Slipware, combed and trailed	55	8	15
Mid-atlantic earthenware	1		
Lead glazed coarse earthenware	14	2	
Black lead glazed c.e.	3	1	
North Devon gravel tempered ware	3		
Nottingham-like earthenware	2		
Colono ware	31	3	

Table 3, cont.

	<u>Early 18th cent.</u>	<u>Early 19th cent.</u>	<u>Mid-19th cent.</u>
olive green glass	82	1	31
clear bottle glass	13	3	26
pharmaceutical glass	20		4
table glass	6		11
milk glass	1		1
Architecture			
window glass	24	18	53
nails	109	26	87
brass nails		2	2
delft tile	1		1
Arms			
flint	1		1
flint grip			1
Clothing			
straight pin	2		8
Personal			
fan slat	1		1
coin			1
slate pencil			2
Furniture			
brass tack	1		
Pipes			
bowls	17	4	3
stems	61	8	14
Activities			
barrel strap	1		
misc. brass	3		5
grommet			1
fence staple			1
flower pot			1

CHAPTER V

INTERPRETATIONS

Since 1980, archaeological research in Charleston has been guided by a series of long-term research goals. The proposed research topics address a number of issues, both descriptive and processual. Several of these were proposed from archival studies (Rosengarten et al. 1987; Zierden and Calhoun 1984), while others were developed by scholars working in Charleston and other cities (for example, Cressey et al. 1982; Honerkamp and Council 1984; Lewis 1984; Reitz 1986). Data from subsequently excavated sites have been utilized to examine these issues, whenever appropriate. Research topic selection is based on the scale of the project, as well as the temporal and functional affiliations of the site. The unified research approach gives weight to small projects, such as the present one at Heyward, as each project has a place in the growing comparative data base. The present chapter addresses two descriptive topics, physical formation of the archaeological record, and changes in artifact patterns through time. These and other comparative data are then utilized in an overarching discussion of the urban landscape.

Site Formation Processes

Investigation of archaeological site formation processes is a basic component of ongoing research in Charleston. In order to interpret archaeological sites, it is first necessary to understand the physical, or geological, processes responsible for the formation of the layered earth. On urban sites, these processes can be complex. Because of intensive occupation and use of most urban lots, the stratigraphic record is often a deep "jumble" of proveniences. A basic first step is to explore how the soil layers were deposited over time.

Archaeologist Michael Schiffer (1977) has enumerated four methods by which cultural materials (artifacts) are introduced into the ground: discard, loss, and destruction and/or abandonment. (A fifth, disposal of the dead, is largely irrelevant on historic domestic sites.) Discard, the throwing away of refuse, is discussed in detail in the section on urban landscape development. This is the most common method of archaeological site formation. Artifacts and other debris are either broadcast on the ground surface, gradually forming zone deposits, or placed in newly dug (trash pit) or previously existing holes (such as abandoned wells, privy pits, etc.). Items deposited due to loss are usually small, such as buttons, coins, toys, etc. Lost items are discovered in wells, or soil lenses that collect beneath wooden floors. Abandonment includes destruction of buildings and their contents from fire or storm, or the artifacts left behind when tenants vacate a property. In some cases it is possible to distinguish proveniences resulting from specific depositional processes.

Once in the ground, artifacts can be redistributed or they can be removed (Ascher 1968; Honerkamp and Fairbanks 1984; Schiffer 1983). Usually the archaeological record is a combination of all three events. In the urban situation, where these processes can become very complex, archaeologists are particularly interested in the processes which introduce and redistribute materials.

Research by Museum archaeologists suggest that sheet middens, or zone deposits, characterize rural sites in the Lowcountry. The congestion and population density of the urban center required different strategies. Although there is considerable overlap, reuse of subsurface features for refuse disposal appears to be more common on urban sites. The back yard was the locus of refuse disposal. Although considerable refuse was scattered on the ground as sheet midden, much of it was deposited into recycled features such as wells and privies.

Crowded conditions and health considerations also resulted in the deposition of refuse in any convenient space in the city. Open lots, unpaved streets, and alleys were likely candidates (Calhoun et al. 1984; Zierden et al. 1983a; Rosengarten et al. 1987). Quantities of refuse were also dumped into creeks and lowlying marshy areas, creating new real estate (Sapan 1985; Zierden and Calhoun 1986; Zierden et al. 1983b).

Urban archaeological deposits reflect abandonment and loss, as well as discard. Abandonment activities include loss of materials due to fire or storm, and the resulting cleanup activities (Zierden et al. 1983a), and the transfer of a domicile to a new tenant or owner (moving out). The single event filling of large features such as privies sometimes reflects this activity (Lewis and Haskell 1981; Zierden and Hacker 1987). Artifact deposits resulting from loss have been manifested as deposits beneath a present or former wooden floor (small items swept through cracks between boards) and in the small artifacts accumulated in drains. Loss and abandonment deposits can often be distinguished from discarded deposits by the artifact profile (South 1977; Zierden and Hacker 1987:93), as well as by the physical properties of the artifacts.

Another key aspect of the urban site may be disorganization, the result of continuous occupation and the intrusion of later deposits into earlier ones. Additional factors unique to urban sites are private or municipal collection of refuse, which resulted in the redeposition of refuse in a central location far from its place of origin (Dickens and Bowen 1980), and the replacement of private handling by municipal or corporate management of such basic needs as water procurement and storage, sanitary waste management, and trash disposal (Honerkamp and Council 1984; Zierden and Calhoun 1986).

The limited nature of the present project at Heyward did not provide a great deal of information on site formation processes, but a few observations can be made. The deep zone deposits, zones 3 through 7 in trenches 1 and 2 were highly mottled with a high clay content. The deposits all contain artifacts dating no later than the mid 18th century. The physical characteristics of the soil suggest deep excavation and much churning of the soil. This, plus the date of the artifacts and the proximity of the units to the stable building suggest that these deposits represent earth moving associated with construction of the outbuildings. The artifacts contained

in it, then, may be redeposited as earlier proveniences were disturbed for construction of the stable. Mottled yellow sand with sparse artifacts associated with known dates of construction have been noted at other sites, as well. The lack of deposits postdating stable construction are somewhat unusual, but it may be that this area was paved (based on Herold's excavations in other areas of the work yard).

Trench 3, with its complex of deep, intrusive features, is more typical of urban sites. Again, reorganization is the overriding characteristic here. The principal artifact-bearing deposits are actually construction trenches for large brick features – the well and drain system. The majority of artifacts they contain would be redeposited from earlier proveniences, disturbed by excavation of the deep construction features and quickly backfilled after brickwork was completed. The zones below the herringbone brick suggest some general refuse accumulation while the soils above suggest a later, gradual accumulation of soil, after the paved courtyard fell into disrepair. Though not excavated at the present time, the well and drain themselves probably contain lost artifacts.

While these limited excavations provide a fragmented, rather cryptic view of the behaviors resulting in the Heyward–Washington archaeological site, review of Elaine Herold's preliminary report (1978) and the artifact assemblage she collected provide a more complete view. The workyard area was extensively used from the earliest occupation of the site, and this changed through time, from the locus of Milner's gunsmithing operation to the daily domestic activities of the Heyward family and their resident slaves. A great deal of refuse was retrieved from the yard area, but much of it was fragmentary, suggesting heavy trampling and compacting and day-to-day disturbance. Herold's sample profile (1978:4) suggests zone deposits were prevalent. Larger, more complete artifacts were recovered from the privy vault and the cellar beneath the kitchen, suggesting that these were principal areas for refuse disposal that saw little post-depositional disturbance. Herold's final report will no doubt shed more light on the complex processes that resulted in the archaeological record at the Heyward house.

Temporal Changes in Artifact Patterning

In 1977, Stanley South published the seminal work *Method and Theory in Historical Archaeology*. In this work, South proposed an analytical method which classified artifacts by function. The seven functional groups – kitchen, architecture, arms, clothing, personal, furniture, pipes, activities – covered the range of domestic activities at British colonial sites. South went on to note that there were broad regularities in the relative proportions of these artifact groups across colonial, and possibly Federal, America, reflecting the "typical" range of activities on domestic sites. He termed this regularity the Carolina Artifact Pattern. Any deviation in the pattern should reflect different activities at the site.

Since 1977, South's pattern recognition approach has been widely used, and in some cases abused, by historical archaeologists. South himself (1988) has argued that pattern recognition should be only a first step in studying cultural processes responsible for behavior reflected in

artifact patterning. Subsequent researchers have suggested changes in the placement of certain artifact types (see Garrow 1982). Others have named a variety of patterns, designed to elucidate variation in the material culture on rice plantations, cotton plantations, yeoman farm sites, urban, public, and industrial sites (see Jackson in Zierden, Drucker and Calhoun 1986)

South's methodology has always been used as an organizing tool for the Charleston artifact assemblages, allowing for direct intersite comparison. In the past decade, it has become apparent that a variety of factors influence artifact patterning, ranging from human behavior to the physical site formation processes to technological developments and marketing trends in the material culture itself (Table 4). Julia King (1990) has proposed a different classification scheme for the analysis of intersite spatial patterning at colonial sites in the Chesapeake region; she has recently applied this technique to a lowcountry plantation site (King 1992). This technique considers domestic artifacts and architectural materials separately. Following her example, various classes and types within the kitchen and architecture group are considered separately.

Throughout the past decade, the material culture of Charleston sites have been subdivided temporally for sites occupied throughout the city's history. These temporal subdivisions are based on specific site activities and general trends in Charleston's developments. Charleston proveniences and their materials have generally been separated into three temporal subdivisions: 1670 to 1750, 1750 to 1830, and 1830 to 1900. The early period corresponds to Charleston's role as a frontier outpost and emerging port. The second marks Charleston's "golden years" as a leading seaport and center of wealth, and the third corresponds with Charleston's economic decline and stagnation. These periods also correspond to changes in ceramic and glass technology. The early period is that of relatively scarce and expensive material culture; the second corresponds to the rise of the British pottery industry and the development of refined earthenwares, and the third to a decline in new ceramic types and the ascendancy of mass-produced glassware.

These temporal subdivisions are more or less comparable for a number of Charleston sites. The present study seems an appropriate point to stop and examine specific characteristics of the material assemblages for these various periods. Five to six assemblages were available for each of the three periods. In each case, the majority of the samples were from elite townhouse sites, but at least two were from other types of sites; middle class residential, mixed residential/commercial, public (Table 5).

Organization of the data began with the broad categories proposed by South. The relative proportions of these categories remain remarkably consistent through time, and remarkably similar to the Carolina Pattern, supporting South's original contention that this pattern reflects typical behavior on a domestic site. The Carolina Pattern, then, does not appear to be particularly sensitive to other variables such as status and ethnicity. Site formation processes and technological changes do affect the patterning.

Kitchen artifacts dominate the assemblages and remain remarkably consistent through time, although, as we shall see later, the relative proportion of various artifact types fluctuates. Kitchen materials average a little over 50% of the assemblages. Architectural materials, the other major

category, in contrast, demonstrates a consistent increase through time, no doubt reflecting the accumulation of architectural debris as lots were rebuilt upon and standing structures renovated or enlarged. Architectural materials increase from 25% in the early 18th century to 33% in the late 18th and 41% in the 19th century. This assemblage, of course, does not include the volumes of brick, mortar, and slate rubble recovered on Charleston sites. Once again, this significant increase through time suggests that factors other than the activities of daily life affect the relative presence of architectural materials.

Arms and furniture materials comprise relatively minor components of the artifact assemblages, and remain consistent through time. The arms items average .3% through time; this suggests that the amount of use of arms remained consistent through the study period. Likewise, furniture artifacts comprise about .2% over the two hundred year period, suggesting little variation in the accumulation and loss of furniture (bearing in mind that very little furniture would be cycled into the archaeological record).

Clothing and personal items also form minor components of the assemblage, but these increase in number through time. This suggests that such items are increasingly available, and perhaps that the Charleston populace were increasingly able to afford them through time. Clothing items increase from .6% in the early 18th to 1.2% in the late 18th and 1.8% in the 19th century. Personal items also increase from .2% to .5%. Though not presented here in detail, these two groups also increase in variety during the study period.

The greatest variation occurs in the pipes group, suggesting dramatic changes in tobacco smoking habits and popularity, or at least paraphernalia. The ubiquitous white clay pipes comprise 15% of the early 18th century component, but decline precipitously by the late 18th century, dropping to 5%. Though white clay pipes were manufactured throughout the 19th century, they further decline in popularity to 1.6%.

Finally, there is a slight decline in popularity of artifacts related to activities. Such artifacts comprise 4% in the early 18th century and about 1.5% of the late 18th and 19th century assemblages. This general trend would suggest a greater segregation of home and work place as the study period progressed, or at least a narrowing of the range of activities conducted on domestic sites. The average of 4% for the early 18th century masks a tremendous range among the sites of this period (from .4% to 16%). It may be that the percentage of activities is generally consistent through time, but highly variable from site to site.

Specific artifact types and groups provide a more detailed picture of the archaeological signature for the three temporal periods. A variety of artifact classes in the kitchen group were compared and contrasted. The relative percentage of ceramics to glass remains consistent through the 18th century (ceramics are 62% and 57% of the kitchen group), but declines rapidly after 1820 to 38%; during the 19th century, technological innovations led to mass production, and thus discard, of glass containers. This is mirrored in the glass category itself, where olive green bottle glass gradually declines in popularity (29% to 26% to 16%) and clear bottle glass, the hallmark of

Table 4

Comparison of Heyward Subassemblages
to the Carolina Artifact Pattern

	Early 18th cent.		Early 19th cent.		Mid 19th cent.		Carolina Pattern
	#	%	#	%	#	%	
Kitchen	335	60.3	33	53.2	227	55.5	60.3
Architecture	133	23.9	23	37.0	143	34.9	23.9
Arms	1	.18		0	2	.48	.5
Clothing	2	.36		0	8	1.95	3.0
Personal	1	.18		0	4	.97	.2
Furniture	1	.18		0		0	.2
Pipes	78	14.05	6	9.67	17	4.15	5.8
Activities	4	.72		0	8	1.95	1.7

Table 5
Temporal Changes in Artifact Assemblages

	<u>C. 1720-1760 *</u>	<u>C.1760-1830#</u>	<u>C. 1830-1880@</u>
Kitchen, % total	55.81	58.47	43.63
Architecture, % total	26.0	33.64	48.32
Arms, % total	.19	.30	.24
Clothing, % total	.64	1.13	3.52
Personal, % total	.29	.45	.61
Furniture, % total	.25	.20	.18
Pipes, % total	11.25	4.45	1.39
Activities, % total	5.47	1.31	2.05
Ceramics, % kitchen	59.2	58.59	35.68
Glass, % kitchen	41.0	41.46	50.44
Tableware, % ceramics	58.42	81.98	88.09
Utilitarian, % ceramics	41.57	18.01	11.90
Colono ware, % ceramics	22.36	4.97	1.27
Oriental porcelain, % ceramics	6.07	20.38	15.34
Creamware, % ceramics		20.61	11.24
Pearlware, % ceramics		12.99	7.43
Olive green glass, % kitchen	32.52	27.29	18.59
Clear bottle glass, % kitchen	5.46	6.65	22.04
Window glass, % architecture	22.90	39.21	43.92
Total # artifacts/provenience	122	159	22
total # proveniences	67	205	84
total # artifacts	8229	32,746	18,670

* assemblage composed of **six** sites: Heyward-Washington, John Rutledge, Miles Brewton, Beef Market, First Trident, McCrady's Longroom.

assemblage composed of **six** sites: John Rutledge, Miles Brewton, William Gibbes, Beef Market, First Trident, 66 Society St.

@ assemblage composed of **five** sites: Miles Brewton, Aiken-Rhett, John Rutledge, Heyward-Washington, 66 Society.

the machine made glass, increase from 6% to 7% in the 18th century, and then to 20% in the 19th century.

Specific aspects of the ceramics group are temporally sensitive as well. Tablewares gradually increase through time, relative to utilitarian wares. This is no doubt due to the mass production of refined earthenwares, most of which were tablewares, and the mass production of glass containers, which partially replaced utilitarian ceramics. One problem with this particular analysis is that some of the refined earthenwares of the 19th century were utilitarian – large bowls, chamber wares – that are very difficult to discern in fragmentary form and so are counted with the table wares. Nonetheless, the types counted as tablewares comprise 61% of the ceramics in the early 18th century, 80% in the late 18th century, and 91% in the 19th century.

The relative percentage of specific ceramic types was also examined for temporal variation. Some of these are temporal markers anyway; the percentages were calculated as a baseline for future work, in hopes that such a profile may aid in dating proveniences in the future. The first type was colono ware. Previous researchers have associated this ware primarily with the 18th century (Ferguson 1992; Anthony 1986) and the Charleston data support this. Further, other researchers have noted variation in the amount of colono ware relative to the distance from Charleston (Anthony 1989). Colono ware sometimes comprises over 50% of the ceramics on outlying colonial plantation sites; closer to the city, the ware can be as little as 10%. In early 18th century Charleston, colono ware averages 17% of the ceramics. By the late 18th century they are only 5%, and by the 19th century only .7%. In fact, the bulk of the 19th century examples are probably present due to redeposition.

Chinese porcelain has been considered a marker of elite socioeconomic status, particularly for the 17th and 18th centuries, and the Charleston data appear to support this suggestion. Porcelain jumps from 10% in the early 18th century to 18% in the late 18th, a period encompassing Charleston's economic apex. This proportion declines only slightly, to 14%, in the 19th century, suggesting some continuation of this ceramic as a popular item in elite households.

The relative percentage of two temporally sensitive ceramics was calculated for baseline data. Creamware was developed in the 1750s, and by the 1770s had become the most popular type of tableware. By the 1820s the ware had declined in popularity, the delicate tablewares replaced with heavier pieces of a more utilitarian nature. Creamwares comprise nearly 20% of the late 18th century ceramics and 15% of the 19th century ceramics. Pearlware, developed in the 1780s and manufactured through the 1820s, comprises 16% of the late 18th and 15% of the 19th century components.

The final category of comparison was a measure of the relative density of artifacts per provenience for the three periods. A variety of proveniences were available for each of the three periods, including zone deposits of varying depths and features of a variety of sizes and functions. Admittedly, a more accurate measure of artifact density is artifacts per cubic foot of excavated soil, but these data were not available at the time of writing. These figures will be amassed and calculated in the near future. Though somewhat arbitrary, the present measure did reveal some

interesting trends. Early 18th century deposits contained 122 artifacts per provenience (67 proveniences) and the late 18th century assemblage contained 159 artifacts per provenience (205 proveniences). Early 19th century proveniences, in contrast, contain only 22 artifacts per provenience (84 proveniences). This reflects a tremendous shift in refuse disposal practices. The sparse 19th century assemblage suggests that much less refuse was deposited on site in the 19th century, and was probably deposited more selectively. By the antebellum period, off site refuse disposal appears to be the norm. In contrast, the Charleston yards were intensively utilized for refuse disposal in the late 18th century; moreover, the yard was intensively utilized for a variety of purposes, reflected in both the artifact density and the large number of proveniences. The early 18th century yards, in contrast, exhibited less alteration, though refuse disposal might be equally intense.

The above discussion is, due to its preliminary status, descriptive in nature. It is only with the completion of some twenty projects that such broad analogies are possible. Nonetheless, this preliminary discussion already suggests some broader interpretive issues to be discussed in more detail in the future. This issue will be explored further in future studies. The present description does suggest that the archaeological record is temporally sensitive to a variety of technomic, social, and physical phenomena.

The Urban Landscape

The principal focus of archaeological research in Charleston for the past five years has been the evolution of the urban landscape. This broadly based study has encompassed architectural, photographic, cartographic, documentary, botanical, zoological, and ecological data to investigate a range of specific topics. This overarching approach encompasses data and issues relating to diet, terrain alteration and site formation processes, health and sanitation, and even socioeconomic status. While all of the topics are interrelated, and not doubt encompass cause and effect not explicit here, seven specific issues have been examined through the accumulation of data from Charleston sites. Though the landscape approach has only been explicitly discussed since 1989, the topic encompasses all of the previously discrete research topics listed above. The current synthesis of data is discussed elsewhere (Zierden 1991; Zierden and Herman 1993); what is presented in this report is a succinct discussion of seven somewhat separate aspects of the overall study.

The present project, due to its very limited nature, made only a modest contribution to the ongoing study of the urban landscape. But because the property is open to the public and archaeological data is incorporated into interpretation, the landscape topics will be summarized here. Where relevant, data from the Heyward house are discussed.

1. Alteration of the peninsular terrain: To the twentieth century eye, the Charleston peninsula is level, with perhaps a gradual rise along King Street, and as one moves north. When

first encountered by Europeans, the peninsula featured more relief (Akin 1809; Roberts and Toms 1739). Alteration of the terrain to better suit the economic and social needs of town residents began almost immediately. Major changes such as the filling of creeks and marshes along the Ashley River and the creation of "made" land along the Cooper riverfront began in the late 17th century and continued into the early 20th. Deliberate, large-scale filling has been encountered at diverse sites, such as the Exchange and Atlantic Wharf along the Cooper River (Herold 1981; Zierden n.d.), President Street on the Ashley River (Zierden and Raynor 1988) and First Trident, located on one of the creeks which cross-cut the peninsula (Zierden et al. 1983b). These trends can be seen in the series of city maps drawn between 1704 and 1872.

More subtle, and noted primarily through archaeology, is the filling of small strips of marsh and low areas to improve the "yards" of Charleston houses. This type of filling has been seen at the Miles Brewton and Aiken-Rhett houses. Archaeological evidence for terrain alteration has been amplified by the seeds and pollen recovered from the layered earth. Analysis of pollen from the two sites (Reinhard 1989, 1990) revealed a gradual decrease in the plants associated with marshes and lowlands. This was mirrored in the seeds recovered from the First Trident and Beef Market sites (Trinkley in Zierden et al. 1983; Trinkley in Calhoun et al. 1984).

2. Deforestation: Palynological and ethnobotanical studies have also documented a dramatic deforestation of the Charleston peninsula in the second half of the 18th century. Pollen studies at the Rutledge and Brewton houses show a decrease in the amount of oak and pine during this period, and a dramatic increase in the "weed" species which colonize open, or disturbed, habitats (Reinhard 1989, 1990). While some of this change through time reflects individual lot clearing for townhouse construction, the pollen spectrum reads a much larger range, and reflects general deforestation of the Charleston surrounds, ostensibly for lumber and firewood. The documents hint at this deforestation through a dramatic rise in firewood prices during the colonial period (Weir 1983:44). The ethnobotanical samples from the Charleston sites are dominated by weedy plants (Trinkley in Zierden and Grimes 1989). "Reforestation" of the urban center is a largely 20th century phenomenon; when compared to present views, photographs from the second half of the nineteenth century show more trees along streets, but far fewer on individual lots.

3. The Work Yard: Gradual changes in the urban landscape received impetus from a series of mid-18th century natural disasters. The fire of 1740 and the hurricane of 1752 cleared major portions of the city for rebuilding (Calhoun 1983; Rogers 1980). At the same time, successes with staple agriculture created an urban gentry composed of merchants and planters whose new status required appropriate homes (see Chaplin 1992). Many grand townhouses and public structures were constructed during this period (Coclanis 1989; Herman 1993). Equally important, but currently underestimated, are the support structures and activity areas which, in conjunction with the main house, formed the urban compound. These included kitchen, slave quarters, stables, carriage house, livestock sheds, privy, well, cistern, drainage system. The maintenance of gardens might require additional features. While variation in the size, content, construction method, arrangement, and specialization of these structures existed, they were present in some form at all sites, not just those of the elite.

The Heyward house contains relatively substantial and specialized outbuildings. The two and one half story brick structure contained kitchen and washroom on the first floor and five rooms for resident slaves on the upper two floors. A second brick structure, this one single story, housed horses and carriages. Several brick-lined wells are present, as is a brick privy building. Infilled sheds added in the 19th century provided storage and housed a cistern.

The support structures were often aligned along one or, as in the case of Heyward, both walls to the rear of the house. In larger lots that could afford such spatial segregation, the work yard was separate from formal gardens. Within these large lots, archaeology has consistently underscored the highly specialized and intensively utilized nature of the work yards, that area around, between, and beneath the work structures. These seemingly spacious yards quickly became cramped as a townhouse owner, his family, a retinue of 10–20 slaves, horses, and other livestock lived and worked within a circumscribed area. There is currently no data on the resident slave population at Heyward after 1770, but the census data on main house residents indicate a sizeable number of folks were usually present. Adding slaves and horses would indeed make the property crowded.

The work yard was the scene of the activities of daily life, including food preparation, livestock maintenance, cleaning and laundering. The archaeological record reflects the butchering and cleaning of fish in these areas, for example. The work yard was also the locus of refuse disposal, one of the most critical problems of urban life and one most visibly reflected archaeologically. Archaeological research at Charleston townhouses has consistently demonstrated that refuse deposited in the yards, either deliberately for disposal or secondarily in fill dirt, was not broadcast across the entire yard but was instead concentrated in particular areas. At the Miles Brewton house, for example, debris was concentrated in the work yard adjacent to the outbuildings from the time of initial occupation of the property in 1769. Over the next 75 years, 2 1/2 feet of refuse accumulated in this area in a series of sheet deposits and small trash pits. A significant portion of the animal bone from these deposits exhibited rodent-gnawing; this indicates that the bones lay on the ground surface for a period following their disposal (Reitz 1989).

The excavation units at Heyward, located adjacent to the stable, were in the work yard. Likewise, much of Herold's excavations fell in the work yard, in the area between the main house, kitchen, and front of the stables. Somewhat surprisingly, the layered refuse in front of the stable building appears to have accumulated by the middle of the 18th century. Refuse from the second half of the 18th century, usually the period of greatest archaeological accumulation, is absent from this portion of the site. The answer may lie in Herold's excavations. Herold encountered a brick paved surface in the yard which she dated to c. 1760. This paved area may have discouraged refuse disposal in this portion of the yard. Clearly, the model of work yard use will be enlarged and more detailed following additional work. The paving of the Heyward yard is discussed in more detail in the next section.

4. Health and Sanitation: The deliberate placement of specialized service buildings, separation of work yards and gardens, and specific locations for refuse disposal were conscious attempts to mold an urban landscape suitable to the social values, as well as the physical needs,

of urban residents. The needs and values of Charleston's citizens changed as the 19th century progressed. Archaeology has not only outlined the basic features of mid-18th century urban compounds; it has also documented changes in these features for the next century. Many of the visible changes were attempts to improve sanitation and prevent the spread of disease in an increasingly crowded city (Rosengarten et al. 1987).

Refuse disposal, for example, must have reached critical proportions in the city in the early 1800s. Many of the townhouse workyards were evidently paved in the early 19th century. The Miles Brewton yard serves as a good example. The upper zones of refuse were first covered with irregular lenses of tabby mortar, and then paved with brick and slate. Datable ceramics indicate that the mortar paving occurred after 1800 and the brick paving between 1830 and 1840. Refuse was then evidently disposed of elsewhere, for soil accumulation in the next 150 years amounted to one half foot (compared to 2 1/2 between 1770 and 1830). And, as we have seen, artifact density was low for this post-paving period.

The Heyward house exhibited a similar series of events. The herringbone paving encountered in Trench 3 continues across the workyard, and was encountered by Herold in her excavations. The recovery of transfer printed whiteware in the zone immediately below the bricks date the paving to the 1830s. This paving was encountered .7 feet below surface, suggesting a scenario very similar to the one described for Brewton. Paving the courtyard would have sealed previously deposited layers of mud and refuse. The paved surface could be swept or washed clean, and it discouraged refuse accumulation.

Another vehicle for a more sanitary yard was a drain system. Such features have been encountered at most of the townhouses excavated to date. While a few are earlier, most are antebellum improvements. While some of them facilitated stormwater runoff, their presence on high lots suggest other functions as well. The accumulation of small artifacts and animal bone, particularly fish scales, suggest that the drains were used primarily for the disposal of waste water.

The drain encountered at the Heyward house dates to the 1840s, based on the presence of transfer printed whiteware in the builders trench. The vaulted brick structure was similar in style and construction method to those at the Miles Brewton and Nathaniel Russell houses. Due to the limited scope of the present project, the vault was not breached, and the content of the drain fill remains unknown.

Wells were the principal source of water, including drinking water, in 17th and 18th century Charleston. Due to the city's low elevation, potable water may be encountered no deeper than ten to twelve feet below surface. Wells in the city were first wood or barrel lined, and then built in brick. Because of their open top and shallow nature, they were subject to contamination. This ranged from stray rats and kittens who fell in to foul substances which seeped in from the sides. Contaminated wells were often abandoned and another constructed in close proximity. Others, particularly public wells, remained open as a source of water for fire fighters. At least two wells were located during excavations at the Heyward house.

Cisterns to collect and store rainwater are another sanitation feature added to Charleston lots. As the 19th century progressed, Charlestonians became increasingly concerned with health problems that plagued the city and began to relate them to poor sanitation and increased population pressure. Specifically, increasingly large numbers of wells and privies resided on increasingly small lots in all-too-close proximity to each other (Honerkamp et al. 1982; Honerkamp and Council 1984). The result was contamination of the groundwater, described in graphic language in 1880s reports by the Public Health officer (Rosengarten et al. 1987). Cisterns, designed to collect rainwater via gutter systems from roofs, provided an alternate source of drinking water. They were first constructed in the early 19th century and became a standard feature by the 1850s. These were newly-constructed rectangular vaults or converted wells whose openings had been narrowed and sealed with a stone slab. Either way, they were designed to be free of contamination; the archaeological signature is often a clean sand fill with no artifactual material. All of the townhouses studied to date have at least one cistern. The Heyward cistern was included in the 19th century infilled sheds between the kitchen and main house.

Analysis of the faunal remains recovered from drain fill, trash pits, and other workyard midden proveniences has also provided information on urban sanitation. Zooarchaeologist Elizabeth Reitz has determined that such animals as rats, mice, toads, cats and dogs comprise 4.3% of rural faunal assemblages and 10.6% of urban ones, suggesting that vermin were more closely associated with human activity in the city. The urban elite sites contain a lower percentage of vermin, 7.7%, possibly indicating some success in sanitizing the urban environment (Reitz 1986).

The antebellum period witnessed major changes in the social, economic, and technological systems of the United States. Industrial and railroad development was a key factor, and cities were the center of these changes. This was manifested in fierce competition between cities; in order to capture the burgeoning commerce and industry, cities strove to be modern, clean, and attractive. Municipalities took control of such services as lighting, disease prevention, drain and street maintenance, and ultimately piped water and sewer systems (Goldfield 1977). In Charleston, however, fierce individuality and staunch belief in cotton monoculture by a majority of political leaders dominated attempts by others to attract railroads and new industries. Charleston's leaders remained committed to a volunteer government bolstered by a belief in public service. Historians have suggested that this was "a conscious rejection of modernization already setting new scientific and professional standards, as it was also a reflection that no clear distinction should exist between public and private life" (Pease and Pease 1986). A city that was the home of the first railroad in 1831 was, by the 1850s, bypassed by major railroad lines. After the Civil War, poverty was the main reason for lack of modernization. Despite the pleas of the Commissioner of Public Health, Charleston did not receive a water-bourne sewerage system until the 20th century. Municipal handling of drainage and trash disposal also lagged behind such efforts in more northern cities. Nineteenth century Charlestonians continued their own, highly varied efforts to improve their homesites (Rosengarten et al. 1987).

5. The Urban Diet: The urban townhouse sites evidently needed special cleanup efforts, as the faunal record also indicates that the maintenance and butchering of cattle was commonplace on these properties. This is seen in the distribution of carcass elements recovered at residential

sites when compared to those at the market and at sites traversed by the general public. Further, these data suggest that on-site butchery was more common on elite sites than on those of the middle class (Reitz and Zierden 1991; Reitz 1989). Documentary sources suggest that the maintenance of livestock, particularly cattle, by Charleston residents persisted into the 20th century (Pease and Pease 1986; Rosengarten et al. 1987). William Aiken even constructed an elaborate brick shed for these urban dwellers.

In general, the Charleston diet relied heavily on beef and other domestic animals, while a variety of wild game provided diversity. Urban citizens relied more heavily on domestic meats – beef, pork, and chicken – than did their rural neighbors. Two other birds commonly consumed – turkey and Canada goose – may have been domesticated, or at least penned for a while. In general, the diet of all urban citizens, whether rich or poor, merchant or slave, were more similar to each other than they were to the diet of rural residents. In the city, the markets made domestic meats more readily available (Reitz 1986), while wild game would have been more difficult for the average urban citizen to obtain (Reitz 1987). As a result, wild game may have assumed a distinctive urban social prestige. Fish, a variety of wild birds, and some venison are often listed on dinner party menus.

A small sample of the faunal material excavated by Herold was analyzed by Bruce Manzano in 1982. The materials, though recovered with 1/2 inch screen, generally mirror the pattern described by Reitz and Honerkamp in 1983 and by Reitz in subsequent Charleston studies. Manzano also noted evidence of on-site butchery of domestic mammals (cattle and pig) in contrast to wild mammals (deer).

Interestingly, the collection contained a number of pets. Cats and dogs were the most common, but two unusual animals were recovered; a parrot and a guinea pig (Manzano 1982).

6. Segmentation and Privatization: Archaeological evidence, spurred by architectural research, points to the increasing segmentation and enclosure of urban lots with brick walls. This process accelerated throughout the antebellum period, as ideas about individualism and privacy changed (Pease and Pease 1985, 1986; Rosengarten et al. 1987). Intellectual development during this period was designed to keep a diverse community close-knit and to avoid confrontation. While Charlestonians were proud of their differences from northern cities, they also suffered self-doubt. At the same time, Charleston became increasingly defensive of the institution of slavery; the rise of abolitionism in the north and heightened sectional strife ultimately led to secession of the southern states and the Civil War. Even as the South defended slavery, Charlestonians became more and more fearful of both the enslaved and free African-American population. After 1820, increasingly harsh restrictions were applied to black Carolinians, but these laws did nothing to assuage white Charlestonians' fear of arson, poisoning, and insurrection (Rosengarten et al. 1987:59–62). Social pressure from without as well as within, coupled with a floundering economy, encouraged an attitude of withdrawal manifested in changes to the landscape. This is reflected archaeologically and architecturally in forms of urban enclosure. Domestic space in the city became more segmented and partitioned into discrete areas. Open walls and fences were

rebuilt in brick, yards were subdivided into discrete areas with walls and fences, and exterior windows in second floor slave quarters were sealed (Zierden and Herman 1991).

At the Miles Brewton house, for example, internal and external boundaries were first marked with wooden post-and-rail or picket fences, later replaced with solid brick walls. Artifacts in builders trenches date these walls to the antebellum period. While post-and-rail fences are no longer a feature of Charleston, their existence and the more open nature of the urbanscape are captured in Charles Fraser's watercolors of the late 18th century (Huger Smith 1959). Like many of the downtown lots, the Heyward house is presently surrounded by brick walls; portions of them show evidence of alteration or repair. No testing has been done adjacent to these walls in an attempt to date them; this should be done in the future. While the present data would suggest that the brick enclosures are an antebellum addition, it is interesting to note that Heyward's 1792 advertisement for the property indicates that it is "surrounded by brick walls."

Segmentation (Castille et al. 1982:5; Herman 1993) enabled householders to "refine and signify the socially efficient use of available land" (Zierden and Herman 1993). The grand Georgian townhouses such as Heyward may be viewed as "architectural pronouncements of social order" comparable to the great plantation houses built throughout the 18th and 19th century South (Isaac 1982:39). The larger houses were often elevated with an above ground basement which cooled the house, gave protection from flooding, raised the main living quarters above street level, and provided the image of social distance. The sense of distance was further enhanced by the presence of formal entrances and forbidding brick walls or wrought iron fences that often stood between the double houses and the streets (Coclanis 1989:8; Weir 1983).

Conclusion

The concept of landscape is a visual phenomenon, "the portion of land that the eye can comprehend in a single view" (Stilgoe 1982; Jackson 1984). What we comprehend in a single view today certainly clouds our vision of past landscapes. Some of the changes to the Charleston landscape, such as brick walls, sealed windows, and paved courtyards, leave lasting visible evidence. Others do not. The archaeological evidence for landfilling, trash disposal, and wastewater drainage is revealed only for a moment in time; it is then destroyed or at best reburied. The underground complexities of the urban landscape — drains, cisterns, privy vaults, wells — are invisible, yet were integral to daily life in the city. Most of the time, archaeology is the only means of assessing this information. In the case of fence building, tree planting, and livestock maintenance, archaeological discoveries have provided the impetus for additional documentary and photographic research.

The Heyward-Washington house is interpreted for the public as the townhouse of one of colonial Charleston's political leaders. The architectural embellishments, furnishings, and gardens of those of a family whose relative wealth and prestige allowed them to enjoy the finery available to the colonial gentry. Archaeological research has made the physical and social accomplishments of Charleston's elite all the more remarkable by calling attention to the rigorous requirement of daily life in a historic city.

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