Archaeology of College Hill: John Brown House

Results and Interpretations from the Fall 2010 Excavations

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ARCHAEOLOGICAL REPORT SUBMITTED TO

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TABLE OF CONTENTS

CHAPTER 11 OBJECT BIOGRAPHIES

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CHAPTER 1 Introduction: Excavations at the John Brown House, 2010

Krysta Ryzewski

Offered as an advanced undergraduate course in the Joukowsky Institute for Archaeology and the Ancient World at Brown University, the *Archaeology of College Hill* (ARCH01900) is a hands-on introduction to archaeological survey, excavation, and preservation offered annually during the fall semester. In 2010 the course was held for the third time at the John Brown House on the corner of Benefit and Power Streets on the East Side of Providence. The course met for three hours once a week between September and December of 2010. The semester schedule permitted a total of eleven days of excavation and three days of labwork following the outdoor fieldwork. Over the course of ten weeks, the students excavated three 2x2m units. Information about the site layout and excavation methodology are detailed in several of the following chapters, and in the 2008 and 2009 Archaeological Reports (available at http://proteus.brown.edu/archaeologyofcollegehill/Home).

As part of the course requirements, students maintained a wiki, an editable website, on which they posted a variety of formal and informal updates on a weekly bases (http://proteus.brown.edu/archaeologyofcollegehill/Home). At the end of the semester, students submitted independent reports based on different aspects of the excavations, the landscape's histories, and the artifacts collected. This report is a compilation of these student research projects; editorial changes have been kept to a minimum, in an effort to foreground the students' accomplishments. The first ten chapters include research on the property's historical background, analyses of the archaeological deposits in the excavation units, and interpretive approaches designed to integrate the findings and communicate them to a broader, non-academic audience. Chapter 11 is a collection of the second component of the students' research projects, object biographies, which involved contextual analyses of three unique artifacts from the excavation assemblage by each student. It is our hope that the findings, as presented here, will be a useful resource for historians, archaeologists, students, and other interested members of the community.

Geographic Information Systems at the John Brown House

Max Mankin, Jessica Nowlin, and Krysta Ryzewski

Introduction

Geographic information systems (GIS) are a suite of utilities designed for the visualization of multiple layers of spatially oriented data. Though it certainly was not as high tech as the GIS we know today, the first documented use of GIS-type analysis occurred in 1854, when John Snow mapped cholera cases in London. After observing a high concentration of illness around the Broad Street well and having it closed, the cholera epidemic abated.[1] Snow's observations eventually led to the currently accepted theory of disease propagation. Since Snow's era, the capabilities of GIS have exploded with the advent of both freeware and commercial packages to allow computer based analysis of spatial data.

The tools offered by modern GIS allow the correlation of certain quantities and properties with spatial (x, y, z) coordinates. Such quantities may include elevation, temperature, population density, household income, crime statistics, resources, and disease outbreak, as seen above. Given the almost infinite possibility of mapping anything with a spatial distribution, modern GIS is used in a range of industries such as urban planning, education, civil engineering, surveying, conservation and wildlife management, banking, aeronautics, transportation, crime scene investigation, and defense.[2] In archaeology, GIS has been used to assist in analysis of water flow, landscape reconstruction, historical maps, topography, and the regional distributions of isotope ratios, chemical levels, artifacts, features, and types of pollen across areas as small as a single site or as large as a continent.

One of the major difficulties in past excavations at the John Brown House (JBH) is that excavation units have not been reliably georeferenced to maps of the area and the site.[3] The goal of this project was the creation of a GIS database concerning the JBH and our archaeological digs on the property to help spatially relate excavation units to maps and images of the property. Herein, the process by which the GIS database was created is described. The utility of such a database is demonstrated through the creation of a digital elevation model (DEM) of the property and the incorporation of previously recorded geophysical maps and satellite imagery of the site into the database. Such links have broad implications for those of us who dig at the JBH, regarding both interpretations of the units at which we excavated this year and indications of where to dig in the future.

Field Work: Survey

In the field, the first step was choosing a set of datum points. During a survey, datum points serve as a reference to where all other points are. Thus, datum points should be stationary objects which will not move between weeks of survey. Within the set of datum points, there should be a primary datum, which corresponds to an origin, or (0,0,0) on a Cartesian Coordinate (x,y,z) system. For convenience, it is

[1] Snow, J. "On the Mode of Communication of Cholera." 2nd Ed, John Churchill, New Burlington Street, London, England, **1855**.
[2] "Industries." Esri. http://www.esri.com/industries.html.
[3] See for instance Figure 1 in: Baker, S. "Site-wide Stratigraphy Report." John Brown House **2009** Site Report.

often wise to set your datum point as a point aside from the origin so you do not end up with negative distances and elevations. We set our datum as (1000m, 1000m, 100m). This "fudge" was corrected for during the computer analysis of the spatial data. Luckily for us, an old granite hitching post is embedded in the ground on the eastern edge of the property. The hitching post overlooks the property, as it is slightly elevated, so it was used as the primary datum point. Other datum points included a nail in a beam embedded in the ground near the parking lot entrance, a metal support for the picket fence surrounding the property, a drill hole in part of the stone wall to the south of the property, and a crack in the marble patio next to the house.

Next, we set up and leveled the total station. Total stations are often accurate to 2 parts per million, or 0.0002 percent error, so properly leveling the total station is very important, as very slight tilts (less than one degree) can substantially distort the station's measurements of angles and distances. A total station is an electronic theodolite fitted with an optical distance measurement device. Theodolites are devices used to find angles (θ, ϕ; see Figure 1) from a point. Theta (θ) generally corresponds to the angle from a reference vector around a circle in a 2D xy plane; phi (ϕ) is the angle from a vector pointing straight up to any other point. A good illustration of these two angles is the distinction between pointing from one corner of a room to another (theta) and pointing from a light fixture on the ceiling to a point on the wall (phi). In our case, theta was usually measured with respect to the reference vector between the primary datum and datum three, the metal support for the picket fence.

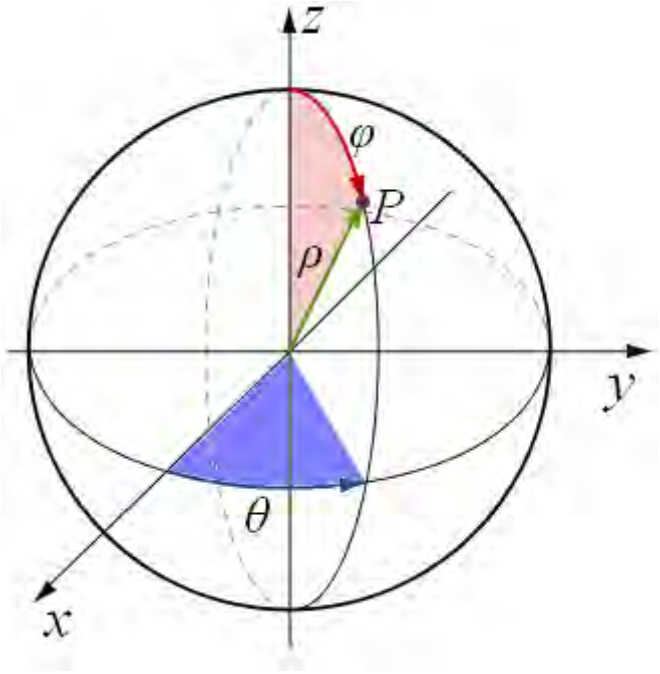


Figure 1: Illustration of angles θ and ϕ for arbitrary point P in a 3D Cartesian coordinate system.

The distance measurement device measures distances from the station to a prism (more on this later) by emitting laser light at a variety of wavelengths. The light wave reflects off of the prism and is picked up by a detector in the total station. If the distance (*d*) to the prism and back is an integer (*n* = 1, 2, 3…) multiple of the wavelength (*λ*), the waves will constructively interfere, giving the returning wave

amplitude (i.e. intensity) double that of the emitted wave (Figure 2). If the distance between the station and the prism is an integer and a half multiple of the wavelength, the waves will destructively interfere, cutting the amplitude of the returning wave to zero. The detector in the total station can read the amplitude of the returning wave and correct for the non-vacuum (i.e. atmosphere) nature of the measurement, and will increment the wavelengths to determine the distance between itself and a prism. Next, the handheld data collector was linked via Bluetooth to the station. The data collector stores the angles, positions, and distances measured by the total station for eventual upload to a computer.

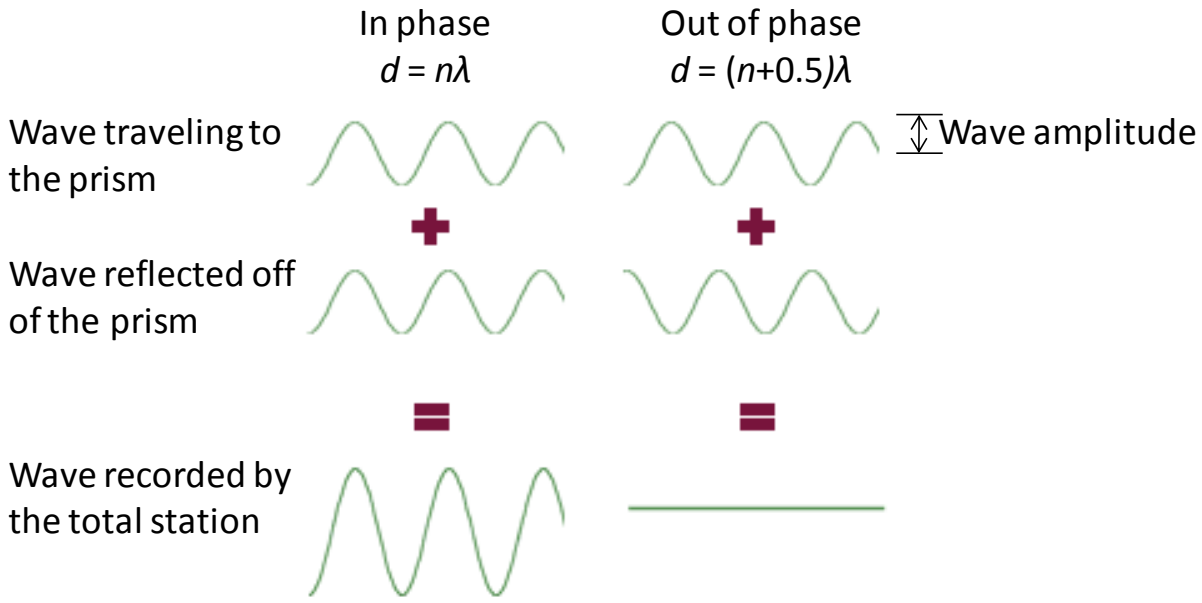


Figure 2: Constructive ($d = n\lambda$) and destructive ($d = (n+0.5)\lambda$) interference.

The survey itself involved one person walking around the yard with a reflecting prism on a pole and one person operating the total station over the datum point. The pole was set to 1.5m tall, a quantity which was programmed into the data collector so that it subtracted that distance from the measured elevation of each point. The pole was leveled, the station operator focused the laser on the prism, and the distance and angles to the prism were recorded to the data collector. For points which were not visible from the primary datum because of trees or other obstructions, we set up the total station at datum three and used the vector between datum three and the primary datum as a reference for theta.

We took several sets of points in addition to the initial datum points. The first set included points along the outline of the yard and the parking lot. These outline points were spaced approximately 5-10m apart depending on the curvature of the outline at that point. In areas with higher outline variability, higher point resolution was needed to accurately capture the curvature. These points are essential to give an idea of where everything on the property is located compared to the rest of the world. Next, we took points at the corners of each excavation unit. These unit corner points enable us to compare the locations of the units to georeferenced subsurface geophysical features, satellite imagery, and entities

on historical maps.[4] The third set included georeference points. These enabled us to accurately overlay satellite imagery, geophysical maps, and historical maps on our data. Useful georeference points, like datum points, are objects or spots which could not have moved for a long time, including street corners, fire hydrants, manhole covers, and corners of buildings, but which are also visible on the maps we want to overlay. Next, we mapped the feature excavated in Unit 11 so it could be referenced to the geophysical maps. Lastly, one of the surveyors walked around the yard in an approximation of a grid (point spacing 6.5 paces, or ~6.5m) to gather points to be used for the DEM.

Lab Work: Computer Analysis

To analyze our data, we used the ArcGIS software suite created by Esri Inc. Luckily, the software converts datum locations, reference vectors, angles, and distances into (x,y,z) points for us, minimizing the amount of math we had to do. After importing the data points into the software from the handheld data collector, we organized our GIS database generally as follows:

- Points
  - Datums
  - Unit Corners
  - Georeferences
  - Topography Points
  - Outline Points
    - Parking Lot
    - Yard
- Lines
  - Outline
- Polygons
  - Units
  - Features

Next, using the "Georeference" feature in ArcGIS, we linked a Google Earth satellite image of the site to the points (Figure 3). Unfortunately, the satellite image is dominated by leaf cover, making it rather unhelpful for archaeological interpretation. Leaf cover also made it difficult to georeference to the manhole covers and fire hydrants to the north of the property. But, it is useful to give audiences not particularly familiar with the geography of the site perspective on how the site is situated with respect to the real world and the JBH itself. In the future, it would be helpful to find a satellite image of the property during the winter so that leaf cover is less of a problem.

[4] Schwartz, E. "GIS and Historic Maps." Chapter A.

Figure 3: Satellite image overlaid on the GIS database. Outline points are visible as green dots connected by a dashed red line. Yellow squares correspond to units 10, 11, and 12 (South to North) and red crosses are georeference points (FH=Firehydrant, MH=Man Hole cover).

Then, also using ArcGIS's georeferencing function, we overlaid geophysical maps taken as part of a 2008 survey by Thomas M. Urban onto our data points.[5] The 2008 study produced three maps. The first, and probably most informative, is a quadrature map taken of the response at 20010 Hz. This map generally corresponds to terrain conductivity (red=conductive, blue=resistive). The second map, a measurement of the in-phase 1170Hz response, indicates high conductivity materials, and perhaps magnetic susceptibility. The third is a measurement of in-phase 20010 Hz response. These maps are overlaid on our dataset in Figures 4, 5, and 6.

[5] Urban, T. M. "John Brown House Preliminary Geophysical Survey Report." **2008**.

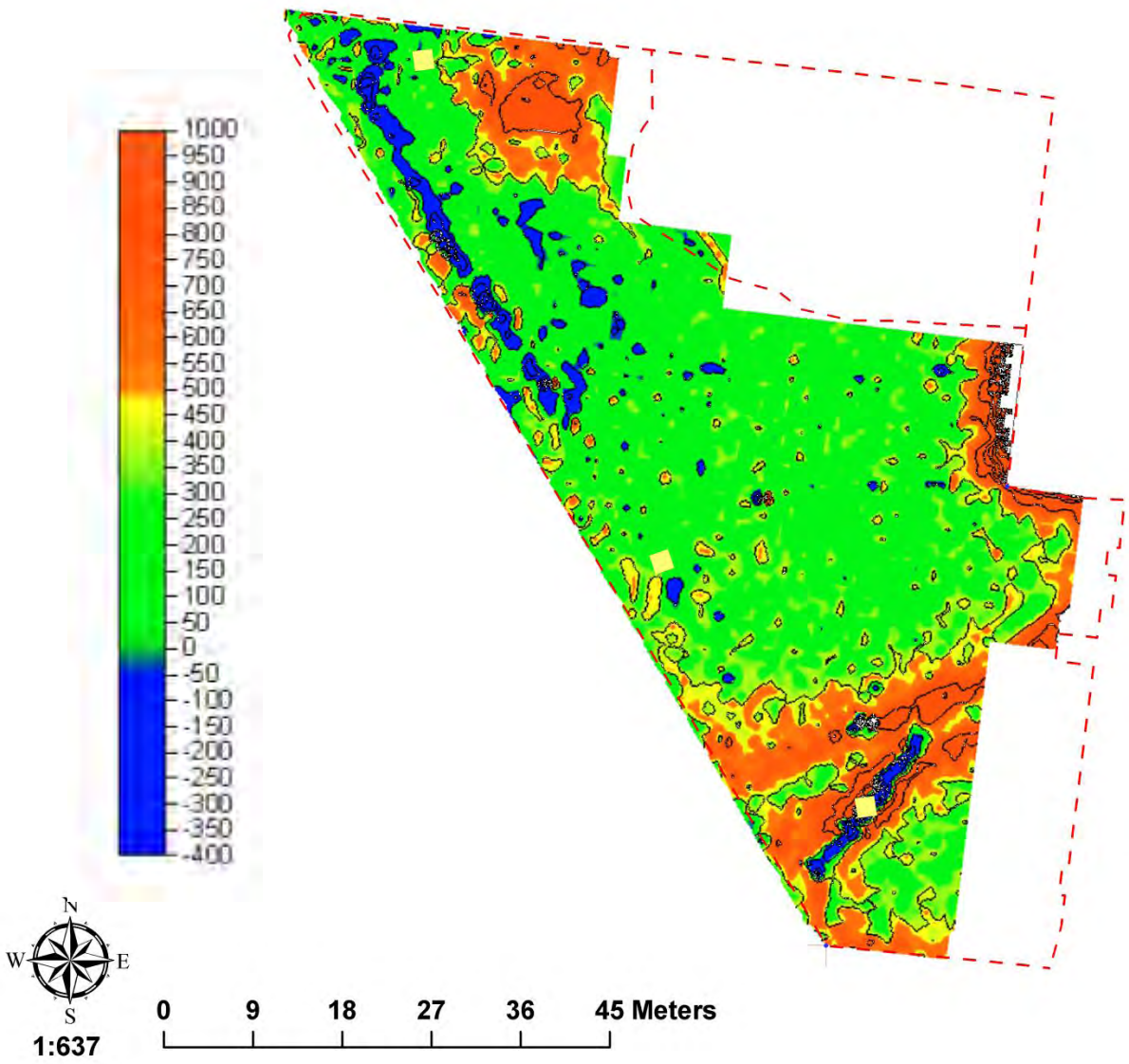


Figure 4: Quadrature response at 20010Hz, units (yellow squares), and the property outline (red dashed line).

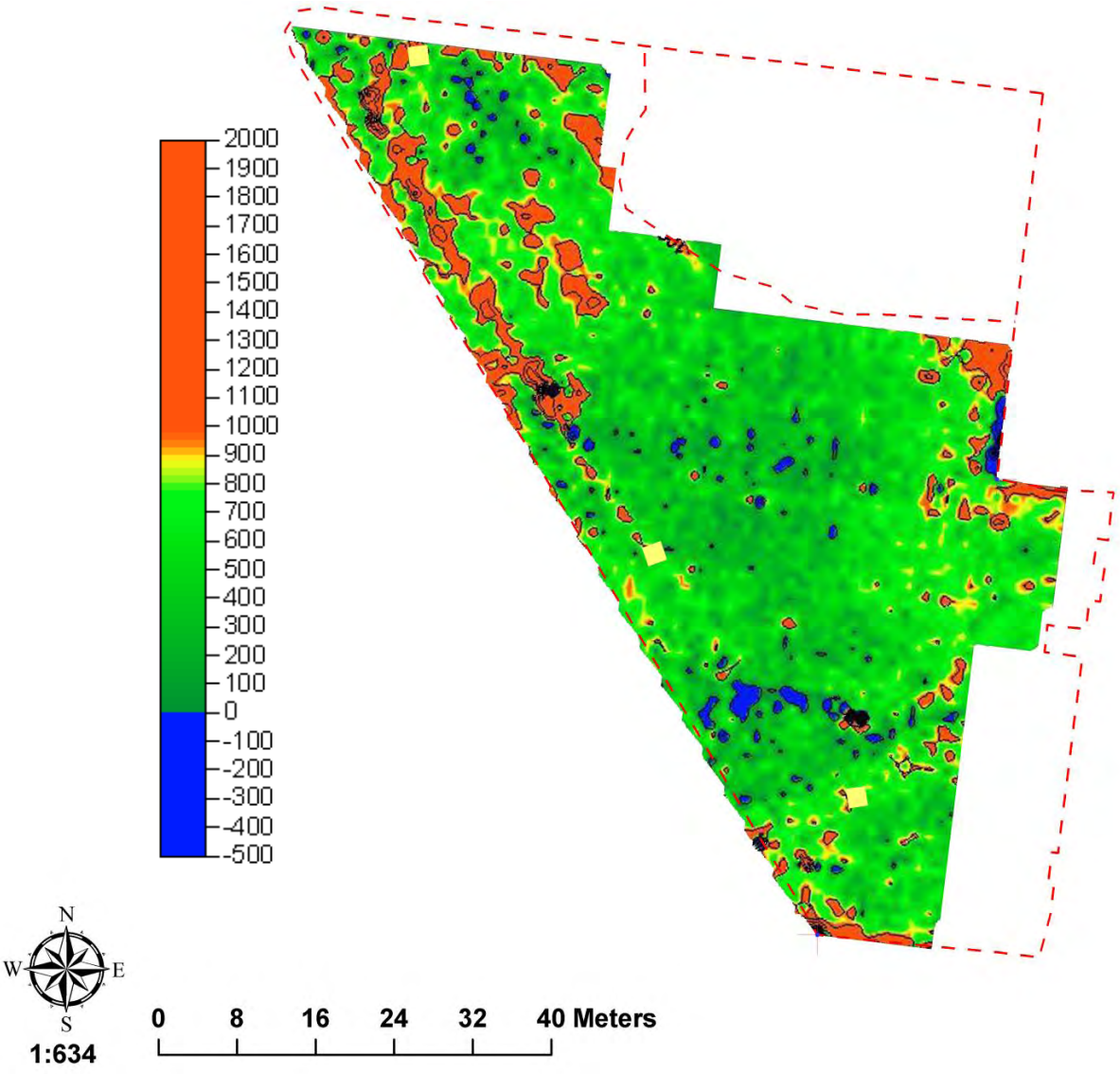


Figure 5: In-phase response at 1170Hz, units (yellow squares), and the property outline (red dashed line).

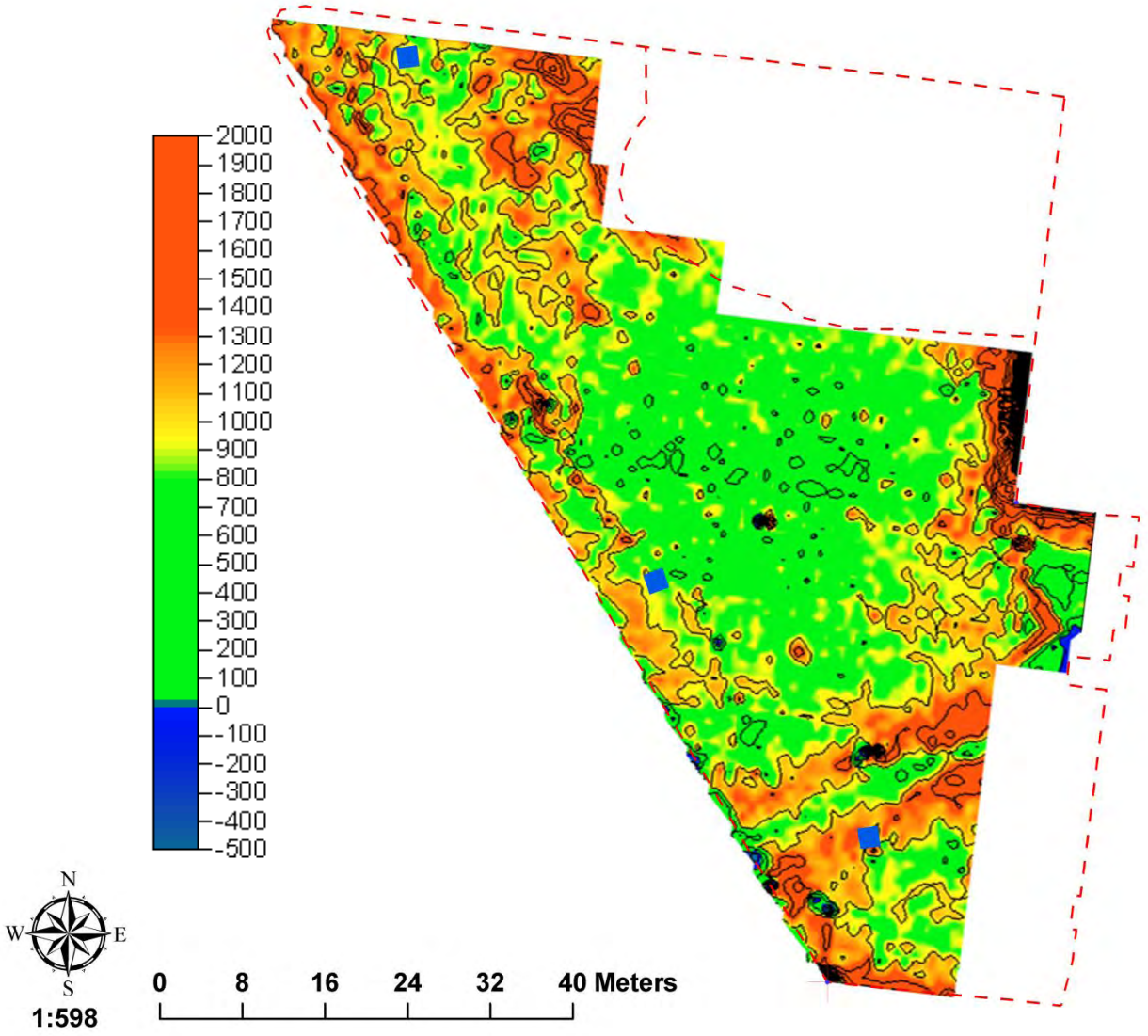


Figure 6: In-phase response at 20010Hz, units (blue squares), and the property outline (red dashed line).

Lastly, we created a digital elevation model (DEM) of the site using elevations from the parking lot outline, yard outline, and topography points. ArcGIS creates DEMs using interpolation, or filling in the unknown elevations between two known elevations.[6] Interpolation is contrary to extrapolation, which extends known data to areas beyond that data's end points. For instance, in the set {1, 2, 3, n, 5, 6, m}, you would interpolate that n=4 and extrapolate that m=7. There are three methods of interpolation: inverse distance weighting, spline interpolation, and kriging.[6] Though the mathematics of each are a bit beyond the scope of this report,[6] they each have some nuances which should be mentioned. Inverse distance weighting is a linear technique, so it averages the elevations of two points to give an elevation at a point equidistant (i.e. the midpoint) between the two known points. It then does the same for many points around the area in question and favors the elevations of points closer to the unknown area. This

[6] Conolly, J.; Lake, M. "Geographical Information Systems in Archaeology." Cambridge University Press, Cambridge, UK, **2006**.

process leads to bumps localized at each known point, so inverse distance weighting is better for surveys with high point density. Splines are piece-wise polynomial functions which create a smooth curve through many known points using the calculus of variations to minimize the "action" of the curve.[7] Splines produce aesthetically pleasing surfaces but tend to be a bit less accurate in areas with lower densities of points with known elevations. The third method, kriging, works optimally in areas where known elevation data is sparse, has a low density, or is irregularly distributed. It is the most mathematically complex, and takes advantage of inverse distance weighting as well as statistical methods to minimize error in the DEM. Based on the very gradual slopes found on the property of the JBH, spline interpolation appears to be the best looking, and most realistic, result. The results from each method are shown in Figures 7, 8, and 9.

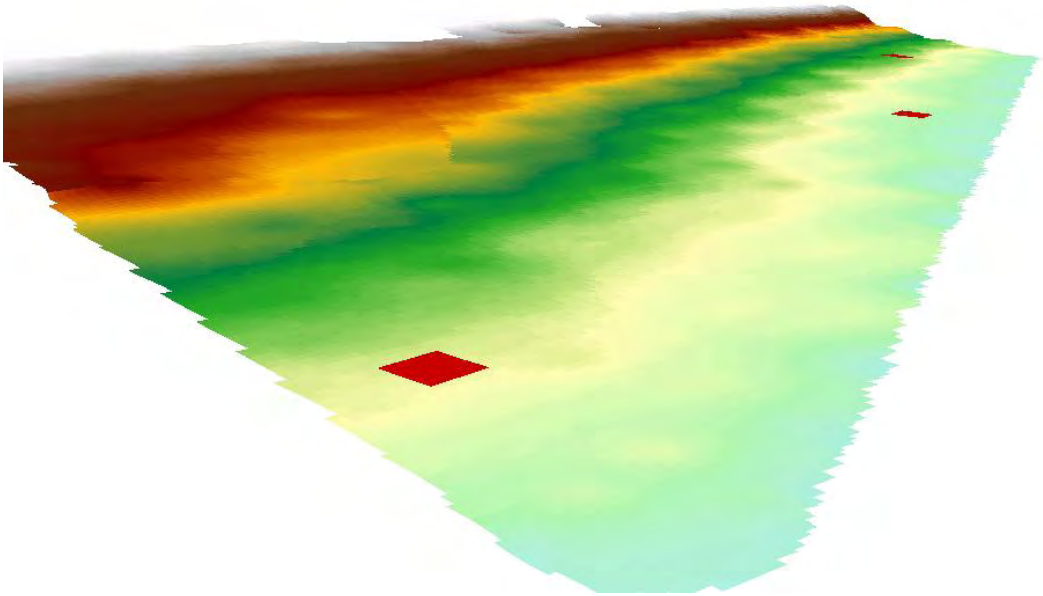


Figure 7: Perspective (facing south) DEM generated from inverse distance weighting interpolation. Grey corresponds to the highest elevation, while light green corresponds to the lowest elevations.

[7] For more information, see: (a) Doll, J. Chem 2770: Quantum Mechanics Lecture Notes. September 23, 2010. (b) Feynman, R. P. "The Feynman Lectures on Physics." Vol. 2, ch. 19, **1964**, or [6] and references therein.

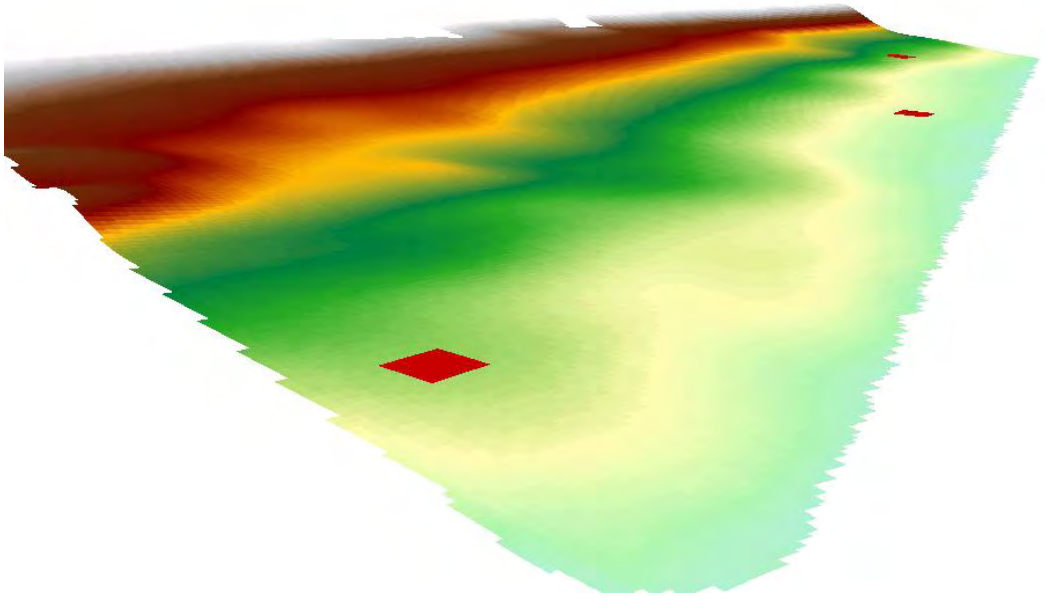


Figure 8: Perspective (facing south) DEM generated from spline interpolation. Grey corresponds to the highest elevation, while light green corresponds to the lowest elevations.

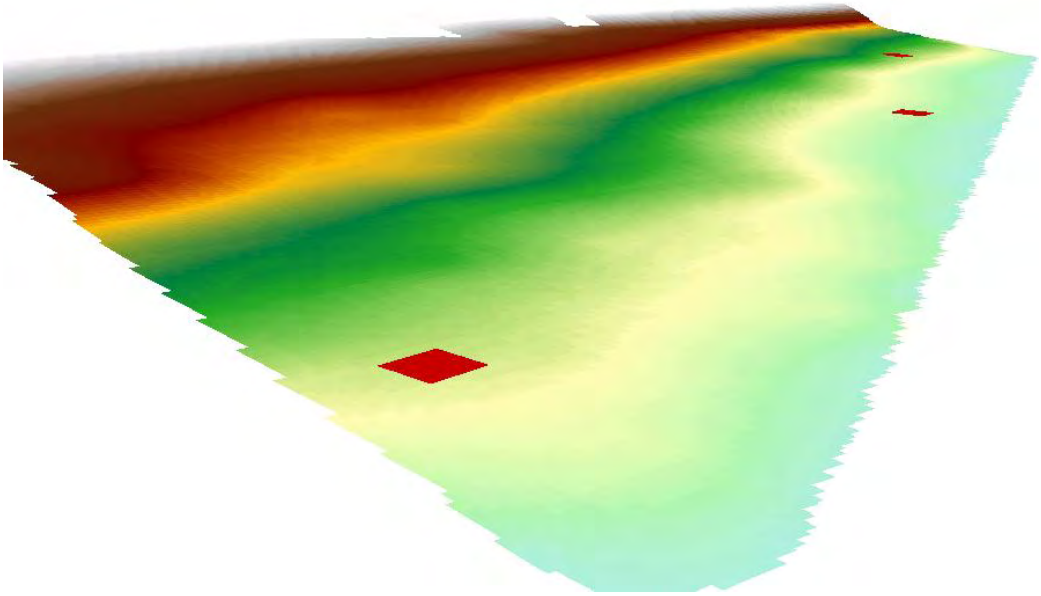


Figure 9: Perspective (facing south) DEM generated from kriging interpolation. Grey corresponds to the highest elevation, while light green corresponds to the lowest elevations.

Archaeological Interpretations

The geophysical maps are the most informative regarding interpretations of the 2010 excavation units. The excavations at Unit 10 were intended to uncover the mysterious feature running almost the

length of the property's western boundary.[8] Unfortunately, as seen in Figure 4, Unit 10 missed both the feature and the Hale Ives House (HIH), the geophysical trace of which is seen as the large yellow blob at the north of the property.

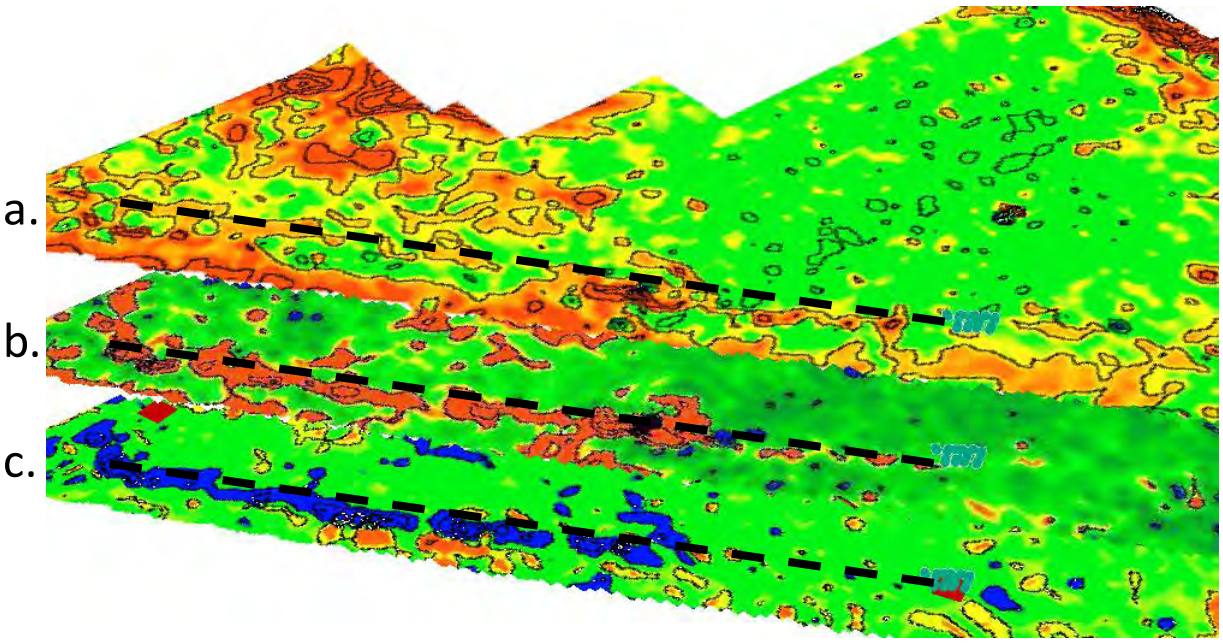


Figure 10: Stack of the (a) in-phase response at 20010 Hz, (b) in-phase quadrature response at 1170Hz, and (c) out of phase quadrature response at 20100Hz maps.

Unit 11 continued excavations of the wall which was uncovered during the last field season.[9] Looking at a stack of the three geophysical maps (Figure 10), it is fairly easy to see that the feature appears to be a direct continuation of the mystery geophysical feature which was also previously excavated during the 2008 field seasons as Units 4 and 5.[10] Interestingly, close analysis of a 1949 aerial photo of the house might yield clues as to what the mysterious feature actually is.[11,12] As seen in contrast-enhanced Figure 11b (reproduced from [12]), there appears to be a feature in the northwest corner of the property that may continue to the southwest corner as well. This feature is clearly not the sidewalk (— - — -), the wall on Benefit Street (——), or the top of the fence (- -), which are marked with yellow lines. In fact, it appears that this feature may have been a terrace, perhaps installed to deal with drainage problems which plagued the property for many years.[13] Of course, this is only speculation, but

[8] Leddy, L. "Unit 10 Excavation Summary." Chapter A.
[9] Hernandez, A. "Unit 11 Excavation Summary." Chapter B.
[10] (a) Nuding, E. "Excavation Summary – Unit 3 and Unit 5." Chapter 5, John Brown House **2008** Site Report. (b) Hatch, P. "Excavation Summary – Unit 4." Chapter 6, John Brown House **2008** Site Report.
[11] (a) Waterman Engineering Co. "Map of Land in Providence Rhode Island Belonging to the Rhode Island Historical Society." December **1950**. John Brown House Architectural Plans and Manuscripts Collection, Rhode Island Historical Society Library.
[12] Pridham, J. "Landscape Archaeology Of the John Brown House Property." John Brown House **2009** Site Report.
[13] Smith, B. "Fragment of Drainpipe." John Brown House **2009** Site Report.

it would perhaps be a good indication as to what the feature in Unit 11 is, as the terrace appears to traverse the length of the yard, consistent with the geophysical maps.

Figure 11: (a) 1949 aerial photo of the John Brown House (reproduced from [12]). (b) Contrast-enhanced portion of the photo. Yellow lines correspond to the sidewalk (— - — -), the wall on Benefit Street (——), and the top of the fence surrounding the property (- -).

Unit 12 began excavations hoping to find traces of the marble fountain pictured in Figure 11a. The fountain was installed by Marsden Perry and presumably removed during the 1960s when the Rhode Island Historical Society (RIHS) landscaped the property and put in the parking lot.[12] Based on Unit 12's findings, Unit 12 was not anywhere near the fountain, as no indications of any foundation or marble from the fountain itself were uncovered. However, as seen in Figure 4, Unit 12 did dig directly into an

area of low conductivity. This low conductivity is consistent with the massive amount of mortar unearthed in this unit. According to Urban's 2008 report, the low conductivity feature represents an historical drainpipe.[5] However, given that no drainpipe was found and that Unit 12's only sub-topsoil context (JBH69) was almost entirely fill and featured artifacts randomly dispersed from many time periods, it seems likely that this historical drainpipe was removed during the 1960s landscaping effort. The fill probably resulted from the area of the pipe being filled back in by earth disturbed and upturned from other contexts. Regarding the long-sought fountain, it is possible that traces of the fountain's foundation remains in the low conductivity area in Figure 4 several meters to the north of Unit 12.

Conclusions and Recommendations for Future Study

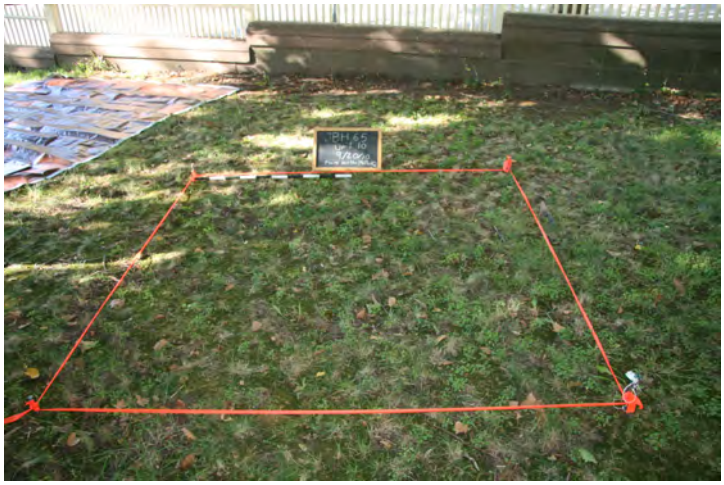
Geographic information systems have proven their worth to the excavations at the John Brown House. In particular, being able to link geophysical maps to the locations of our units has shed great light on what it is that we were excavating. Unit 10, it appears, missed the mysterious feature and the Hale Ives House. However, we will know where to position a unit in future years to excavate either the HIH or the mysterious feature. Regarding Unit 11, GIS has shown us that the feature uncovered is likely a continuation of the feature uncovered by Units 4 and 5 in the 2008 excavations. Combining GIS and geophysics with an aerial photograph indicates that perhaps this feature is actually a terrace. For Unit 12, GIS and geophysics confirmed that excavations occurred over the site of a presumed historical drainpipe. Additionally, future excavation sites over the modern drain pipe and the possible fountain location are now easier to find.

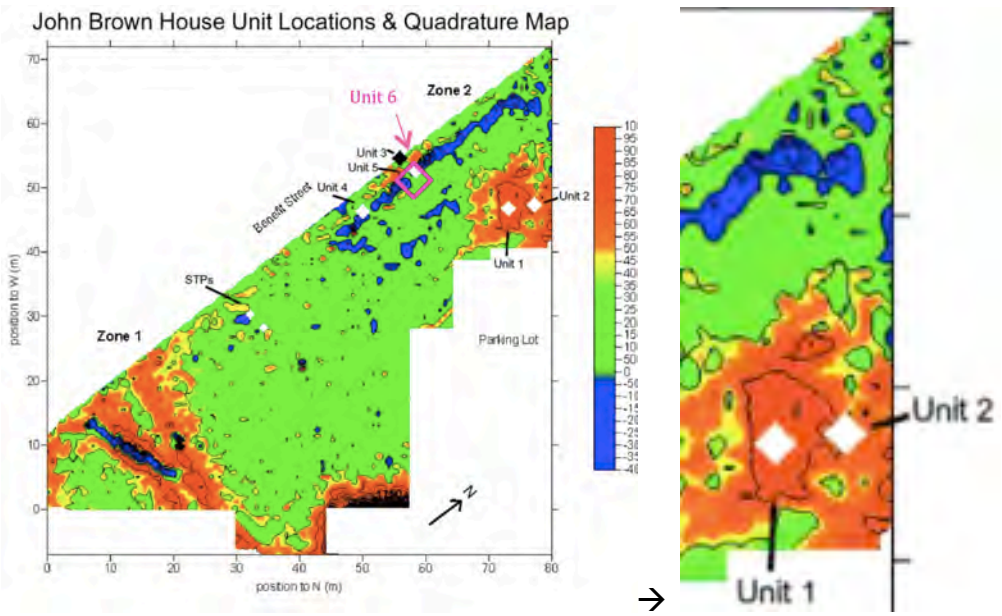
Despite the success of this project, there are many ways to extend it. First, the digital elevation model was not extensively incorporated into any archaeological analysis. The DEM and ArcGIS could be used to study water management and flow on the property and the way the landscape changed over time, both of which can be studied with tools embedded in the ArcGIS package. Additionally, the DEM could be expanded to include digital models of the JBH itself, a model of the HIH, and the surrounding trees and neighborhood. Three-dimensional models can be created for free using Google Sketchup or similar tools. In addition to being more visually pleasing than the rather boring landscape presented above, such a DEM/model composite could be visualized in Brown's Cave, an interactive 3D virtual reality environment. A Cave presentation would be useful to visualize how the landscape looked in centuries past and to present our findings to the public and other archaeologists. GIS could also be used to study artifact distributions in linked contexts[14] throughout the yard. A trend in artifact distributions could indicate variable use of the property during a certain time period. For instance, a marked shift in the types of ceramics found near the house and in the yard might be indicative of servant occupation in the yard. Likewise, there may be a distinction between the tastes of the occupants of the HIH and those of the JBH. Lastly, orthorectifying or restoring the 1949 aerial photo is a worthwhile pursuit, considering how much information it has to offer. If it were possible to definitively pinpoint the fountain or the possible terrace or wall of some sort in the photo on a GIS map, this could definitively prove the function of the mystery feature or the location of the fountain.

[14] Bartos, N. "Site Wide Stratigraphy Analysis." Chapter Z.

Unit 10 Excavation Summary
Laura Leddy

Unit 10 was opened on September 20, 2010, in the Northwestern region of the John Brown House property, just South of the Charlesfield Street-side fence (Zone 2 on the GIS map). It was closed on November 15, 2010. It is a 2x2 meter square. It is the only unit that was opened this season in the general area of the property where the Robert Hale Ives House once stood. The excavators of this unit began with a "fresh" plot; no shovel test pits had been dug in the immediate area this season. The placement of this unit was specifically decided using the results of the geophysical surveys taken in 2008. Dark blue and orange areas on the map represent geophysical anomalies; our group was hoping to place Unit 10 in a dark blue region, which we also hoped corresponded to where the front of the house would have been. As we had no picture of the front of the house to guide us, we simply made an informed guess with respect to the landscape and size of the property. The conjectured existence of a stone foundation wall was our group's hypotheses driving the excavation, though we were also looking simply to gather more information of any kind about the Hale Ives House.





A close-up of the region of the property where unit 10 was placed.

Excavation Methods

The excavation of Unit 10 was performed by Allison Iarocci, Benjamin Jones, Laura Leddy, and Evie Schwartz under the direction of Professor Krysta Ryzewski, with assistance from TA Jessica Nowlin. Joseph Iarocci ’81 aided in digging on November 1. Shovel shaving was the primary method of digging, though trowels were also used to define clean vertical walls of the unit and to dig around delicate artifacts and the feature. A root saw was occasionally employed while working in the deeper contexts to clear out large roots to make shoveling easier. All the soil that was removed was sifted through ¼” wire mesh. Artifacts were stored in plastic Ziploc bags, separated by context.

Measurements, methods, and general excavation notes were recorded on Excavation Forms, one for each context. Drawings, photos, and video of each context and special feature were taken.

Before digging commenced, a datum point was assigned and

elevation measurements were taken. We noted that the unit is on a slight incline, with the Eastern side being the higher side. The Southeastern corner was designated as the datum point, it being the highest point of the unit's surface. Accordingly, the elevations of the other significant points were as follows:

Measuring Location	*Elevation Below Datum (cm)*
Northwestern corner	8.5
Northeastern corner	3.15
Southwestern corner	7.5
Center	6.5

Stratigraphy

We excavated three different contexts in Unit 10. The topsoil context was JBH 65, which included a layer of grass and clover. This context transitioned very clearly to the next context, JBH 68, with a marked change in soil color—from the even, dark brown of JBH 65 to the calico-like mixed coloring of JBH 68. JBH 68 had the greatest depth (in terms of size in a vertical direction) of the contexts that we excavated, and gravel-sized stones comprised approximately 1/3 of every bucketful that was sifted. It was also in this context that we found the majority of our artifacts, including a high concentration of charcoal and coal substances, brick fragments of all sizes, nails, and several different ceramic types. Context JBH 73 was a roughly triangular area located in the Northeastern quadrant of the unit, and was comprised of the soil inside Feature 5 (initially thought to be something architectural). This context was surrounded by context JBH 68 on three sides, and, once we had removed Feature 5, the soil under where it had been matched that of context JBH 68.

Context JBH 65

JBH 65 was the surface context of Unit 10. It was excavated by shovel shaving, particularly because the shovels' sharp edges allowed us to cut through the thick network of grass, clover, and moss to reach the soil. All soil removed from the unit was sifted through

¼" mesh. Because soil was clinging to the grass's roots, excavating this context was somewhat slow-going because we were required to break apart the clumps by hand to be able to sift. The soil was very dark brown, dry, and slightly sandy; it was given a Munsell value of 10 yr 2/2. The elevation measurements for each corner are as follows:

Measuring Location	*Elevation Below Datum (cm)*
Northwestern corner	19
Northeastern corner	15
Southwestern corner	14.75
Center	17

Context JBH 65 was determined to have ended once the soil became mottled orange-and-brown across the unit.

Though this context did not offer a great number of artifacts, the few we did find ran the gamut from present-day pieces to those contemporary with the historical period we are concerned with. Below is a list of the artifacts from context JBH 65, with approximated date ranges.

Artifact Description	*Quantity (pieces)*	*Production Range (years)*
Whiteware	4	1830—present[1]
Porcelain, bone china	1	1830—1900[2]
Curved glass	17	
Flat glass	1	

[1] FLMNH, Ceramic Types Index
[2] FLMNH, Ceramic Types Index

Brick	2	
Chinking stone	1	
Polystyrene piece	1	1937—present[3]
Miscellaneous metal	2	
Large cut nail	1	1791—1900[4]
Plastic bead	1	
Bone	1	

The TPQ for this context is defined by the polystyrene as 1937, as it is the most recently dated of the pieces for which we have date ranges.

Due perhaps to inexperienced over-cautiousness, we probably spent more time working on this context than was probably necessary. However, our attention to detail while excavating this relatively artifact-sparse context afforded us good practice. The skills we gleaned here were quite helpful for excavating the deeper contexts of our unit, which we were to find presented us with interesting questions, both in excavating and analyzing.

Context JBH 68

Context JBH 68 was established directly below JBH 65 because of a soil change. The soil of this context was "mottled", a calico-like mixture of dark brown, slightly sandy soil and lighter orange-brown soil. The balance between the dark brown and the orange-brown became more equal as digging progressed deeper. The dark brown soil was given a Munsell value of 10 yr 2/2 because it seemed to match that of context JBH 65. A Munsell value of the orange-brown soil was unfortunately not recorded, but it is estimated to have been 5yr 4/6. JBH 68 also contained many more gravel- and pebble-sized rocks (all of which seemed to be of similar composition), consistently across the unit and in a sizeable quantity throughout. As stated in a previous section, these particular rocks composed approximately 1/3 of every bucketful of soil sifted.

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[3] "History of Polystyrene."
[4] Visser, "Nails."

Shovel shaving and trowel methods were used both to excavate this context and define clean, vertical walls in the unit. This was the deepest of the contexts we excavated; the corner depth measurements were as follows:

Measuring Location	*Elevation Below Datum (cm)*
Northwestern corner	43
Northeastern corner	42
Southwestern corner	40
Center	46

Context JBH 68 was determined to have ended once the soil became an even brown (not sandy) across the unit.

It was this context from which the vast majority of our artifacts were recovered. Below is a list of the artifacts recovered from context JBH 68, with approximated date ranges:

Artifact Description	*Quantity (pieces)*	*Production Range (years)*
Curved glass	13	
Flat glass	49	
Brick	182	
Mortar	15	
Mortar attached to stone	1	
Mortar attached to brick	1	
Tar flakes	30	
Wall plaster	2	
Coal	57	
Cut nails	135	1790—1900[5]
Wire nails	17	1890—present[6]
Screws	16	1790—present[7]

[5] Visser, "Nails."
[6] Visser, "Nails."

Iron architectural hardware	32	
Metal slag	7	
Iron wire rope	3	1840s—present[8]
Molded fancy brick	1	
Slate roof chips	7	1650s—present[9]
Miscellaneous metal	9	
Pipe stem	2	1720—1750[10]
Pipe joint	1	1720—1750[11]
Whiteware	13	1830—present[12]
Stoneware, white-salt glazed	1	1720—1770[13]
Pearlware	6	1770—1840[14]
Creamware	9	1762-1820[15]
Porcelain, bone china	2	1830—1900[16]

The TPQ for this context is 1900, that being the point at which both cut nails and the porcelain ceased common and regular production.

As evidenced by the table above, the majority of artifacts in this context are related to architecture and construction. By far the artifacts that we found in the greatest quantities were bricks and nails. At the time of excavation, we

[2] ...s and Screwdrivers."
[8] Sayenga, "Modern History of Wire Rope."
[9] Levine, "The Repair, Replacement, and Maintenance of Historic Slate Roofs."
[10] Iarocci, "Object Biography."
[11] Iarocci, "Object Biography."
[12] FLMNH, Ceramic Types Index
[13] FLMNH, Ceramic Types Index
[14] FLMNH, Ceramic Types Index
[15] FLMNH, Ceramic Types Index
[16] FLMNH, Ceramic Types Index

were anticipating discovering an architectural feature because of the prevalence of such artifacts, no less in an area that was expected to be the location of a stone foundation wall (based on the 2008 GIS map; see 'Introduction'). This turned out not to be the case (see section 'Context JBH 73), but simply the *quantity* of construction pieces in Unit 10 as compared to the other units is certainly a point of interest. While Unit 11 did excavate an actual wall and the remainders of a tiled feature, they nor the Unit 12 group found such a great number of nails; Unit 12 contained vastly more pottery and ceramic sherds than our unit.

Context JBH 73

This context was located in the Northwestern quadrant of the unit, and was contained on three sides by context JBH 68 and on one side by the unit's wall. It was composed of the soil inside of Feature 5, which was essentially a roughly triangular-outline formation of closely-jumbled bricks, stone and architectural iron pieces. The soil of this context was very dark brown and was thus also assigned a Munsell value of 10 yr 2/2.

However, unlike contexts 65 and 68, it was of an even texture; the soil inside Feature 5 was not sandy.

When Feature 5 was uncovered, it was thought to be a cohesive, architectural structure. Digging proceeded cautiously, with trowels, so as not to disturb the structure. However, it soon became clear that this was not a wall, but rather something more closely

resembling a rubbish/discard pile. Large pieces of brick (chunks as big as half the original brick or more) and stone, some with mortar attached, were packed densely with hunks of iron. None of the pieces were attached to each other or organized in such a way that would suggest that this assemblage had at any time been some sort of structure. We used the trowels to clear dirt away around the artifacts, and removed the large pieces by hand. The sifter was then used to separate out the other, smaller artifacts. Below is a list of artifacts from context JBH 73:

Artifact Description	Quantity (pieces)	Production Range (years)
Flat glass	13	
Cut nails	43	1790—1900[17]
Wire nails	5	1890—present[18]
Screws	1	1790—present[19]
Iron architectural hardware	13	
Metal wire	4	
Slag	2	
Mortar	29	
Brick	45	

[17] Visser, "Nails."
[18] Visser, "Nails."
[19] Bellis, "History of Screws and Screwdrivers."

Painted brick	1	
Coal	5	
Tar flakes	5	
Painted cement	1	
Brown glazed redware	2	1725—present[20]
Creamware	2	1762—1820[21]
Pearlware	4	1770—1840[22]
Whiteware	9	1830—present[23]
Stoneware	1	1720—1770[24]
Porcelain, bone china	1	1830—1900[25]
Miscellaneous metal	2	

The TPQ for this context is, like that of context JBH 68, 1900. The production date ranges for the cut nails and the porcelain, again like JBH 68, defined this context's TPQ.

As evidenced by both the soil Munsell value and the type of artifacts found in this context, this context is extremely similar to JBH 68. The soil was only slightly different, which very well could have been brought about after the context's being deposited, by natural processes (water seepage being an example of one potentially influential factor). Furthermore, the soil below Feature 5 seemed to match directly the soil of context JBH 68. It may be reasonable to speculate that JBH 68 and JBH 73 were deposited at the same time.

Conclusions

Unit 10 did not contain part of a foundation wall or buried feature, as we had hoped it would, based on the 2008 GIS map. Looking at the 2010 GIS maps, it becomes quite clear

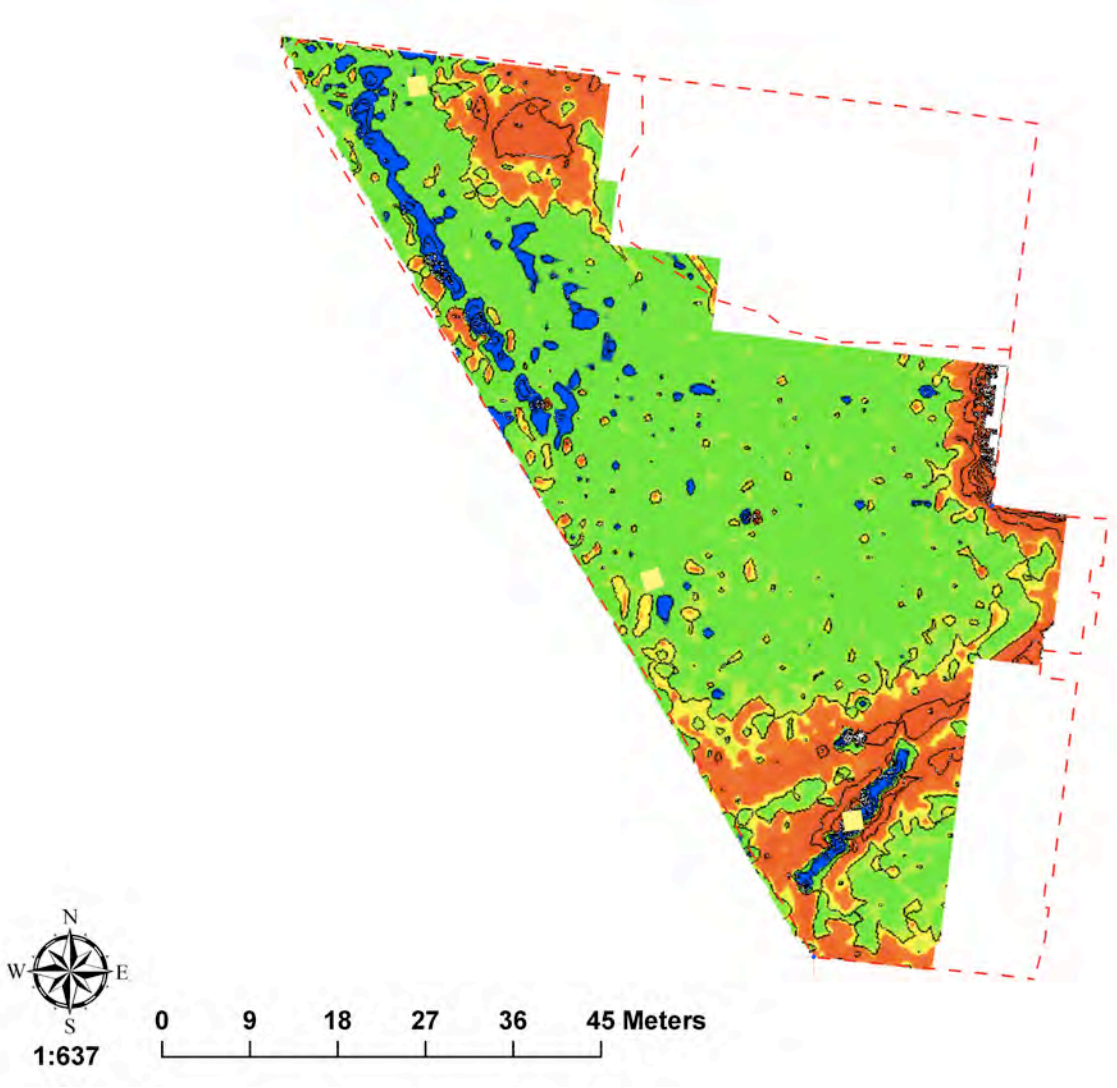
[20] FLMNH, Ceramic Types Index
[21] FLMNH, Ceramic Types Index
[22] FLMNH, Ceramic Types Index
[23] FLMNH, Ceramic Types Index
[24] FLMNH, Ceramic Types Index
[25] FLMNH, Ceramic Types Index

that our unit was placed over neither the high-density area (blue on the map—what we suspected was a foundation) nor the low-density area (orange on the map—the former location of the house). We managed to situate Unit 10 precisely between these areas of interest, with not even the slightest overlap.

Despite this, the area of Unit 10 does seem to have been a use area, though not one of continuous or daily activity. Its close proximity to the house and contents lend support to this, as well as the fact that the soil was quite loose and the perfume bottle we recovered was completely in tact. If this had been an area of regular, daily activity, the soil would have been much more compacted and the perfume bottle would likely have been crushed.

I believe that there is sound evidence to support the notion that this was some sort of debris or rubble depository, perhaps from the demolition of the house in the early 1920s. This is suggested not only by the contents of the unit (a jumble of bricks, stones, mortar, nails, window glass—clearly the fixings for a building), but the unit's placement (in the front yard of where the house was, near the street—perhaps a good location for dumping debris for easy access for removal) and the TPQ's from contexts JBH 68 and 73.

Based on this excavation, I would recommend further digging in this area. Unit 10 does not need to be revisited, but excavating immediately to the Southwest or East to catch the blue or orange on the GIS map could hopefully aid in expanding our knowledge of the Hale Ives House, its peripheral structures, and the property in general.



Unit 10 missed both areas of interest according to the 2010 GIS map.

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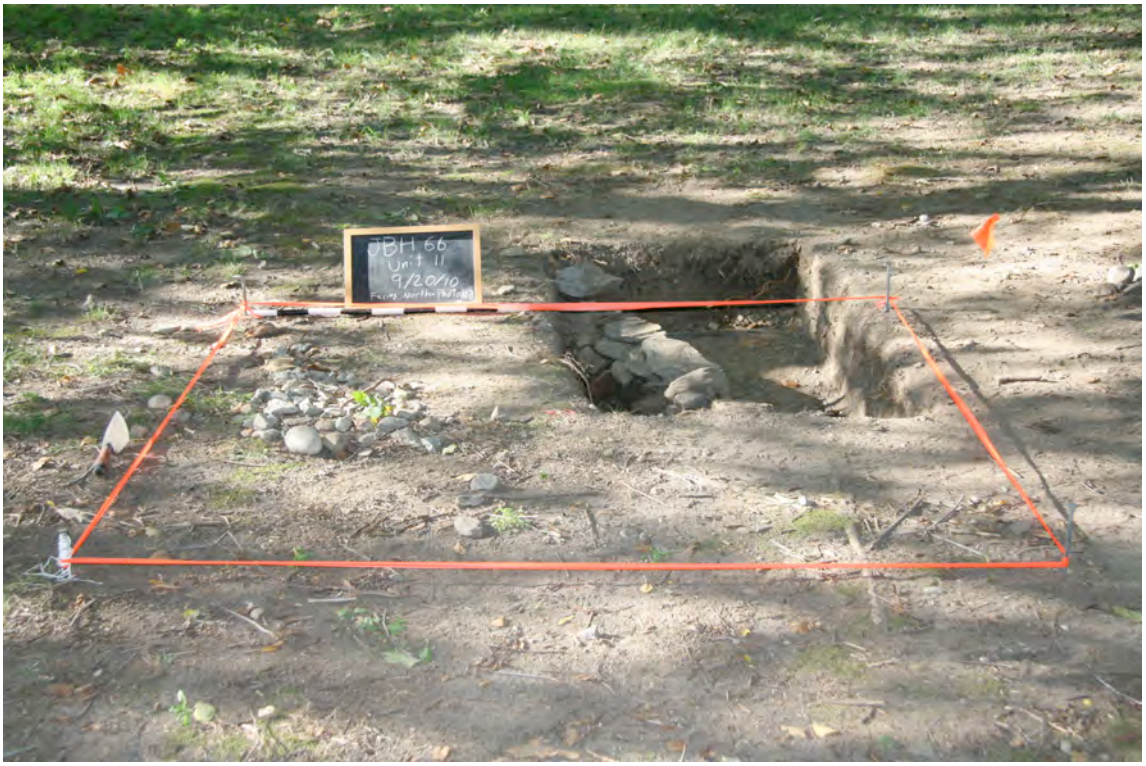
Images

1. All photos courtesy of ARCH1900 students, TA Jessica Nowlin, and Professor Krysta Ryzewski.
2. 2008 GIS map. Courtesy of Archaeology of College Hill: John Brown House, Providence, Rhode Island, Archaeological Report. Fall 2008.
3. 2010 GIS map. Max Mankin with Jessica Nowlin.

Unit 11 Excavation Summary
Alicia Hernandez

Unit 11 was opened on September 20, 2010 as an extension of fieldwork undertaken in the 2008 and 2009 field seasons. The Unit measures 2x2 meters and is located near the center of the western perimeter of the John Brown House property, parallel to Benefit Street. The northeastern 1x1 meter area of Unit 11 encompasses the southern half of the 1x2 meter plot designated as Unit 7 in the 2009 field season. During the 2009 field season a stone wall (Feature 2) was unearthed in the western portion of Unit 7 which served as the motivation for opening Unit 11 in this particular location. The feature was not found on any historical or geophysical maps, and while the 2009 excavators did unearth the wall and explore the contexts surrounding it they did not have sufficient evidence to determine the purpose of the wall (Ben Colburn, in 2009 JBH Archaeological report p.71). The goal in creating Unit 11 was to further explore this area in an effort to determine what type of structure, if any, previously stood in this location. It was decided that Unit 11 should extend Unit 7 to the south, west and southwest by 1 square meter as there was a larger number of inclusions and artifacts found in the southwestern portion of Unit 7. The theory was that exploring this area would yield artifacts that could offer significant information about the purpose of the feature or possibly uncover a second wall perpendicular to feature 2 thus giving the dimensions of the structure and adding to its identification. These were the assumptions and goals that were operating when Unit 11 was opened for the 2010 field season.



Position of Unit 11 at opening with respect to Unit 7

Excavation Methods

The excavation of Unit 11 was conducted by three students: Jenneth Igbokwe, Nicholas Bartos and Alicia Hernandez under the supervision of the graduate teaching assistant Jessica Nowlin. The first step in preparing Unit 11 for the 2010 field season was to remove the backfill and determine its parameters. For reasons previously discussed Unit 7 was extended to the west, south and southwest by 1 square meter. These areas were measured and delineated from the extremities of Unit 7. Upon marking the area of the Unit with stakes and orange tape the datum point was determined. The southwestern corner of the Unit was designated as the datum point and the remainder of the elevations were taken with respect to this location. Once the parameters of the Unit were determined and the opening elevations were taken, digging commenced. The primary method of digging was shovel shaving for the initial contexts and progressed to trowel usage in later more difficult contexts. After the soil as removed it was sifted through 1/4" mesh. Artifacts were bagged by context, which were determined by natural

changes in the soils as opposed to arbitrary measurements, and were processed in the Brown University Archaeology Laboratory at the end of the dig season. The artifacts were appropriately cleaned, identified, and stored for future usage and reference. Excavation notes were taken while in the field that recorded all pertinent information. Each individual student was also required to maintain a field blog to discuss each day's progress and significant finds. The Unit 11 excavation summary predominantly draws on these forms of documentation as well as personal correspondence with other students who are conducting highly specialized work for the purposes of this report. Each step in the archaeological process was documented with photo and video, while these were useful for documentary purposes this report will only use the photos taken to supplement the written report (The photos and video not used here ca be found on the course website at the Joukowsky Institute for Archaeology and the Ancient World Classroom page: (http://proteus.brown.edu/collegehill2010/Home).

Excavation Summary

Prior to excavation, opening depth were taken with respect to the datum point in the southeastern corner (.6cm), the Northwestern corner (6.2cm), the northeastern corner (1.5) which does not reflect any change as it was part of Unit 7 and was not further excavated. Five contexts were assigned during the 2010 field season, each of which was taken due to natural shifts in soil color and composition. The contexts began at JBH 66 (opening), JBH 67, JBH 70, JBH 71, and JBH 72. The last three contexts (70,71,72) were opened at the same time and were designated due to a change in soil composition in different areas of the unit, and the discovery of a feature.

JBH 66

JBH 66 was opened as the initial context of Unit 11 on September 20, 2010. The soil color was determined as 10YR/2/2 using the Munsell guide. This color is consistent with the soil color designation found at the opening context, JBH 45, in Unit 7 during the previous field season (Ben Colburn, in 2009 JBH Archaeological report p. 61). The soil was fine and removed using the shovel shave technique with continual use of root clippers, as roots proved to be a problem throughout each of the contexts. JBH 66 yielded several modern artifacts including various types of plastic and beer caps (see Table 1 for a complete list). The finding of a recent Narragansett brand beer bottle cap was determined to be the most recent artifact making the TPQ (terminus post quem) date at 2006 (For further information see Nicholas Bartos object biographies this volume).

Artifacts used for Dating Context 66

JBH Context 66: Items	Number	Date Range
Black Plastic Twist Cap Pieces	3	
Pieces of Solo Brand Plastic Cup	2	
Narragansett Bottle Cap[1]	2	2006-Present

JBH Context 66: Items	Number	Date Range
Cigarette Filter	1	
Nail[2]	1	1891-Present
Blue Pearlware	1	
Tropicana Plastic[3]	1	1951-late 1980's

Table 1 Artifact List and Dates Context 66

1. For Further information see Nicholas Bartos object biography this volume

2.David R. Brauner: Approaches to Material Culture Research for Historical Archarology 2nd ed.

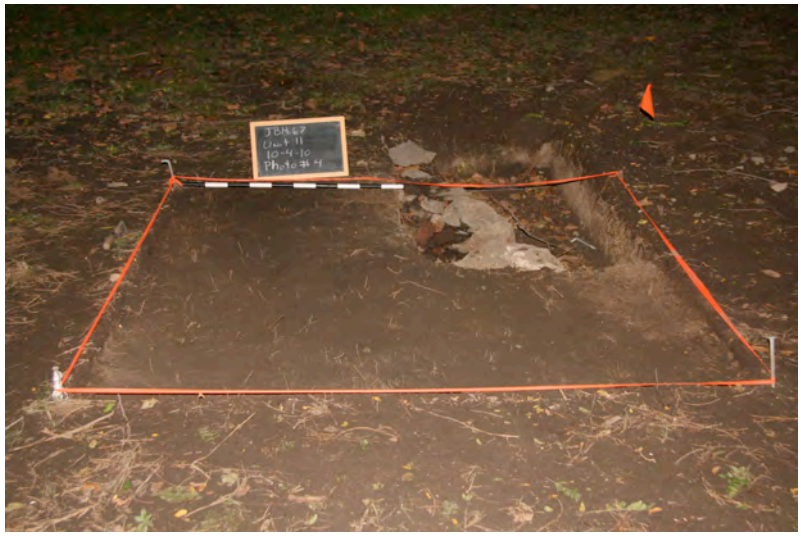
3.For further information see Alicia Hernandez object biography this volume

JBH 67

In the process of excavating context 66, it was noted that there was an increasing amount of gravel in various parts of the unit. Upon determining that the gravel inclusions were present throughout the entirety of the unit context 67 was opened on October 4, 2010. The opening elevations of JBH 67 and therefore the closing elevations of JBH 66 were recorded at: northwestern corner (8.5 cm), center of the northern wall (6.0 cm), center point of the unit (3.4 cm), center of the eastern wall (2.6 cm), and the southeastern corner (3.1 cm). Three additional elevations were taken at the center of the unit, the center of the northern wall and the center of the eastern wall to account for the fact that the northeastern corner would show no change in elevation due to its previous excavation in 2009. The soil of JBH 67 was more sand like and finer grained than the previous context. Its munsell color was recorded as 2.5Y/2.5/1. The appearance of gravel and many small rocks was consistent with finds from the western portion of Unit 7 in context JBH 51 (Ben Colburn, in 2009 JBH Archaeological report p. 63). Due to the large amount of rocks in this context trowels were employed as opposed to shovels in the

previous context. The majority of the artifacts found in this context consisted of brick, brick pieces and tile though there were some ceramic pieces that were helpful for dating (see Table 2 for a complete artifact list). The tiles are small white and square, they measure 2.2x2.2 cm. This context is the first appearance, though they continue throughout future contexts as do the building materials. Due to the fact

Ceramic Pieces used for dating



Opening of context 67

tha

t the majority of the artifacts within this context cannot be dated the dates provided come exclusively from the small pottery sherds. The existence of plain whiteware places the TPQ at the year 1830, the other pottery sherds found have similar dates.

JBH Context 67: Items	Number	Date Range
White Tiles	14	
Small Brick Pieces (without texture or distinguishing marks)	9	
Iron Nails	8	1820-1891[1]

JBH Context 67: Items	Number	Date Range
Textured Brick Pieces	7	
Mortar Pieces	6	
Plain Creamware	5	1762-1820[2]
Clear Glass Pieces	4	
Quartz	3	
Maroon Brick Piece	1	
Orange Brick Piece	1	
Whiteware Plain	1	1830-present[3]
Blue on White Porcelain	1	1644-1900[4]
Coal	1	

Table 2 Artifact List and Dates Context 67

1.David R. Brauner: Approaches to Material Culture Research for Historical Archarology 2nd ed.

2-4: Florida Museum of Natural History; Ceramic ID guide

JBH 70, 71, 72

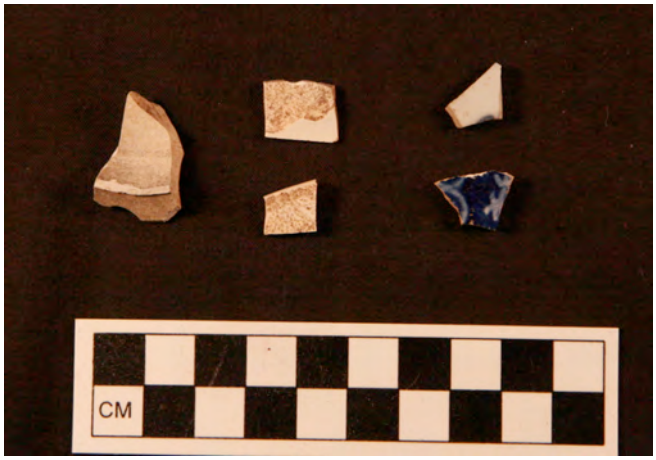
During the excavations of JBH 67 it became apparent that two areas of the unit had very distinct soil composition; shortly after this a feature was noted and given the designation feature 4. The feature is a stone wall and when it was unearthed it appeared to be dividing the two types of soil. At this point three new contexts were opened to account for the shift in soil and the feature. Contexts 70, 71, and 72 were opened on October 25, 2010.

Opening of Context 70,71,71

JBH 70

JBH 70 is a triangular area located in the western most portion of the Unit and is bordered by the Unit limits and the newly discovered feature. The soil in this context is of a much darker color than previous contexts, the munsell color is recorded at 5Y/2.5/1. The soil is fine and has very few inclusions. Opening elevations for this context were taken in the southwestern corner (12.5 cm), the northwestern corner (11.5 cm), as well as an arbitrary location near the center of feature 4 (12 cm). Because this context had relatively few inclusions and was a finer soil a shovel was used as the primary method of excavation. The soil was removed quickly and produced a much smaller amount of artifacts than the other context, but the artifacts found were mainly small ceramic sherds and helpful for dating (See Table 3 for a complete artifact

list). The TPQ date for this context is 1818 as it is the latest date of definite pottery production of the five types found within the context. The blue transfer printed pearlware was predominantly produced in England during the seventeenth century, this window is narrowed due to the specific color of the print. In this case the dark blue (almost navy blue) transfer print had a narrow production date range of 1818-1830 thus putting the TPQ date at 1818 (Florida Natural History Museum; Ceramic ID guide).



Left: Artifacts used to date context 70. Right: Opening of Context 70

JBH Context 70: Items	Number	Date Range
Orange Brick Pieces	3	
Metal Pieces	3	
Shell	2	
Clear Glass	2	
Plain Creamware	2	1762-1820
Dark Blue on White Transfer Print Pearlware	1	1818-1830
Salt Glazed Earthenware	1	1760-1815

JBH Context 70: Items	Number	Date Range
Coarse Unglazed Earthenware	1	1490-1900
Clear Glass with Blue/Green Tint	1	
Delftware Blue and White	1	1630-1790

Table 3 Artifact List and Dates Context 70

Source for all dating from this table: Florida Museum of Natural History; Ceramic ID guide

JBH 71

JBH 71 was the context assigned to the newly unearthed feature 4 which separates context 70 from context 72. The elevations were taken at arbitrary locations along the feature: the southern most portion of the feature near the southern wall of the unit (12.7 cm), the center of the feature (10.5 cm), and the northern most point of the feature near the norther wall (7.6 cm). Feature 4 is a stone wall located in the western half of the Unit. The wall is composed of large slate stones and mortar. The orientation of the wall is slightly northwest to southeast and runs from the northwestern most corner of the unit to the center of the southern wall. This feature is parallel to feature 2 found during the 2009 field season in Unit 7. The wall was carefully exposed using trowels and brushes as to not disturb some of the loose stones near the top of the wall and to keep as much of the wall intact as possible. Feature 4 is approximately 4.2 meters long within the confines of the excavation unit though the feature clearly extends beyond these limits. It has a width of 70 cm. These measurements are comparable to those of feature 2 measuring 5

Map of feature 2 and feature 4

meters long (the Unit 11 extension adds to the length of this feature as it also extends beyond the Unit limits), and has a width of 50 cm. The distance between the two features, which constitutes context 72, ranges from 1 meter at the narrowest point to 1.3 meters at the widest point. The distance between the two walls provoked many questions from the excavators and will be discussed in the analysis section of the paper. (INSERT MAP OF WALLS)

JBH 72

JBH 72 is the context located between feature 4 of the 2010 field season and feature 2 of the 2009 field season. The soil was mottled and consisted of an orange soil, munsell designation 2.5Y/5/6, and a lighter brown soil, munsell designation 10YR/2/2. The light brown was noted to be the more prominent of the two and the orange noted as inclusions. The opening elevations were taken at the center of the unit (14.9 cm), the center of the eastern wall (9.2 cm), and the southeastern corner of the unit (8 cm). As a result of the large amount of inclusions within this context trowelling was employed as the primary method of excavation, with brushes being used near the two features. The intrusion in this context ranged from small rocks and disarticulated tiles to large stones and pieces of mortar. The primary artifacts found in this context consisted of two types of 2.2 x 2.2 cm square white tile (see Table 4 for a complete artifact list). A smoother more marble like tile with a grey tint, and a chalky tile that was whiter in color (for further information on these differing types of tile see Jenneth Igbokwe

Intact tile and hole in southeastern corner

and Alicia Hernandez artifact biographies in this volume). While the chalky tile had previously been found in context 67 this was the first appearance of the second type of tile. A large number of tiles placed intact into mortar were found in this context as well, the initial discoveries were found face up at a much higher elevation than those found later in the unit,

Above: Intact tile found in hole of southeastern corner

Left: feature 2 and feature 4 during excavation of context 72; Facing north

whose size was larger and were found laying face down in various sections of the context. The southeastern area of this context proved to be particularly difficult as various holes appeared during the excavation process. Initially a small hole was found near the southern corner of feature 2, but this soon expanded and covered almost the entire southeastern portion of JBH 72. Upon excavating these holes a distinct brightly green colored mold appeared, of which samples were taken for further analysis. In addition to the mold and various tiled mortar pieces it was also noted that there was what appeared to be a downfall on the western portion of feature 2 into JBH 72. The downfall primarily consisted of stones and mortar with a few brick pieces. The TPQ date for this context

was determined by a dark blue transfer print porcelain to be 1820. The dating of the other artifacts and the TPQ date for context 67 suggest that the soil was deposited earlier and this may indicate a disturbance in the deposition pattern. Context 72 was the closing context of this season's fieldwork due to weather and time constraints.

JBH Context 72: Items	Number	Date Range
Chalky White Tile[0]	194	
Smooth Grey/White Tile	106	
Mortar Pieces	40	
Iron Nails	22	
Ridged Orange Brick Pieces	12	
Maroon Brick Pieces	6	
Plain Creamware	6	1762-1820[1]
Charcoal Pieces	6	
Large Pieces of Intact Mortared Tile	6	
Opaque White Glass "Milk Glass" Pieces	3	19th Century-Present[2]
Dark Blue Transfer Print Porcelain	1	1820-1860[3]
Clear Glass- Green Tint	1	
Imari Porcelain	1	1700-1780[4]
Shell	1	
Flat Metal Piece	1	
Metal Pipe[5]	1	

JBH Context 72: Items	Number	Date Range
Near Complete Orange Ridged Brick	1	
Semicircular Metal Piece	1	

Table 4 Artifact List and Dating Context 72

For further information see Jenneth Igbokwe object biography

1,3,4:Florida Museum of Natural History; Ceramic ID guide

2: The Parks Canada Glass Glossary

5 For further information see Alicia Hernandez object biography this volume

Analysis

The features, soil deposition, and artifacts found in Unit 11 provoked many questions from excavators as to the purpose of the features. The discovery of feature 4 was not expected, and its relationship to feature 2 both narrows and expands the possibilities for identification. The walls are 50-70 cm apart at any given point between them. This distance indicates that the purpose of the walls was not structural. The distance is too great for the features to be the inner and outer portions of a singular wall, and the distance is too small for the features to be of structural significance. The length of the features, which has yet to be determined as they extend beyond the boundaries of the Unit and are not located on any geophysical map, far exceeds their width. If these features were to have been structurally used the structure would have been quite narrow and long, similar to that of a corridor, which seems highly unlikely. The rejection of a structural identification leads to possibilities of drain, other plumbing works, or walkways. These various hypothesis were made in the field by excavators, but upon further analysis they are also problematic. The suggestion that this was used to demarcate or encase plumbing or drainage from the John Brown House

Unit 11 at closing; Facing West

initially seems likely as the location is consistent with a drainage location on the western most portion of the yard away form the house; however, the direction of the walls is parallel to the John Brown house. If the walls were used for drainage purposes then their orientation should be perpendicular to the house itself as the flow of drainage runs from east to west down college hill, not north to south as the features do. This also seems unlikely as there was no artifacts to indicate drainage or plumbing equipment was previously located here save a small portion of a pipe found in context 72.

The suggestion of a walkway that extends across the yard seems consistent with historical sources as suggested by Ben Colburn (2009 JBH Archaeological report p. 72). Though the sources give no further information on the walkway except to designate it as a "paved path." The position of features would indicate that the path ran along the edge of the property, which though plausible seems unlikely as this is the location of a fairly busy street. This hypothesis is also further complicated by the depth of the walls. The walls seem to be too high to have been a paved path unless they were a taller paved wall that may have extended out of the ground. Even accounting for the height of a trench that is necessary to place a wall the walls would have extended out of the ground creating a path that wold have appeared to be an enclosure rather than a leisurely path across the yard as sources have indicated. There is no geophysical map or historical sources that support of deny any of the hypothesis proposed by excavator of the 2009 or the 2010 field season.

The artifacts and soil deposition of context 72 further complicate these hypothesis. The location and placement of the mortared tile pieces initially indicated that they could potentially be the floor of the 'structure,' but the unearthing of further and larger mortared tile pieces

rejected this assumption. The later sections of mortared tile were found face down in the north and southeastern corner of the context. The large amount of mortar attached to the tiles indicate they they were used as flooring as they would have been too large and heavy to be used for any other surface. While their composition indicates flooring their face down positioning rejects that this was the flooring used between feature 2 and feature 4. These added to the inconsistencies of the TPQ dates indicate that the soil and artifacts of context 72 were used as fill.

At the close of the 2010 field season we were unable to answer the questions we had originally anticipated finding the answers too, though we were able to provide new information. The exposure of the second wall narrows the possibilities of what could have previously stood in this location in the yard, while the TPQ dates and artifacts provoke further questions. It is clear that further excavation needs to be undertaken to determine the exact purpose of these features and their link to the John Brown House. The area that seems to be provide the most information is the southeastern corner of the unit as well as context 72. The areas to the east and west of the walls do not produce the amount of artifacts or questions that the area between the walls does. In order to determine the purpose of these features future excavation should be undertaken to the south of Unit 11.

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Unit 12 - Excavation Summary
Brandon Delmore Tomasso

On September 20, 2010, excavators began work on Unit 12 during the 2010 field season. Unit 12 is located in the Southeast portion of the John Brown House (JBH) lawn. It is approximately halfway between the house and Benefit Street, toward the Power Street side of the lawn. Measuring two by two meters, this unit marks the first time excavators have broken dirt at this location in the yard.

Figure 1: Aerial view of the JBH property and unit locations for the 2010 field season. Unit 12 is located in the southwest corner of the lawn. GIS mapping prepared by Jessica Nowlin and Max Mankin.

Drawing from historical evidence as well as geophysical surveys, excavators sought to excavate Unit 12 in order to explore two features on the JBH property. Excavators began work on Unit 12 in efforts to shed light upon the site's drainage system as well as any lingering evidence pertaining to the large fountain that once adorned the lawn.

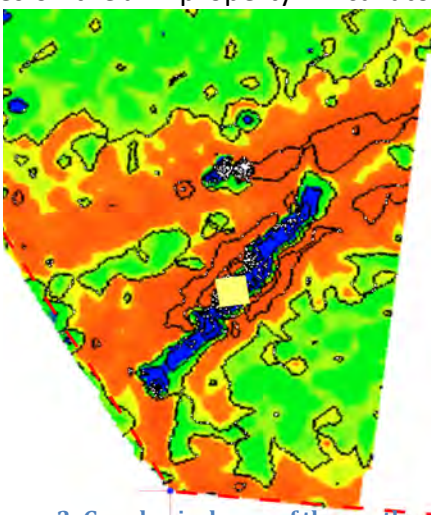

Figure 2: Geophysical map of the southwest corner of the lawn. Unit 12 is located at the yellow marker. Notice the blue feature upon which Unit 12 falls as well as the dark blue feature due north of Unit 12. GIS mapping prepared by Jessica Nowlin and Max Mankin.

According to the geophysical surveys conducted during previous field seasons, a relatively deep feature ran north to west through the southeastern section of the site. A surface survey conducted prior to selecting units for the 2010 field season also revealed a

drainage system at the peak of the southeast slope of the lawn, close to the wall separating the house from the yard.

Furthermore, a historical aerial photograph taken in 1949 featured the large white, circular fountain in the same section of the lawn. Looking back at the geophysical map, 2010 excavators noted possible evidence of a feature in the same portion of the lawn where the fountain stood in the photograph. The size of this geophysical anomaly also seemed proportional to the size of the fountain, as reflected in the photograph, but this was purely conjectural. The possible correlation of the fountain to the features noted in the geophysical survey particularly piqued excavators' curiosity.

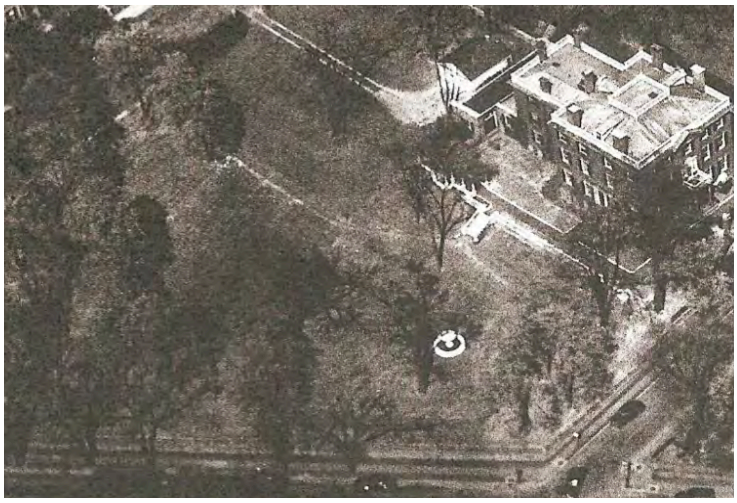

Figure 3: ***Avery Lord of Providence, 1949***
Aerial Photograph of the JBH. A fountain is located in the southwestern portion of the yard.

Excavators chose to place Unit 12 in a relatively flat area in the lawn that seemed to coincide with the possible locations of both the fountain and the drainage system.

Excavation Methods:

Excavators of Unit 12 included Brandon Tomasso '13, Olivia Petrocco '13, Max Mankin '11 and Cindy Oh '13, under teaching assistant, Jessica Nowlin and site director, Krysta Ryzewski.

Prior to breaking ground, excavators plotted the two by two meter unit so it formed a perfect square and aligned with directional coordinates. Orange flagging tape marked the unit's

boundaries on all four sides. Excavators then established a unit datum point on the Northeast corner of the unit. The unit datum point was the highest point of elevation for the unit, and would serve as a frame of reference for the elevation measurements taken at each stratigraphic layer throughout the excavation.

Methods consisted of a preliminary surface survey, shovel shaving for all contexts, trowelling (only for JBH 69), careful record keeping and phase-by-phase photography. Excavators bucketed all shoveled dirt and carefully sieved it through one-fourth wire mesh screens. Excavators bagged all artifacts collected in Ziploc bags for later analysis and interpretation in the laboratory at the conclusion of the field season. Note, out of prudence, excavators decided to define artifacts liberally as items captured by the screen, possibly classifiable as items of human manufacture or usage. Therefore, excavators even bagged rocks if they bore any resemblance to artifacts. Excavators opted for this practice in order to confirm the identification of such items accurately in the lab once they were clean, rather than risk a false negative identification. Excavators recorded notes and measurements on Excavation Forms.

Figure 4: Excavators beginning work on JBH 64. From left to right: Brandon Tomasso, Olivia Petrocco, Max Mankin and Cindy Oh.

Figure 5: Excavators sharing the Unit's progress with a Brown Daily Herald Reporter.

These forms are now on file at the Joukowsky Institute; one for each context. Excavators took more general notes individually as well. These notes are reflected in the weekly "Field Blog" entries featured on the excavation's Wiki-page. Periodically, excavators also recorded video updates of the unit's progress.

Stratigraphy:

The 2010 field season worked through two contexts in Unit 12. JBH 64 represented the topsoil context, while JBH69 marked the context from the point at which excavators noted a soil change to the glacial till layer at the bottom of the unit. Excavators based context changes on perceptible soil changes.

Context JBH 64:

Figure 4: Surface photograph of Unit 12 prior to breaking ground.

Preliminary surface survey of Unit 12 revealed potential insight pertaining to contemporary usage of the site for beer drinking activities. Excavators noticed a Bud-Light Lime cap, a mouse head, a long gray feather and a piece of some sort of food/candy wrapper. Excavators disposed of the mouse head, but collected the rest of the items for study. They also noted the moist, rich soil condition and patches of uneven grass deposits.

Opening, Surface Level Elevation Measurements are as follows:

Corner	Elevation Below Datum Point
Northeast corner (Datum Point)	0 cm
Northwestern corner	15.5 cm
Southwestern corner	21 cm
Southeastern corner	3.5 cm
Center	12 cm

As the excavation of JBH 64 pressed onward, it soon became evident that tree roots would be the greatest hindrance to excavation. The soil was a dark brown, almost black, and indicated a Munsell value of 10 YR 2/1. While the soil quality made it relatively easy to sieve, the roots forced excavators to stop shovel shaving continually and remove the roots that were tangled throughout the unit. It is important to sift carefully through the roots themselves, so as to ensure no material remains are entangled within them. For this reason, the roots slowed the process.

Figure 5: Porcelain, pearlware and whiteware uncovered in JBH 64.

Finds from this context varied widely both typologically as well as temporally. The following is a comprehensive list of finds from JBH 64:

Artifact	**Number of Pieces**	**Date Range of Manufacture*** - (if applicable)
Creamware	(presence)	1762 – 1820
Pearlware	(presence)	1770 – 1840
Whiteware	(presence)	1830 – present
Stoneware	(presence)	1720 – 1770
Porcelain	(presence)	1830 – 1900
Coal	27	
Cigarette Filter	5	
Mortar	1	
Iron Nail	13	
Slag	5	

Circular Iron piece (perhaps a grommet?)	1	
Bottle Caps	2	
Plastic Wrapper	4	
Rigid Plastic	3	
Rubber	2	
Walnut Shell	1	

*Dates ranges cited from the Florida Museum of Natural History's Historical Archaeology Index

The TPQ for JBH 64 is 2008, judging from the Bud Light Lime bottle cap, which is the context's most recent diagnostic artifact. According to the Bud Light Lime fact sheet made available online by Budweiser, the company introduced the beer in 2008 and production continues today (Anheuser-Busch Companies, Inc).

By the middle of the third week of work in Unit 12, excavators reached a new context. The soil became increasingly claylike, soft and mottled.

Context JBH 69:

Figure 6: The beginning of JBH 69.

Excavation in JBH 69 commenced on October 18, 2010. Original perceptions of the mottled, claylike soil held as excavation progressed for JBH 69; however, the soil grew progressively dryer and sandier. The new context also grew rockier, although slightly less entrained by roots. Overall, soil quality remained optimal for sieving. Excavators saw little change in this regard. The soil in JBH 69 exhibited a Munsell value of 10 YR 3/1.

Beginning of JBH 69- Elevation Measurements are as follows:

Corner	Elevation Below Datum Point
Northeast corner (Datum Point)	14 cm
Northwestern corner	25 cm
Southwestern corner	37.5 cm
Southeastern corner	17 cm
Center	32.2 cm

Not far into the context, excavators encountered two seemingly endless patches of a vividly turquoise-colored, gravel-like substance that appeared to be fertilizer of some sort. One was situated in the Northwest corner, the other was slightly west of the center of the unit. Soil around these patches was very rich. Mortar was most commonly found near or within these patches, although the mortar was still prevalent throughout the unit.

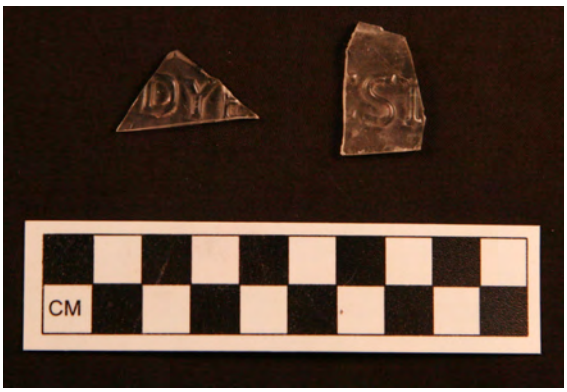

Figure 7: Glass fragments found in JBH 69.

During the second week working in JBH 69, on October 25, excavators struck a pipe to the yard's sprinkler system in the southern portion of the unit. The pipe runs east to west. According to Krysta, when the sprinklers were installed, the company shot the pipes straight into the ground from the bottom of the hill at the end of the yard (Ryzewski, personal correspondence). As such, this high-powered system gravely disturbed the context of our site. This may explain why excavators found more dated finds quite early in the excavation within the upper portions of the unit. For example, excavators uncovered pearl earthenware, dating to the eighteenth to early nineteenth century, only a centimeter or two from the surface in JBH 64. Thus, the geological disturbance makes it difficult to date artifacts reliably in correlation to each other.

Figure 10: The pipe passing through the southern portion of the unit.

Figure 11: Excavators marked off the southern portion of the unit in order to avoid the pipe.

In order to avoid damaging the sprinkler system in any way, excavators decided to pedestal the pipe and cease work in the southern portion of the unit. Excavators took elevation measures and flagged off the area in which the pipe was contained.

Discovery of Sprinkler Pipe- Elevation Measurements are as follows:

Corner	Elevation Below Datum Point
Northeast corner (Datum Point)	22 cm
Northwestern corner	37 cm
Southwestern corner	40 cm
Southeastern corner	24.5 cm
Center	30 cm

Work in JBH 69 pressed onward without excavating the southern portion of the unit around the pipe. The majority of finds from Unit 12 came from JBH 69. Primarily, excavators uncovered ceramics dating from the seventeenth century to the nineteenth century, undiagnostic building material, and an abundance of glass fragments and coal within this context. Ceramics varied greatly in design, including red, black, blue and green.

Figure 8: Fragments of a tobacco pipe from JBH 69.

The following is a comprehensive list of finds from JBH 69:

Artifact	Number of Pieces	Date Range of Manufacture* - (if applicable)
Creamware	85	1762 – 1820
Pearlware	16	1770 – 1840
Whiteware	38	1830 – present
Stoneware	6	1720 – 1770
Porcelain	54	1830 – 1900
Tobacco Pipe	3	1680 - 1720

Rubber	1	
Curved Glass	40	
Flat Glass	60	
Coal	122	
Brick	80	
Architectural Iron	4	
Nail Iron	47	
Slag	4	
Bone	10	

*Dates ranges cited from the Florida Museum of Natural History's Historical Archaeology Index

The TPQ for JBH 69 cannot yet be determined. Judging from the porcelain, which could potentially be the context's most recent diagnostic artifact, the TPQ could be as late as 1900. More work must be done, however, to identify and date all of the porcelain in order to see if 1900 is a plausible TPQ. It is very possible none of the porcelain samples uncovered in JBH 69 date to this time, in which case, the TPQ would be earlier than 1900.

By the end of the field season, excavators began to reach the end of JBH 69. The emergence of yellow claylike sand signaled the onset of the Pleistocene glacial till layer. From this layer forward, human activity of interest to excavators at the John Brown House is not available.

Prior to this point, however, a chilling Rhode Island rainstorm posed a great test to the excavators as they completed their final day of excavation. During sieving, because of the thickness of the mud that had caked onto the screen, nothing could flow through the mesh, and excavators could not differentiate between artifacts, rocks and clumps of mud well enough to continue sieving.

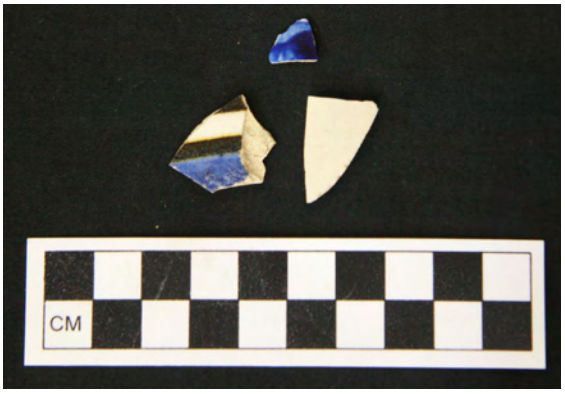

Figure 9: Whiteware, pearlware and stoneware uncovered in JBH 69.

Eventually, site director, Krysta advised the crew to discontinue screening; instead attempting to pick up anything they could find by trowelling. As such, excavators quickly trowelled through the remaining portion of JBH 69. Excavators worked diligently to "salvage" whatever they could before losing the opportunity to work further on the unit. Unfortunately, hardly anything turned up after reaching the layer of Pleistocene glacial till; thereby indicating they had gotten through the majority of JBH 69.

End of JBH 69- Elevation Measurements are as follows:

Corner	Elevation Below Datum Point
Northeast corner (Datum Point)	51 cm
Northwestern corner	56.5 cm
Southwestern corner	42 cm
Southeastern corner	30 cm
Center	60 cm
Outside northwestern corner of pedestal	57 cm
Outside northeastern corner of	49.5 cm

pedestal

Analysis and Interpretations:

Despite excavators' hopes of finding evidence of the fountain and unlocking the secrets of the irrigation system at the John Brown House, they were unsuccessful. The excavation did, however, provide a frame of reference for the possible location of the fountain as well as the historic irrigation channels.

Upon reviewing the 2010 geophysical map of the John Brown House property, it is evident that Unit 12 falls directly above a long feature running southwest to northeast, across the southern portion of the lawn. This feature, marked in blue on the map, extends just short of the street, almost to the wall closest to the house. In addition, Unit 12 and the 'blue' geophysical feature fall within a pair of larger geophysical features marked by a red-orange color on the map. Like the 'blue' feature, these two strips of features run southwest to northeast, across the southern portion of the lawn, but they are angled differently. Comparing the angle of the 'orange' features on the map to the direction in which the sprinkler pipe found in Unit 12 extends, they seem as though they could possibly be correlated. It is possible that the 'orange' feature on the map represents the sprinkler pipe and the rest of the sprinkler system.

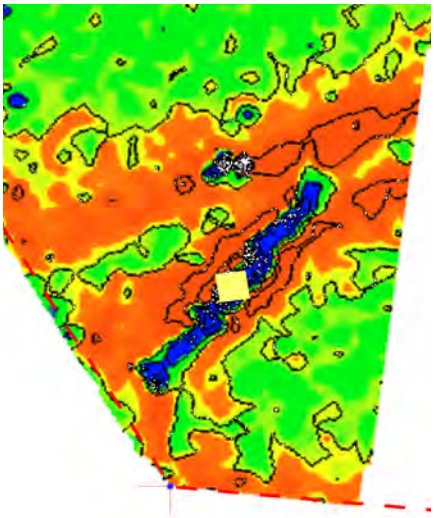

Figure 10: Geophysical map of the southwest corner of the lawn. Unit 12 is located at the yellow marker. GIS mapping prepared by Jessica Nowlin and Max Mankin.

Further review of the 2010 geophysical map reveals a small, dark blue splotch just north of Unit 12 and the feature upon which it was excavated. This feature also falls within the northernmost 'orange' feature. When comparing the historical photo of the fountain to this feature on the geophysical map, it seems likely that their positions coincide. If so, this feature could represent the point at which the fountain once stood and could bear evidence as to how the fountain was installed, how it was removed, what it was made of and how it obtained its water supply. Should this be the case, Unit 12 narrowly missed the feature its excavators originally sought to uncover.

Given the nature of the Unit's composition, it is seems as though the artifacts were not in their original depositional context. The evidence of the modern sprinkler system and the loose, mottled soil; as well as the broad range of dates for the finds within each context, seems to

indicate redeposition and consequently a disrupted context. Had the contexts been undisturbed, excavators would have likely seen distinct depositional contexts marked by artifacts with closer, less varied date ranges (for example, perhaps a context comprised of a layer of artifacts dated more closely, between the seventeenth and mid-eighteenth centuries). As a result, it is difficult to date undiagnostic finds or offer a cogent interpretation as to how the site was used on the property or how the artifacts may have been deposited there.

In addition, the disrupted context evinces that the landscape was likely modified by human activity. The soil may have been moved here from another part of the lawn or dug up and

redeposited in the same spot. One possible explanation is that in efforts to ameliorate drainage problems, the landscape may have been graded. Such a technique would involve the movement of soil throughout the yard in such a way that the surface of the land could be raised and limit flooding. These qualities of the soil also seem to demonstrate that this portion of the lawn, at least since redeposition, was not a high traffic area for the inhabitants of the John Brown House. Had this area been used more heavily, the soil would have been much more compact and dense from people walking upon the land. Frequent use seems rather unlikely since the unit is located a fair distance from the house, almost to the street. Also, judging from the historical maps, no auxiliary structures existed in this area of the yard to which people may have ventured and been utilizing the land.

Thus, with the close of the 2010 field season at the John Brown House, Unit 12 has launched a new wave of inquiry for the project. In landing upon a geophysical anomaly as well as falling just short of another anomaly, future excavators have multiple options for further research. By continuing work along the 'blue' geophysical feature in relation to Unit 12, excavations can have a closer look at what could be an eighteenth or nineteenth century irrigation system. Alternatively, by venturing to position a subsequent unit directly north of Unit 12, future researchers would have the possibility of uncovering the 'dark blue' feature that could have resulted from the removal of the fountain. Either way, future

excavations now have a strong foundation upon which they can broaden the project's research goals and pursue yet another element of the history of the John Brown House.

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Note: All artifact photos and excavation photos courtesy of Krysta Ryzewski and Jessica Nowlin.

Site-Wide Stratigraphic Analysis at the John Brown House

Nick Bartos

Introduction

Stratigraphic analysis is an essential component to any archaeological study. In general, the term "stratigraphy" refers to the layering of rock or soil within an archaeological project, with a specific stratum defined as a layer with internally consistent and distinguishing characteristics. Identifying the physical nature and spatial disposition of each stratigraphic layer allows archaeologists to get better descriptions of site features and to better catalogue the context of deposition and sequence of development of any artifacts.[1] The creation of a site-wide stratigraphy, the comparison of stratigraphy across all excavation units in a site, allows for a greater understanding of general land use and the connections between artifacts from different areas. The site-wide stratigraphy is also important in reducing the fragmentation of a site, a process which can further decontextualize finds from their larger surroundings.[2]

This report deals specifically with the stratigraphy of the John Brown House (JBH) excavations. Part I describes both the methods used for determining individual strata and the stratigraphic relationships within the three 2010 units: Unit 10, 11, and 12. Part II then attempts to connect Unit 7 from 2009 with its 2010 extension, Unit 11. In order to determine greater site-wide trends, Part III compares strata across the three 2010 units, and Part IV integrates the 2010 results with those from 2008 and 2009.

However, because stratigraphy also plays a large role in determining the actual definition of an archaeological site, this report further discusses whether or not it is appropriate to designate the JBH excavations as only one site. In general, it is essential to remember that "the recognition and delimitation of a site is an act of interpretation, not observation."[3] There has been a substantial amount of debate on this issue, and some archaeologists have even abandoned the notion entirely, conducting siteless surveys.[4] Other archaeologists, however, have suggested only broad definitions that do not

[1] Roskams, Steve. 2001. *Excavation*. Cambridge: Cambridge University Press. Print.

[2] A) Jones, Andrew. 2002. "Archaeology Observed." *Archaeology Theory and Scientific Practice*. Cambridge: Cambridge University Press. 39-62.

B) Lucas, Gavin. 2001. "Chapter 3, 'Splitting Objects,' " In *Critical Approaches to Fieldwork*. Routledge: London, 64-106.

[3] Cherry, J.F. 1984. "Common Sense in Mediterranean Archaeology?" *Journal of Field Archaeology* 11: 119.

[4] Dunnell, R. and Dancey, W. 1983. "The Siteless Survey: A Regional Scale Data Collection Strategy." In M. Schiffer (ed.) *Advances in Archaeological Method and Theory* 6: 267-87.

specify a site as anything beyond a place where traces of human activity or culture can be found.[5] In looking at the stratigraphy, this report suggests a more formalized approach. Building off the definitions of Gallent (1986) and Cavanagh *et al.* (1988), here both artifact quantity and soil composition are considered.[6] Thus, according to this standard, a site must demonstrate not only inhabitance, but also comparable stratigraphy across all its units. The goals of this report are therefore both to describe the site-wide stratigraphy and to better define the JBH excavations as a whole.

Part I. 2010 Stratigraphy

The 2010 JBH excavators delimitated new contexts as they worked. New contexts were declared only when a change in soil consistency or Munsell value was detected. The characteristics, elevation, and horizontal spread of new contexts were then recorded. This approach differed from the 2008 and 2009 excavations during which excavators declared arbitrary contexts every 10 cm.[7] This section of the report places the 2010 contexts into their appropriate strata on a unit by unit basis.[8]

Unit 10

Figure 1. Unit 10, JBH 68. Note the light orange sandy soil in the upper left.

[5] Gallant. T. 1986. " 'Background Noise' and Site Definition: A Contribution to Survey Methodology." *Journal of Field Archaeology* 13: 408.

[6] A) Ibid. 403-418.
B) Cavanagh, W., Hirst, S. and Litton, C. 1988. "Soil Phosphates, Site Boundaries and Change Point Analysis." *Journal of Field Archaeology* 15: 67-83.

[7] A) Combs, J. 2008. "Stratigraphic Analysis of the John Brown House Units." John Brown House Site Report. 42-65.
B) Baker, S. 2009. "Site-wide Stratigraphy Report." John Brown House Site Report. 26-46.

[8] Also see: A) Leddy, L. 2010. "Unit 10 Excavation Report." John Brown House Site Report. X-X.
B) Hernandez, A. 2010. "Unit 11 Excavation Report." John Brown House Site Report. X-X.
C)Tomasso, B. "2010. "Unit 12 Excavation Report." John Brown House Site Report. X-X.

Strata	*Context*	*Munsell Value*	*Soil Description*
Stratum 1-2010	JBH 65	10 YR/2/1	Loose, Dry, Sandy, Few Rocks
Stratum 2-2010	JBH 68	5 YR 4/6	Orange Areas, Clay, Rocky
Stratum 3-2010	JBH 73	10 YR/2/2	Non-Sandy, Bricks, Mortar, Iron Pieces

Table 1. Unit 10 Stratigraphy and Descriptions.

The Unit 10 excavation yielded a total of three contexts. After clearing the initial surface vegetation, the Unit 10 team reached its first context, JBH 65. The context was wide-spread throughout the entire unit and consisted of silty, sandy, and dry soil with a Munsell value of 10 YR 2/2. JBH 65 became slightly rockier until a depth of about 10 centimeters, when JBH 68 appeared. JBH 68 consisted of a spotted mix of mottled light brown sandy soil (10 YR 2/2) and light orange soil (5 YR 4/6). The context spread across the entire unit and also contained many pebbles, large rocks, and pieces of mortar. JBH 68 reached a depth of roughly 26 centimeters (the end of excavation). However, at a depth of 7 centimeters, JBH 68 was interrupted by JBH 73 in the northeast corner of the unit. JBH 73 consisted of non-sandy soil with a Munsell value of 10 YR 2/2. It was designated a separate context from JBH 68 because it contained a large concentration of bricks, mortar, big rocks, and iron pieces. As Table 1 demonstrates, each of the three contexts consists of a unique stratum. While JBH 68 and JBH 73 do overlap in elevation, the soil consistency and presence of architectural remains suggest that JBH 73 is a separate layer.

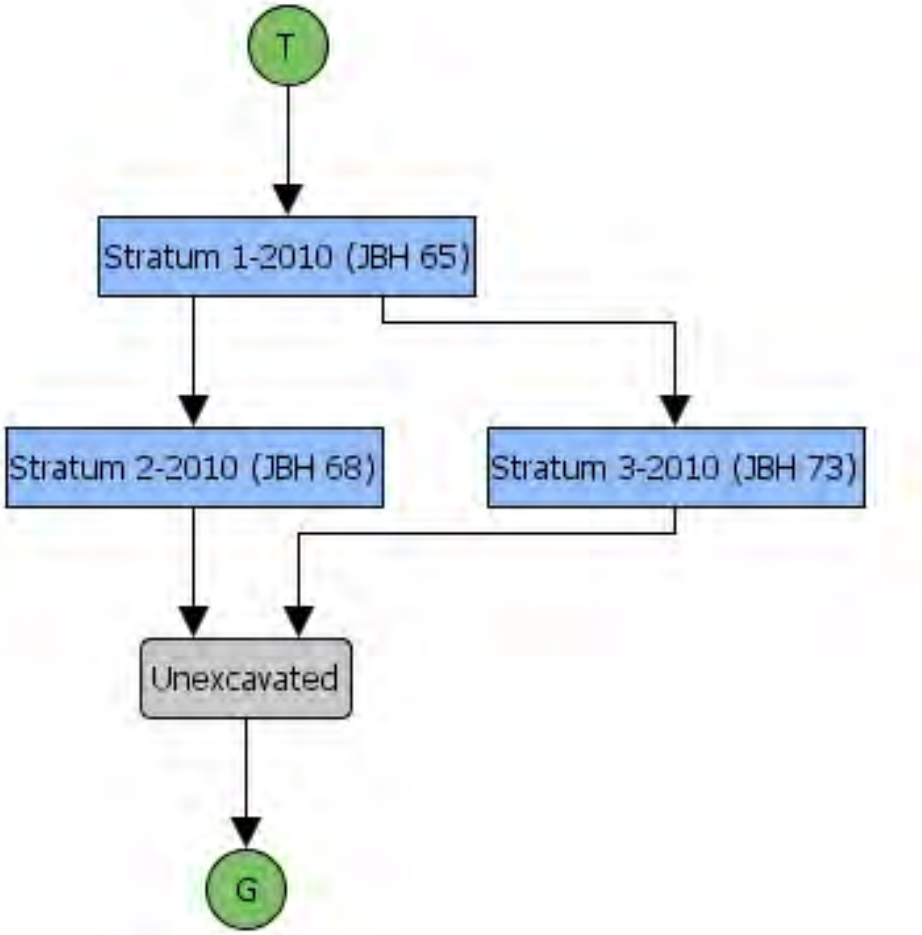

Figure 2. Harris Matrix Unit 10.

Unit 11

Figure 4. Unit 11, JBH 70. Note the few rocks and well-packed soil.

Figure 5. Unit 11, JBH 72. Note how rocky and loose the soil is compared to JBH 70.

Strata	*Context*	*Munsell Value*	*Soil Description*

Stratum 4-2010	JBH 66	10 YR/2/1	Loose, Dry, Sandy, Few Rocks
Stratum 5-2010	JBH 67	2.5 Y/ 2.5/ 1	Thin, Sandy, Gravel
Stratum 6-2010	JBH 70	5Y/ 2.5/ 1	Packed, No Large Rocks
Stratum 7-2010	JBH 71/ Feature 4	Rock Wall	Brick, Mortar, Slate
Stratum 8-2010	JBH 72	10 YR/2/2	Very Loose, Large Rocks, Sandy

Table 2. Unit 11 Stratigraphy and Descriptions.

Unit 11 yielded the most contexts out of any of the three 2010 units. The first context beneath the 2 centimeters of vegetation and rocks was JBH 66. This context was prevalent throughout the whole unit and contained fine, slightly rocky soil with a Munsell value of 10 YR 2/2. At a depth of only 3 centimeters, the Unit 11 excavators reached JBH 67, a widespread gravel layer with sandy soil and a Munsell value of 2.5 Y/ 2.5/ 1 in some areas and 10 YR/ 2/ 2 in other areas. As the team continued to dig JBH 67, larger rocks appeared concentrated in the middle of the unit. Eventually, the team discovered a north-south line of smooth rocks towards the middle of the unit. Further analysis indicated that this was indeed a wall and that the soil composition was different on both the west and east side of the wall. Therefore, at a depth of roughly 4 centimeters in JBH 67, the brick, mortar, and slate wall was labeled JBH 71/ Feature 4, while the soil on the west side became JBH 70 and the soil on the east side become JBH 72. JBH 70 consisted of a well-packed soil with very few rocks and a Munsell value of 5Y/ 2.5/1. In contrast, JBH 72 was very loosely packed with many large rocks, tiles, and mortar. JBH 72 (10 YR/ 2/2) was also very sandy and contained a number of holes towards the southern edge of the unit. The limits of JBH 70, 71, and 72 remain unknown as excavators did not reach the end of the contexts before the termination of the 2010 season. Because of their unique soil consistencies and Munsell values, each context is a separate stratum. Also, it is reasonable to assume based on the wall's position (JBH 71/ Feature 4) between JBH 70 and JBH 72, that it is oldest of the three.

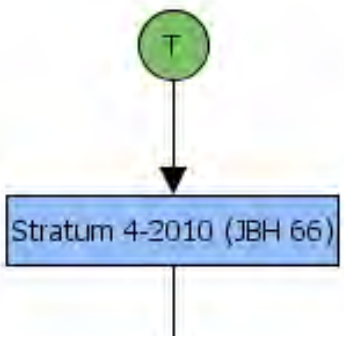

Figure 6. Harris Matrix Unit 11.

Unit 12

Figure 7. Unit 12, JBH 69. Note that JBH 69 is very clayish and condensed.

Strata	*Context*	*Munsell Value*	*Soil Description*
Stratum 9-2010	JBH 64	10 YR/2/1	Loose, Dry, Sandy, Few Rocks
Stratum 10-2010	JBH 69	10 YR/ 3/1	Clay, Packed, Rocky

Table 3. Unit 12 Stratigraphy and Descriptions.

Unit 12 had the least amount of contexts of the three units. The first context, JBH 64, was a loose, rich soil (10 YR 2/1) with a small concentration of a dry, sandy soil in the northwest corner of the unit. JBH 64 was widespread throughout the unit and had very few rocks. The Unit 12 team then encountered a more condensed, clayish layer. Once this layer was obviously consistent throughout the unit, it became JBH 69 (10 YR/3/1). Excavations in the southern half of JBH 69 were halted due to the emergence of a modern sprinkler pipe. JBH 69 was significantly rockier than JBH 64, even yielding small pieces of marble. Like Unit 10 and 11, the two contexts in Unit 12 are individual strata. While they have

very similar Munsell values, the soil in JBH 64 was very loose and had very few rocks in contrast to the packed, clayish, and rocky soil of JBH 69.

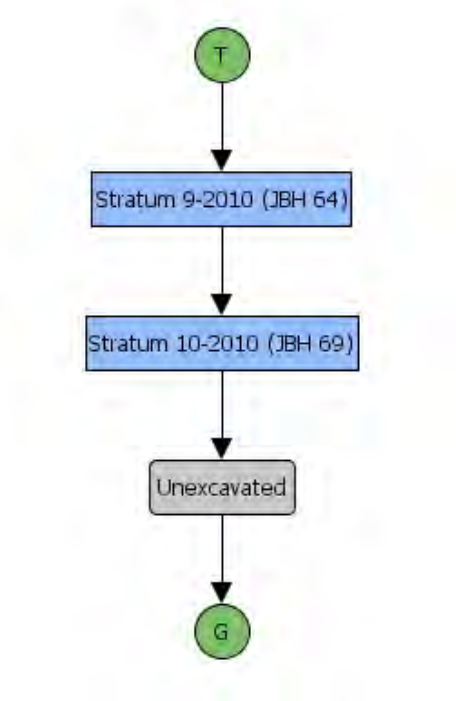

Figure 8. Harris Matrix Unit 12.

Part II. Stratigraphic Comparison of Unit 7 and Unit 11

Due to the unidentified feature found in Unit 7 during the 2009 season, the 2010 excavation team decided to open Unit 11 as a direct continuation in order to gain more insight. While the stratigraphy of Unit 7 has already been identified, it is essential to combine it with the stratigraphy of Unit 11 since the two directly touch each other.[9]

The primary layer for each unit, Stratum 5-2009 (JBH 45, 50, 56)[10] for Unit 7 and JBH 66 for Unit 11, are identical. Both have the same Munsell value (10 YR/2/2) and are described as fine, somewhat packed soil with only a few rocks. Therefore, Stratum 5-2009 and JBH 66 can both be considered part of Stratum 4-2010, a layer that spreads throughout the entirety of the two units. Additionally, after the emergence of wall (JBH 59/ Feature 2), the Unit 7 team indentified a gravel layer, JBH 51, on the west

[9] For more detail on Unit 7 stratigraphy see Baker, S. 2009. "Site-wide Stratigraphy Report." John Brown House Site Report. 30-1.
[10] JBH 45, 50, and 56 are all arbitrary 10 cm. contexts and have been identified as part of the same stratum. See Ibid.

side of the unit. JBH 51 has very similar characteristics to the second Unit 11 context, JBH 67. Both have a Munsell value of 10YR/2/2 (though other areas of Unit 11 also have a Munsell value of 2.5 Y/ 2.5/ 1) as well as very gravelly and sandy soil. While JBH 51 is only present on the west side of Unit 7, because this is the side that connects to Unit 11, it is logical to consider JBH 51 and JBH 67 part of the same stratum (Stratum 5-2010).

Deeper contexts of Unit 7 and Unit 11, however, are more complicated. In Unit 11, JBH 70 and 72 have distinct characteristics and Munsell values and are incomparable with anything from Unit 7. The two features, JBH 71/ Feature 4 in Unit 11 and JBH 59/ Feature 2 in Unit 7, are made of the same materials and appear on roughly the same elevation. Therefore, we can tentatively consider both part of Stratum 7-2010, though an exact relationship between the two walls has not been determined.

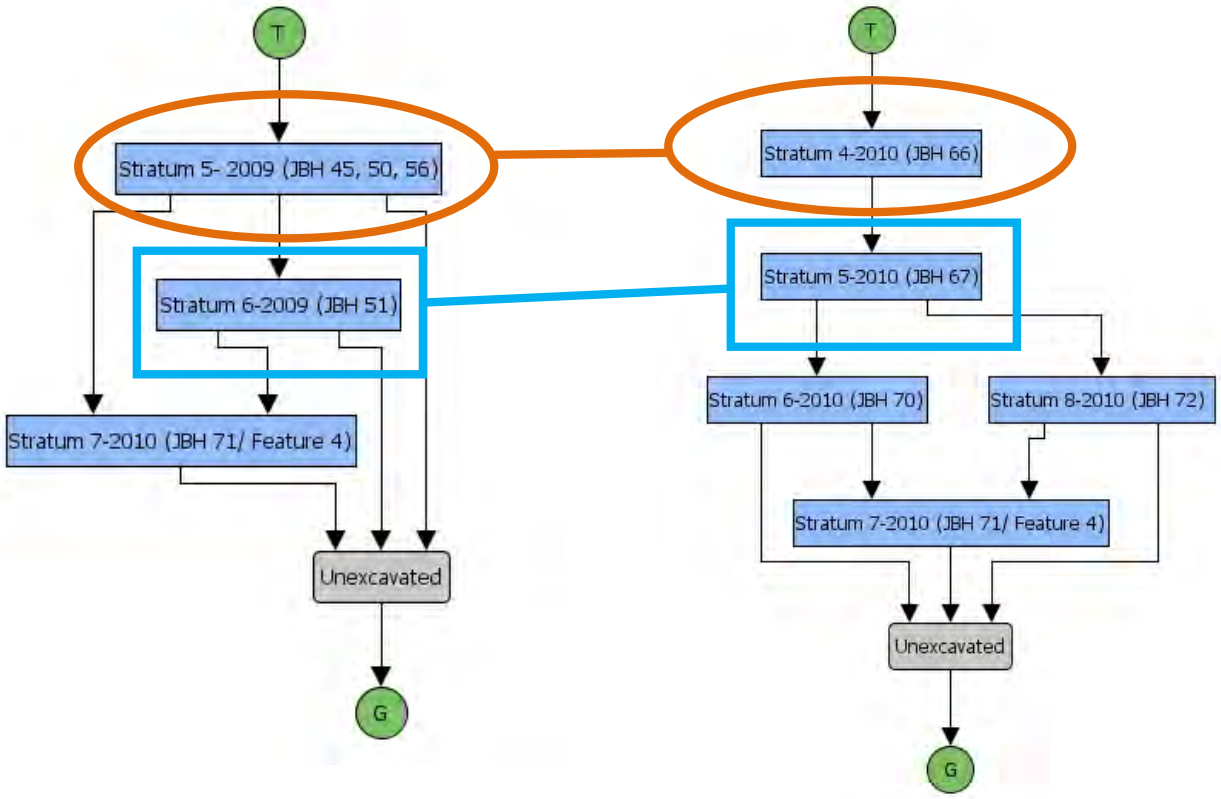

Figure 9. Comparison of Unit 7 Stratigraphy (left) with Unit 11 Stratigraphy (right).

Note: Orange circle indicates similar topsoil layer and blue rectangle indicates similar gravel layer.

Part III. 2010 Site-Wide Comparison

In order to gain a better understanding of the trends throughout the 2010 JBH excavations, it is important to compare the stratigraphy of all three units. This can be a relatively difficult process, as the

Unit 10, 11, and 12 excavations all had very different goals such as the location of the Hale-Ives House, the expansion of a previous unit, and the search for a lawn fountain. As such, the three units are located in vastly different areas of the property. Also, unit excavations were not done at the same pace and did not reach the same final depth. Therefore, while these stratigraphic comparisons are useful, because of geographic and other limitations, all conclusions must be considered tentative.

Nonetheless, the first layers in the three units are very similar. JBH 65 (Unit 10), JBH 66 (Unit 11), and JBH 64 (Unit 12) all have almost identical Munsell values. They are all also described as being sandy, dry, and somewhat loose. Finally, while the end depth of the three contexts does differ significantly, the starting elevations are virtually the same since they are primary contexts. As described by Mankin *et al.* (2010), the spatial z-coordinates of the corners of 2010 units allow for more precise comparisons, in this case further demonstrating similar starting elevations for JBH 65, 66, and 64.[11] However, due to the distance between the units, the three primary contexts for now must still be considered separate strata. Additional excavation is needed for a complete understanding of the extent of these similar contexts, though it is reasonable to conclude that JBH 65, 66, and 64 might all be part of more modern strata left after construction as a fill layer.

The only other layers that are even comparable within the 2010 units include JBH 67 (Unit 11) and JBH 69 (Unit 12). Both are widespread, sandy, and gravelly layers that consist of the second context within their respective units. However, JBH 69 is more clayish and condensed than JBH 67. The z-coordinates further indicate that the starting elevation of JBH 67 and 69 are distinctly different, with JBH 69 starting much deeper than JBH 67. These differences in soil consistency, elevation, and location, make the connection between the two contexts significantly weaker, and most likely, they are not part of the same stratum.

The overall trend for the other layers in Unit 10, 11, 12 is that they are almost entirely distinct in Munsell value, soil consistency, and starting elevation. JBH 68 and 73 (Unit 10) as well as JBH 70, 71, and 72 (Unit 11) bear no similarities to other contexts. Therefore, as a whole, the site-wide comparison of the three 2010 sites provides few discernable stratigraphic relationships. Aside from the correlations between the first contexts and the second contexts of Unit 11 and 12, the layering in the 2010 units is discrete. While this may simply be due to the diverse locations of the three units, it may also wider implications for the entire JBH excavations.[12]

[11] Mankin, M., Nowlin, J., and K. Ryzewski. 2010. "Geographic Information Systems at the John Brown House." John Brown House Site Report. X-X.
[12] See further discussion in "Conclusion."

Part IV. Integration of 2008 and 2009 Stratigraphy

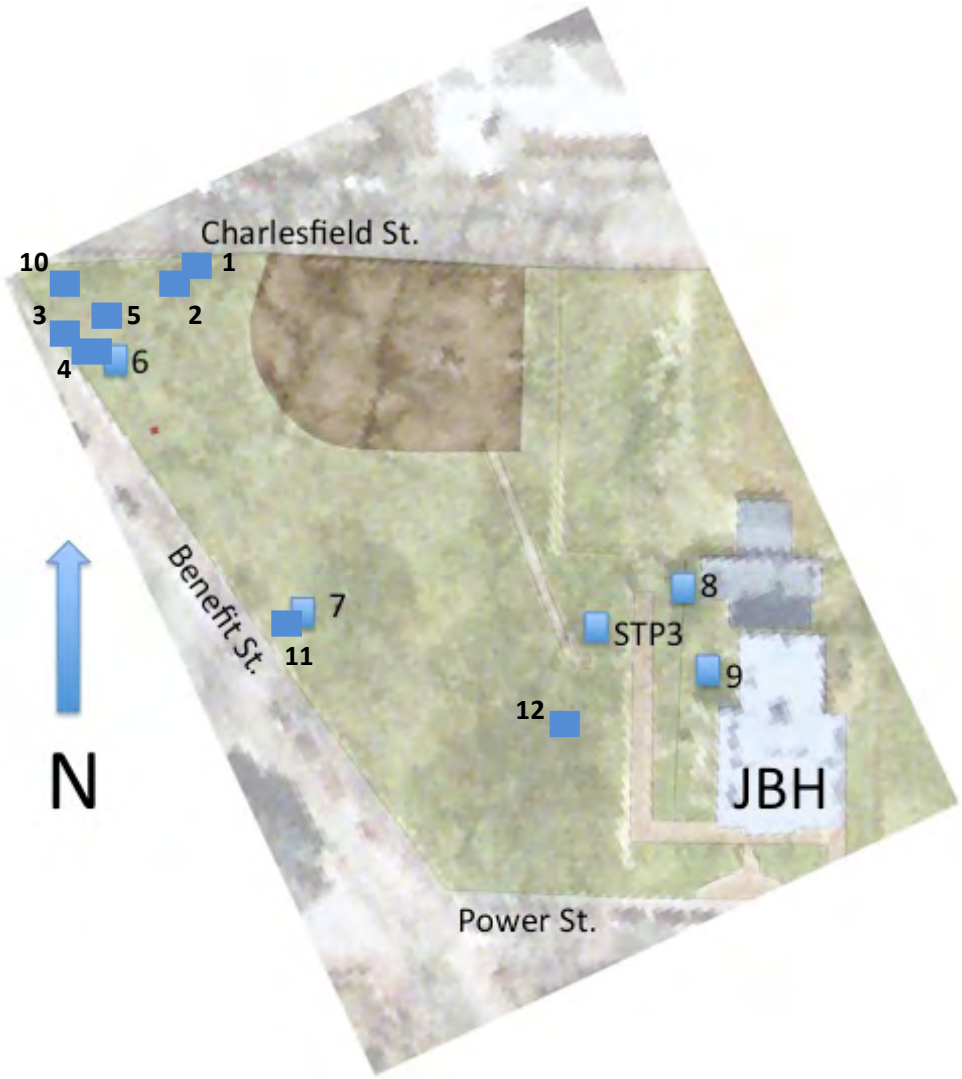

Figure 10. Map of All Units in John Brown House Excavation. Note that this map is just a rough guide and does not reflect the exact locations of the units.

A greater comparison of the stratigraphy across all units from the three excavation seasons is invaluable for identifying large trends in the entire John Brown House project. A full integration, however, has many complications since the units are located in diverse areas and were excavated at separate times by a variety of inexperienced students. Additionally, because of the amount of distinct contexts and strata in the twelve units, a complete integration of Harris Matrixes, Munsell values, soil consistencies, and elevations would produce a report so complicated and long that it would be of no use for future analysis. This section therefore compares the units on an area by area basis and integrates

the 2010 excavations with those from 2008 and 2009. This analysis yields important results: that there are distinct trends in both the northern and southern half of the JBH yard. Thus, the separation between the north and south units indicates stratigraphic trends as well as the possible redefinition of the JBH excavations as more than one distinct archaeological site.

Northern Area

The northern half of the yard in this case includes every unit with the exception of Unit 8, 9, and 12 (Unit 1, 2, 3, 4, 5, 6, 7, 10, 11). As described in the previous John Brown House Site Reports, a number of stratigraphic connections exist between units in the northeastern and northwestern corners of the yard.[13] In the northeastern area, Combs (2008) demonstrates the similarities between the first two strata in Unit 1 and 2. He describes Unit 1 and Unit 2 as potentially similar fill deposits after construction, maintenance, or the installation of more modern piping.[14] Unit 10 from the 2010 excavations is fairly close to these two units in the northeastern corner and has comparable stratigraphy. Stratum 1-2010 (JBH 66) in Unit 10 has the same Munsell value and soil consistency as the first two contexts in Unit 1 and 2. Also, Stratum 3-2010 (JBH 73) is a fill layer with architectural remnants such as brick, mortar, and iron that is similar to deeper contexts of Unit 1 and 2. While these layers can not necessarily be considered part of the same strata at this time, they nonetheless demonstrate a consistent relationship.

The rest of the northern units were placed along the northwestern wall bordering Benefit Street. Both Combs (2008) and Baker (2009) describe the connections between these units. Unit 4 shares a similar gravel layer with Unit 3, 5, 6, and 7. The topsoil strata for Unit 3, 4, 6, and 7 also have the same Munsell value and soil consistency.[15] It has been hypothesized that these connections exist because the units all lie on the same north-south feature; however, the most recent GIS survey suggests that the feature in Unit 7 is indeed separate.[16] Unit 11 from the 2010 excavations also has many similar strata to Unit 7, and by extension, Unit 3, 4, 5, and 6.[17] While the deeper strata of Unit 11 are unique, the top two strata, Stratum 4-2010 and Stratum 5-2010, are consistent with strata in most of the other

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[13] A) Combs, J. 2008. "Stratigraphic Analysis of the John Brown House Units." John Brown House Site Report. 42-65.
B) Baker, S. 2009. "Site-wide Stratigraphy Report." John Brown House Site Report. 26-46.
[14] A) Ibid. 58-64.
[15] A) Ibid. 42-65.
B) Ibid. 26-46.
[16] Mankin, M., Nowlin, J., and K. Ryzewski. 2010. "Geographic Information Systems at the John Brown House." John Brown House Site Report. X-X.
[17] See "Stratigraphic Comparison of Unit 7 and Unit 11."

northwestern units. Furthermore, while there are differences between the northeastern area of yard (Unit 1, 2, 10) and the northwestern area (Unit 3, 4, 5, 6, 7, 11), the Munsell values and soil consistencies are similar enough that they can still be considered in relation to each other. Thus, based on the 2008, 2009, and 2010 excavations, there are general stratigraphic trends which link the northern units together.

Southern Area

Likewise, in the southern half of the yard (Unit 8, 9, and 12), there are also major stratigraphic trends. Unit 8 and Unit 9 are only a few meters away from each other, so it is not surprising that their first two strata are almost identical. Stratum 8-2009 (Unit 8) and Stratum 13-2009 (Unit 9) are both widespread topsoil layers with dark brown, loosely packed soil.[18] Stratum 9-2010, the top layer for Unit 12, also has the same characteristics. Additionally, the second layers, Stratum 9-2009 (Unit 8), Stratum 14-2009 (Unit 9), and Stratum 10-2010 (Unit 12), are all described as mottled and clayish with some sandy spots.

Despite these connections, the stratigraphy of the southern units is almost completely incompatible with the northern stratigraphy. The only comparison is the loose topsoil layer.[19] Otherwise, the deeper strata of the three southern units are very different than the northern units in both in Munsell value and soil consistency. Therefore, while trends exist in both the northern and southern halves of the yard, the two areas are quite distinct.

Conclusion

Overall, the main goal of this report was to clarify the stratigraphic relationships throughout the John Brown House excavations. By describing the strata of the individual 2010 units and comparing these strata across the three excavation seasons, this report contributes to the further dating of contexts, connection of widespread artifacts, and analysis of general land use. As a note for future excavators, it is also important to recognize that identifying emerging contexts only on the basis of distinct soil characteristics made this process significantly easier. While the creation of arbitrary contexts every 10 centimeters does ensure greater detail, in many ways it can complicate the stratigraphic report later on. Unlike in previous years, the 2010 excavators did not miss any layers during digging, thereby demonstrating the merit of the new system.

[18]Baker, S. 2009. "Site-wide Stratigraphy Report." John Brown House Site Report. 26-46.
[19] See "2010 Site-Wide Comparison."

Stratigraphy also plays a role in determining what is actually considered an archaeological site. By this formalized definition, a true site must demonstrate a concentration of artifacts or evidence of past human activity and a series of at least partially relatable strata. Therefore, an additional goal of this report was to reevaluate the John Brown House terminology, specifically the notion that all the 2008, 2009, and 2010 units lie within a single archaeological site. The "2010 Site-Wide Comparison" describes a fundamental lack of connections between Unit 10, 11, and 12. Likewise, the "Integration of the 2008 and 2009 Stratigraphy" reveals two distinct trends in the northern and southern areas of the yard. Thus, a full site-wide report suggests there are no coherent stratigraphic relationships that span throughout the entire John Brown House excavations. The JBH project therefore must include multiple archaeological sites. While it is quite possible that we are working on as many as four distinct sites, as of now, there is not enough evidence for such a narrow division. Given the large north-south trends, the only reasonable conclusion must be somewhat conservative: that the John Brown House excavations consist of two different sites, the northern area (Unit 1, 2, 3, 4, 5, 6, 7, 10, 11) and the southern area (Unit 8, 9, 12) of the yard. Therefore, the northern area may now be referred to as "The Hale-Ives Site" and the southern area as "The John Brown House Site."[20]

Future analysis is necessary in order to gain a better understanding of the stratigraphy at the JBH excavations. Additional units will not only yield more artifacts and features, but they will help answer the question of whether the Hale-Ives and John Brown House sites can be further divided. Also, the nature of the features and fill areas in the northeastern and northwestern portions of the yard require further investigation. Why is the stratigraphy in the north and south so different? What was the function of JBH 71/ Feature 4 in Unit 11? Inevitably, these questions can only be answered in subsequent field seasons. As always, we reach the most common archaeological conclusion: we must simply continue to dig.

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[20] These names are primarily designed to clarify the distinction between the two John Brown House sites. Because they are not necessarily accurate, the author encourages future researchers to continue investigating and to potentially rename the sites given further evidence.

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December 13, 2010
ARCH of College Hill
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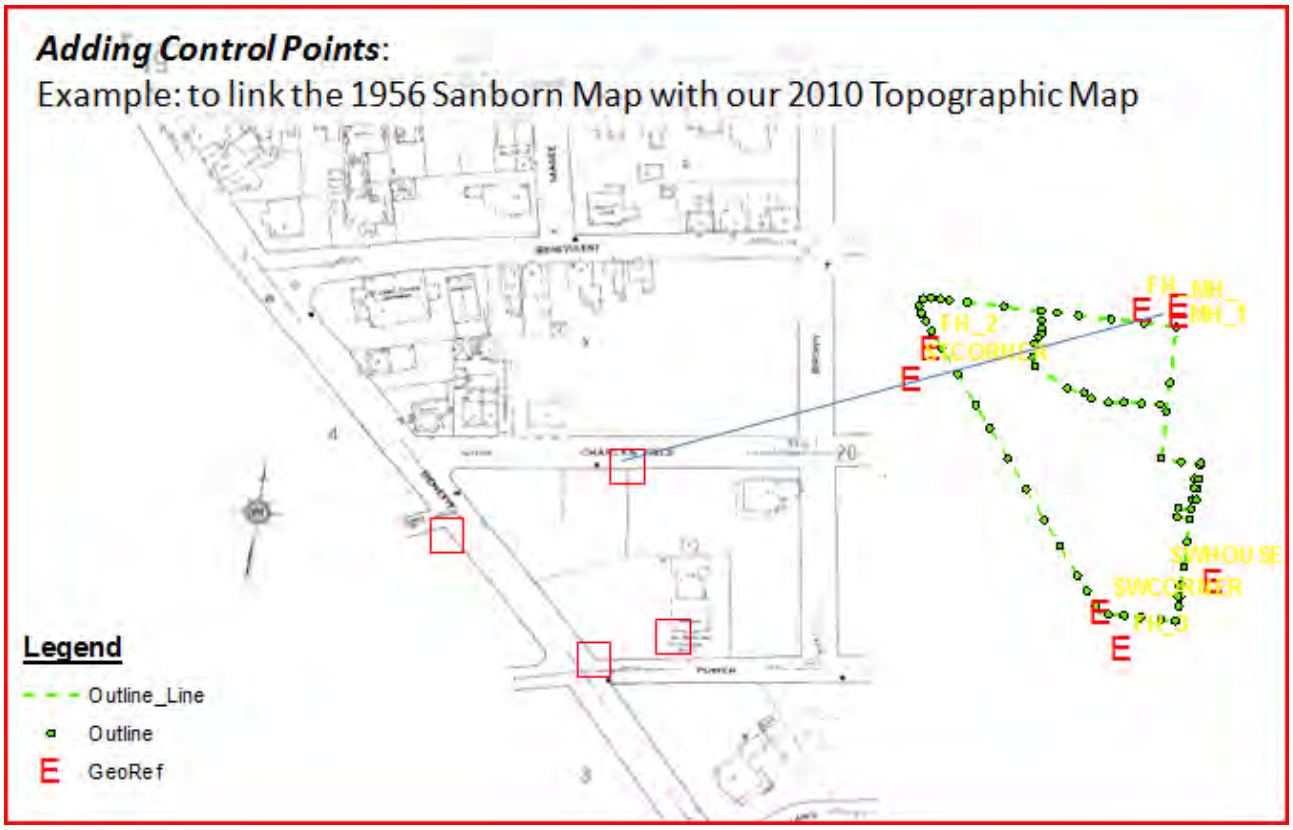
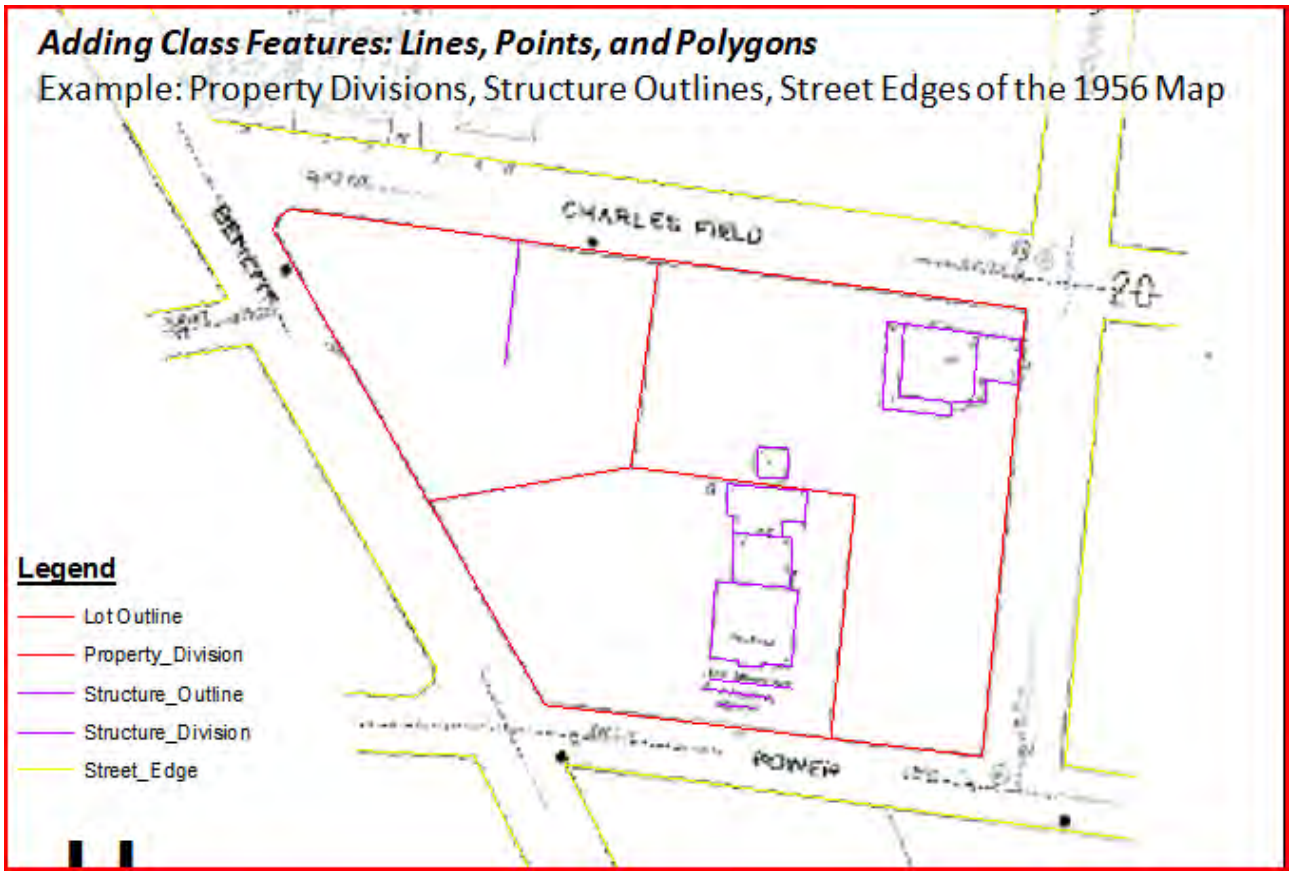
Landscape History based on the application of Geographic Information Systems to Historic Sanborn Maps (1889-1956)

After three seasons of excavation and research at the John Brown House site, numerous discoveries have provided insight into the landscape composition of the property. The 2009 report included a landscape analysis, which merged cartographic evidence with documentary evidence to examine change over time. To supplement this research, this report aims to merge the cartographic evidence from multiple maps by overlaying them on top of each other. Geographic Information Systems software was utilized to first georeference and digitize a number of historic maps to make their overlay possible. The purpose of this project is to visually illuminate transformations in the historic landscape, property configuration, roads, and building distributions at and in the immediate vicinity of the JBH over time.

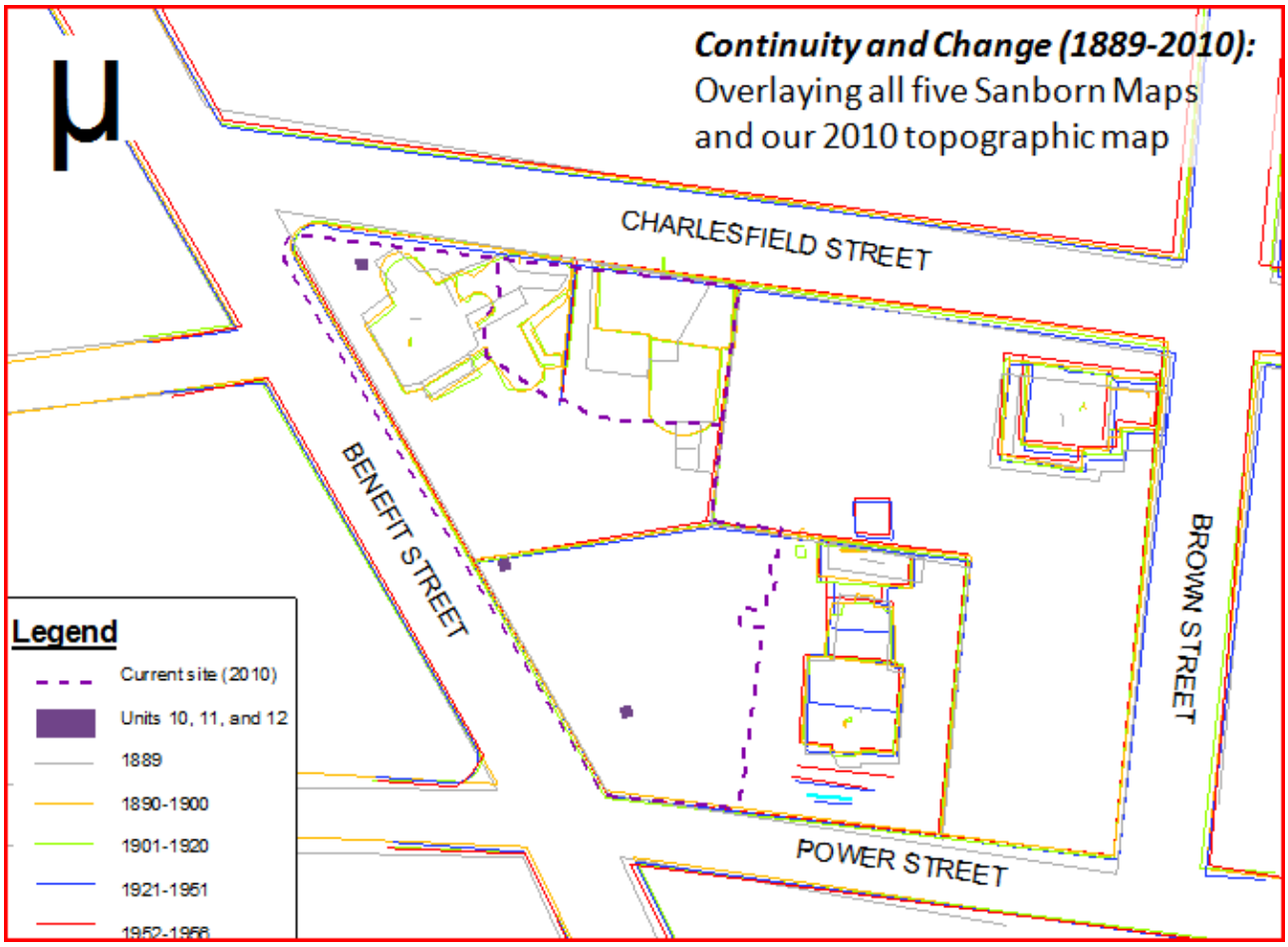
Five historic Sanborn maps – limited to the property itself and the extension of the streets a block in each direction – were chosen as the focus for this spatial analysis. Sanborn maps are large-scale plans of a city, drawn at a scale of 50 feet to one inch, that were used to help fire insurance companies assess the risks of insuring a given property in the late 19th century through mid-20th century. The five Sanborn maps available of Providence offer snapshot images, each one to two decades apart, with a total span of about 70 years. They date specifically to 1) 1889, 2) 1900, 3) 1920, 4) 1951, and 5) 1956. Each maps depicts the outlines of the main structures on the site, the property divisions, and the street edges. The consistent set of criteria means that any changes visible over time can be assumed to represent true changes in the landscape, rather than a function of selection bias of the cartographers.



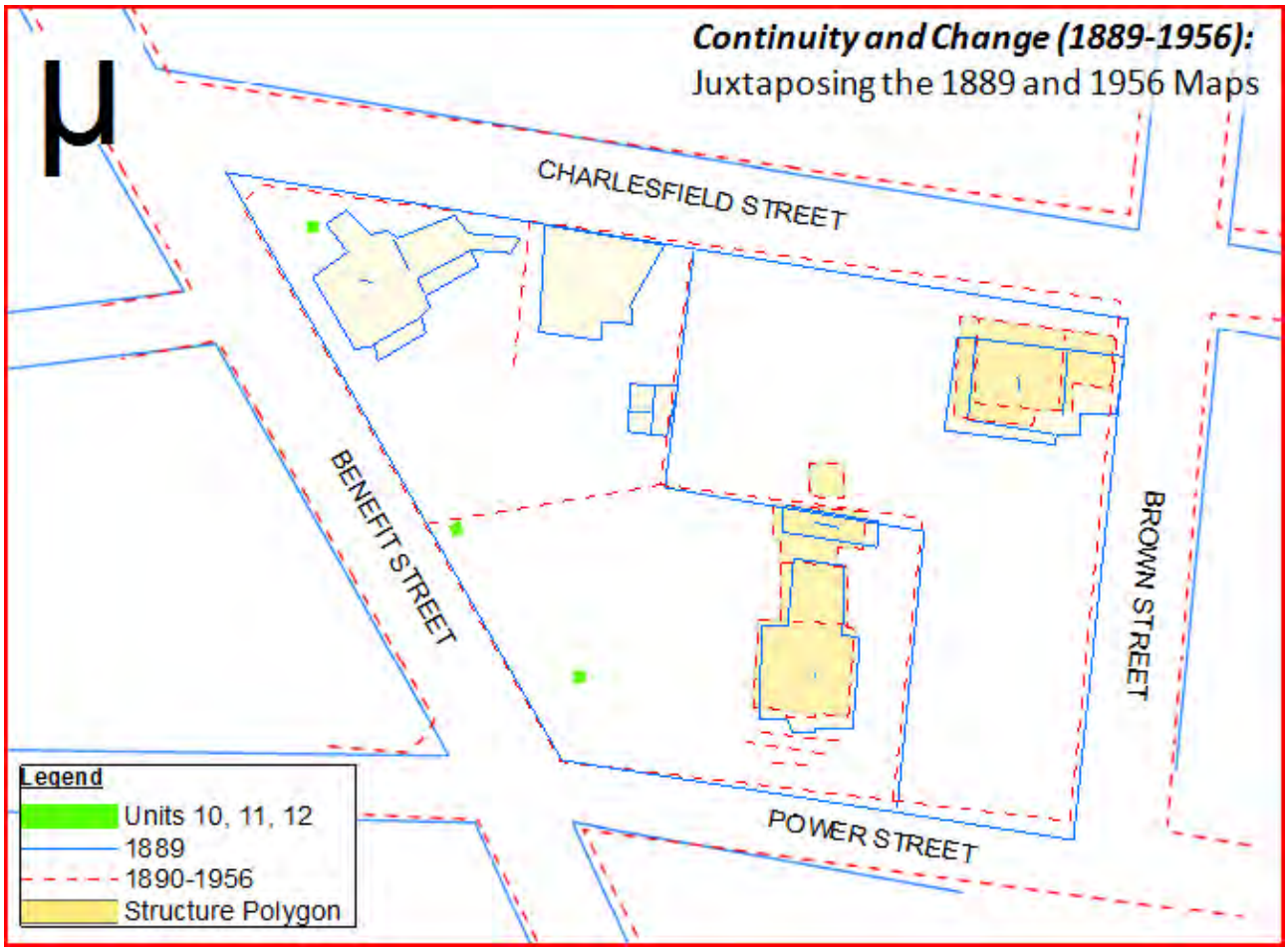
The first step in the digital manipulation of the historic maps was to georeference them using Geographic Information Systems, specifically ArcGIS software. When data from different sources need to be combined and then used in a GIS application, it is essential to have a common referencing system. A number of common geographical locations on Max Mankin's 2010 topographic map were chosen as georeference points, with which to link the five historic maps – the northeastern corner of the site, the southwestern corner of the site, the southwestern corner of the John Brown House, and the southwestern corner at the intersection of Benefit and Planet Streets. For each map, so-called control points were manually added, linking each of these points on each historic map with the common point on the 2010 topographic map. After completing the georeferencing process, it was possible to view the 2010 topographic map overlaid on each of the historic maps separately, but still impossible to merge all five Sanborn maps into one image.



The next step, therefore, was to digitize each of the five Sanborn maps. First, the following point, line, and polygon class features were added to the database: 1) lot outlines, 2) property divisions, 3) structure outlines, 4) structure divisions, 5) structure polygons, and 5) street edges. Each class feature was drawn manually, by zooming in on the features on each map and tracing over them with drawing tools. Since the original map consisted of a simple non-digitilized image, there was no ability to enable automatic "snapping," making human error inevitable. The potential for human error was exacerbated by the blurriness of some of the lines. Nevertheless, the digitization of the general outline of the property and its main structures and streets was accomplished.



Finally, a number of output maps were produced by overlaying different features of multiple maps at once and distinguishing the year of origin by color. The overlaying of all the digitized features of all five maps provides a fairly cluttered image. Nevertheless, as a generalization, it is evident that the street lines in the immediate vicinity – of Power, Benefit, Charlesfield, and Brown Streets – have remained consistent, while the structures within the lot have undergone major changes. Adding the unit polygons from the excavations of this 2010 season reveals the potential usefulness of the georeferencing and digitization of historic maps. The placement of Unit 10 was intended to uncover a portion of the front foundations of the now demolished Robert Hale Ives House in the northwestern corner of the lot, but the GIS map indicates that the unit was placed directly outside the footprint of the entrance portion of the house. At the same time, the output map emphasizes the limitations of the historic maps and the need for field excavations; since Units 11 and Units 12 appear isolated within the historic landscape, but in fact have revealed the existence of a mysterious outhouse building and an underground water pipe system.



Overlaying the earliest map from 1889 and the latest map from 1956 highlights the main transformations that occurred during the overall 67 year time span. The main difference is the conspicuous absence of the Robert Hale Ives House in the northwest corner and of another outhouse building along the division line with the Charlesfield and Brown street property in the northeast corner of the lot. Also clearly evident is the expansion of the John Brown House, with the addition of a middle section to the north and the merging of the original house with the major outhouse also along the property division line. The 1956 Map also features the addition of a new outhouse building to the north of the John Brown House on the opposite side of the property division line.

While these major changes were identified in the analyses of past seasons, the more subtle differences are illuminated through the overlaying method. For example, since each map has been scaled to the same georeference points, the GIS maps accurately reveal the subtle alterations in the footprint of the Hale Ives House and its changing relationship to the additional outhouse buildings along the Charlesfield fence. An rear alcove was added by 1900 while the entrance alcove was

expanded by 1956. The outhouse buildings to the east of the Hale Ives House appear as contiguous with the main house in the earliest 1889 map. However, in all the later maps the outhouse buildings appear separate. The line representing the brick wall constructed to separate the house from the outbuildings maintains a consistent position across all the maps. In addition, by 1920 the footprint of these outhouses extends over the footprint of the former outhouse building along the property division line, which is only depicted in the 1889 map.

These represent some of the advantages of the use of GIS software to georeference, digitize, and overlay the historic maps. The application of this methodology to additional historic maps and the analysis of the ArcMaps in reference to additional documentary evidence could assist in the placement of future units and provide additional context to future work in the field.

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Historic Foodways and a Recipe Book from the Brown Family Household

Benjamin Jones

Cookbooks have always revealed a great deal about changes in culture, tastes, and society. The 1800s were no exception. During a time of extraordinary change in America, cookbooks kept pace with rapidly changing foodways and served as potent means of creating identity, both in and out of the kitchen. The historic cookbooks belonging to the Brown family are no exception, and it is with them as our eventual focus that we will explore the social nature of 1800s foodways.

The 19th century was a time of extraordinary upheaval for American foodways. During this time the country expanded, swelling from a strip along the East coast of the continent to a vast nation stretching from shore to shore. This not only opened up frontiers for new types of food cultivation, but also created the space necessary for regional variations. The types of food prevalent in the South were different from those in the Midwest and those in New England. Combined with the advent of the railroads and effective overland transportation, and not only did areas have the chance to develop regional culinary traditions, but other areas were able to benefit from those specializations. "By the 1830s…the availability of fresh produce from California, oysters from the Chesapeake Bay, lobsters from New England, and oranges from Florida offset the seasonality that had determined menu and dietary choices from the beginning of European settlement in North America".[1] This can be seen to affect recipes of the time. For example, most recipes for breads and baked goods written in America before the 1800s call for Indian meal (cornmeal) as a primary ingredient. While Indian meal recipes

[1] Williams, *Food in the United States, 1820s-1890*, 7.

never truly die, after the 1830s they are completely overtaken by flour-based recipes as a result of the emergence of wheat farming and flour production in the Midwest making the acquisition of flour not only reasonable, but commonplace for most Americans.[2] Not only was the American diet enhanced by geographical expansion, but by cultural expansion as well. The period from 1820 to 1890 saw record numbers of immigrants, who brought the unique cooking traditions of their homelands to the American table.[3] C.B. Dupee, a Boston area butcher, stocked beef and pork in 1848. "Within a decade, his list of available meats had expanded to include mutton, veal, lamb, poultry, ham, tripe, sausages, and pig's feet".[4] This might well be the result of increased German immigration to New England, bringing a culinary heritage rich in pig meats[5], as well as increased transportation allowing Dupee and others to bring in more offerings from farms further afield.

Shifts in societal trends also affected foodways over the course of the 1800s. More and more people were gathering in cities, rather than living in the country. This had several effects. Not only did this create new social situations, for which different types of food service would be necessary, but it also meant that a greater number of people were neither farming, nor even interacting with the farmers that grew their food. It is in the 1800s that America saw the shift from the dominance of agrarian

[2] Williams, *Food in the United States, 1820s-1890*, 20.
[3] Williams, *Food in the United States, 1820s-1890*, 7.
[4] Williams, *Food in the United States, 1820s-1890*, 105.
[5] Williams, *Food in the United States, 1820s-1890*, 105.

foodways to the supremacy of the market. Urbanization led to widespread disconnect between purchasers and providers for the first time in American history.[6]

New technologies also greatly changed the culinary landscape in the 19th century. One of the most prominent was the invention of the stove. With the beginnings of stove cooking, much of the manual labor was taken out of the food preparation process. Food could be prepared on a modern range, rather than laboriously hung on a fireplace hook. This allowed for more food to be prepared at once, and books of tips were written on how to juggle several courses cooking on different ends of your range without sacrificing efficiency. Over time, this led to an increase in the complexity of recipes, as much of the work once put in to managing heavy objects over a hearth fire could be put into preparing more food more efficiently.[7] The rise of the canning industry, too, changed the face of cooking. Now that foods could be stored longer, and off-season, recipes had to allow for these new options, and new ways of dealing with a customer base buying canned rather than fresh ingredients. Cookbooks, of course, changed to accommodate all these advances, increasing the variety of ingredients called for, the complexity of recipes, and encompassing different regional styles of cooking.

The history of American cookbooks is as intricate as the history of American food itself. The authorship, readership, content, and presentational style of cookbooks all evolved greatly over time. Beginning with imported cookbooks from England, America developed its own style and idea of what a cookbook should be, until cookbooks

[6] Williams, *Food in the United States, 1820s-1890*, 8.
[7] Williams, *Food in the United States, 1820s-1890*, 85.

became not just a way of imparting information, but a social phenomenon and an invaluable element of home culture.

The first cookbooks used in America were early 1700s British imports like *The Compleat Housewife: or Accomplish'd Gentlewoman's Companion*. These cookbooks, though, catered to English styles, using the methods of cooking and ingredients available in British kitchens, rather than American ones. Even *The Frugal Housewife or Complete Woman Cook* by Susannah Carter, the first cookbook being published in America after the revolution, was British-written, and contained no references to uniquely American culinary innovations.[8] Arguably, Amelia Simmons wrote the first truly American cookbook in 1796, with the concise title: *American Cookery, or the Art of Dressing Viands, Fish, Poultry and Vegetables, and the best Modes of Making Pastes, Puffs, Pies, Tarts, Puddings, Custards and Preserves, and All Kinds of Cakes, from the Imperial Plumb to Plain Cake, Adapted to this Country, and All Grades of Life*.[9] Though Simmons borrowed heavily from her British contemporaries to create *American Cookery*, this was the first cookbook written by an American for Americans, and significantly, included the adaptations to classic recipes American cooks had been making for decades to adjust to their new home and its different demands.[10]

Simmons' *American Cookery* spawned a wave of American cookbooks, to the extent that diversification rapidly occurred within the genre. In 1824, *The Virginia Housewife* was published, and in 1832, *The Frugal American Housewife*: both books

[8] Fisher, *The American Cookbook*, 10.
[9] Fisher, *The American Cookbook*, 13.
[10] Fisher, *The American Cookbook*, 13.

catering to niche markets of American domestics.[11] However, it was after the Civil War that the great shift in the way cookbooks functioned truly occurred. Prior to the war, cookbook writing was a task for professionals; cookbooks were a commercial endeavor undertaken by a few. After the war, cookbooks became more democratized, more collaborative. Men were removed from the picture almost entirely. Though there were many women cookbook authors before the war, after it, the only men writing on cooking were professional chefs and health experts. There was also a move away from the classic single-author cookbook. Though individual women still published books of recipes, many cookbooks became intellectual heirs of the collaborative projects women had undertaken together to sustain the war effort. These collaborative projects focused on suggestions from individual women, taking submissions of the best recipes from everyday women, and compiling them into recipe books.[12] The overwhelming success of the recipe book *Buckeye Cookery*, which was written in this fashion, was a testament to the idea that every woman had something to contribute, and to the growing social role of the cookbook.

Not only did public cookbooks assume a social role in the latter part of the 19th century, but private ones also continued the social role they had played since the1600s. Most women would keep a personal cookbook: a log of their favorite recipes, perhaps interspersed with a diary, or notes on developments around the house. These cookbooks are incredibly diagnostic, as they often contain personal notes from their owners jotted in the margins, or other information about the daily life of the household.

[11] Williams, *Food in the United States, 1820s-1890*, 63.
[12] Williams, *Food in the United States, 1820s-1890*, 64.

One such recipe book, the personal collection of a woman named Elizabeth Randolph, contained in the back a complete list of the duties of the household servants, especially the cook and waiter, organized by day and time.

Cook's Work
Everyday – Prepare men's breakfast –
parlour breakfast – wash kitchen
breakfast things – servants dinner
at 12 o'clock – parlor dinner at one
or two o'clock – wash kitchen dinner
things – parlor dinner dishes –
prepare men's parlour tea –
Mondays – Do the milking – wash
parlour breakfast cups, assist in
the washing, wash parlour dinner
and dessert dishes – do the milking
in the afternoon –
… [13]

Clearly, a great deal of Mrs. Randolph's life was invested in this cookbook. It was how she ensured that the house ran smoothly, how she instructed the servants in their duties. This was not an uncommon task for a private cookbook to perform. However, private recipe books had another, just as important function: they were powerful social tools.

Since a great deal of a woman's time was spent dealing with food, it was only natural that social gatherings would reflect this theme. When meeting with friends or acquaintances, women would swap their best recipes, and comment on the ones already in their cookbooks. These cookbooks, an intricate collaboration of family history, pieces taken from published works, and favorite ideas traded with others,

[13] Theophano, *Eat My Words*, 36.

became important social networking devices. "Women used food-related activities as opportunities for socializing and creating friendships with women and men. Cookbooks, then, besides describing foods, are records of women's social interactions and exchanges."[14] Recipes were exchanged with anyone and everyone: old friends, new acquaintances, relatives, even servants have been attributed as the providers of recipes in some cookbooks.[15] Sometimes the same recipe will be repeated multiple times, with different individuals' variations on how to prepare the dish. For individual women, private cookbooks provided both a means of creating social networks, and a tangible record of those connections, as well as a reference in the kitchen.

An examination of one such private cookbook, belonging to Mrs. Marshall Woods, reveals that it bears both trends of private recipe gathering and of the general state of foodways in late 19th century New England. There are few personal adornments here, just a title page reading: "Mrs. Marshall Woods. Providence, RI Oct. 1880."[16], followed by a long document filled entirely with recipes. However, there are enough personal touches and points of comparison about the recipes to be instructive. Fortunately, after Mrs. Woods' death, someone thought to include a typewritten insert behind the cover of the recipe book: "Anne Brown Francis Woods, daughter of the Honorable John Brown Francis and Ann Carter Brown. Granddaughter of the Honorable Nicholas Brown and Ann Carter. Born at Spring Green, Warwick, Rhode Island April 23, 1828. Married at Spring Green to Marshall Woods of Providence, Rhode Island July 12,

[14] Theophano, *Eat My Words*, 13.
[15] Theophano, *Eat My Words*, 37.
[16] Brown Family Recipe Book, RIHS Transcription

1848. Died at their residence, 62 Prospect Street, Providence, Rhode Island August 24, 1896."[17] The presence of the insert demonstrates that at the time, the value of cookbooks as a record and as an iconic personal possession was understood and appreciated.

In many ways, this recipe book is emblematic of the particular foodways of the late 19th century. The cookbook begins with a rather impressive collection of soups, something that would have been unheard of just forty years prior. In the early part of the 19th century, soups, though ubiquitously eaten, were not mentioned, but rather looked down on as a way that the lower classes made their meat last longer, not something fit for the genteel. The 1833 classic *The Frugal American Housewife* mentions soup only in passing, as an addendum to other recipes.[18] However, with increasing European influence and the rise of the canning industry, soup became increasingly accepted over the course of the 1800s, and the gentry looked for ever newer ways to prepare and present different soups.[19] Thus, it is perfectly fitting that soups should take pride of place in Mrs. Woods' compilation, as a way to prepare food that was both in vogue and economical.

It is interesting to see how economy plays a part in private cookbooks in ways that it did not in commercial ones. As the variety of foods available to the consumer expanded during the 1800s, commercial cookbooks called for greater and greater numbers of different ingredients, and yet, as is always the case, there was a disconnect

[17] Brown Family Recipe Book, RIHS Transcription
[18] Williams, *Food in the United States, 1820s-1890*, 24.
[19] Williams, *Food in the United States, 1820s-1890*, 25.

between what it was possible for a family to obtain and what it was reasonable for them to obtain regularly.[20] Commercial cookbooks of the late 1800s provided recipes for a staggering array of different meats. "Lydia Child mentioned beef (chuck steak), pork (shoulder), lamb, mutton (breast, shoulder), veal (breast, loin, shoulder), the hearts of bullock, pig, and lamb, calf's head, neat's tongue (also buffalo's and pig's tongues), ham, veal and beef liver, bacon, cured mutton, salt and corned beef, mince meat, ox flank, sweetbread, sausage, pickled pork, beef, and mutton."[21] There is nowhere near this variety of meat in Mrs. Woods' cookbook; the meat offerings are made up largely of veal with a few beef and pork offerings. This, again, was the value of a personal cookbook; Mrs. Woods could take those recipes that pertained most to her. If the family was particularly fond of veal, or it was easier or more economical to obtain than other meats, those are the recipes that would get added to her cookbook.

Mrs. Woods' cookbook contains evidence not only of common foodways of the time, but of the function of cookbooks as social tools. We have, at the back of the cookbook, several recipes that do not appear to be continuous with the rest of the cookbook. Most of the compilation is divided into distinct categories: soups, meats, seafood, cakes, puddings, and so on. However, there are several recipes at the end that do not seem to be in their categories. A recipe for 'Ester's Beef Tea' follows one for pound cake. All the recipes following Ester's beef tea have personal names associated with them. These seem to be recipes suggested by friends and acquaintances after the main compilation was completed and appended to the existing document. In some

[20] Williams, *Food in the United States, 1820s-1890*, 31.
[21] Williams, *Food in the United States, 1820s-1890*, 31.

cases it seems that these third parties were even interacting with one another, indirectly or not. After Ester's beef tea, there is a supplement:

Allen's way of making it. Pour cold water over the beef, let it stand about 1 or 2 hours, to soak. Following prepare like Ester's only not beat the eggs so well.
Alma.[22]

Here we can see an interaction at least between Anne Woods and Alma, who has suggested Ester's recipe and Allen's corrections, if not between these two and Ester and Allen themselves. Certainly we can say they were all people known to Mrs. Woods to varying degrees. Some personal notes have managed to sneak in earlier in the cookbook, with a large number of recipes attributed to Mrs. Alma Woods. Alma was a relative, then, who passed on a great deal of information to her kinswoman, Mrs. Anne Woods. Transmission of this type of information within family circles was absolutely the norm, and this record of it tells of either a close relationship or at least respect between Anne and Alma Woods.

Some notes are harder to puzzle out. Appended to one recipe for wine jelly is the note:

Wishing you success dear Abby and believe me.
Affectionately yrs-
M.H. Foster
Oct 30-
I hope you will come over soon to see me.[23]

Since neither the name Abby nor M.H. Foster appear elsewhere in the document, this note is quite peculiar, but could easily be an insertion (the handwriting is almost illegible

[22] Brown Family Recipe Book, RIHS Transcription
[23] Brown Family Recipe Book, RIHS Transcription

to my untrained eye, and could be that of a second individual) from another person with some relation to Anne Woods. Even when the social nets behind the recipe notes are unclear to us, their presence is still keenly felt, as in this very affecting note.

It is not unreasonable to assume – in fact, it seems likely – that the inhabitants of the John Brown House and the Hale-Ives House would have kept personal cookbooks of their own. The question is, who was interacting with those books? The JBH excavations in the fall of 2010 uncovered cookware from several very different walks of life. On one hand, the Unit 12 team uncovered both Canton porcelain, and Staffordshire slipwares. Canton porcelain was produced from the 18th through the 20th century, so it could easily have been in use during the time period in question. As a Chinese import, it likely would have come through the trading network being run from the John Brown residence, and was itself a luxury good.[24] Perhaps it was not the best plate the family owned, but it was certainly high-class. Staffordshire slipwares were less elaborately decorated than other slipwares. While not a mean sort of ware, they would certainly be more of a daily-use set. At the low end, we uncovered banded annular wares in Unit 10. These were a cheap, mass produced bowl type from English factories often given as cooking bowls to slaves. Annular wares would certainly not be seen outside the kitchen or the servants' quarters. Since there is such stratified cookware, it makes sense for there to be a stratified house, with a servant contingent preparing food. The purpose of a cookbook would then likely become less of a life necessity and would be primarily utilized for its social function. The lady of the house could use it to plan menus for parties, and

[24] "Chinese Canton Porcelain," AARF, Accessed 12/12/10, http://aarf.com/fecant98.htm

entertain friends by sharing recipes, even if the servants were doing the actual cooking. Indeed, Mrs. Randolph, mentioned above, actively involved servants in the cookbook process. Not only did her recipe collection contain her servants' to do list, but several of her recipes are attributed in ways that make it seem likely that they were servants' contributions.[25]

Cooking has always been more than simply a means of keeping our bodies alive. It is a social experience, now as in the 19th century. For the women of the 1800s, cookbooks were a way of preserving family traditions and connecting to others while keeping their house in order. They performed a vital function in the community, by strengthening ties between family and friends on a personal level, to helping create a national identity for our evolving foodways on a commercial level. Cookbooks in the 1800s helped define us, both as a country, and as individuals, and the Brown family was no exception.

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Transcription of recipe book, original owned by Henry A.L. Brown. Transcription by RIHS, March 30, 2007

[25] Theophano, *Eat My Words*, 36.

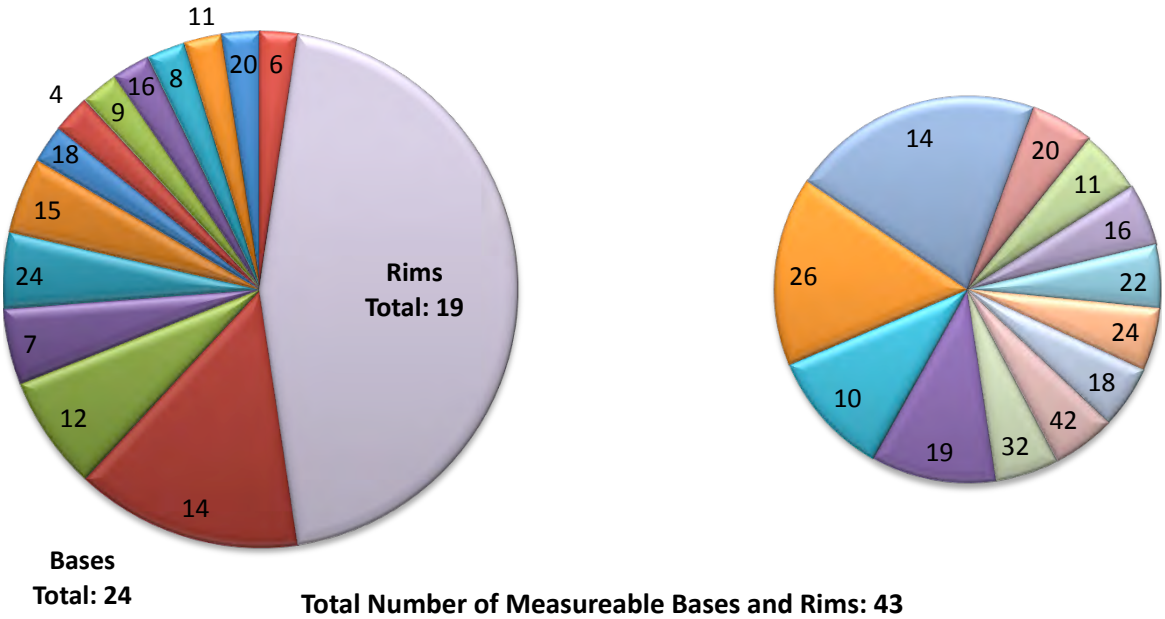
Ceramics from the Winter 2009 Construction at the John Brown House

Jenneth Igbokwe

Ceramics is a broad term covering all types of fired clay, which are then divided into groups defined by the degree of porosity and firing temperature. The ceramics that were analyzed for this paper come from the construction site of the geothermal wells. As the wells were being placed below the surface, it brought about an upheaval of the ceramics, which were then collected for research purposes. This paper examines the functions and origins of the artifacts, and proposes their possible significance within the household while reporting on the similarities encountered not only between the sherds, but with those on display in the Butler's pantry.

The following graph shows a general breakdown of the diameters measured. These sherds come from the artifact bag being held at the JBH Museum.

Sherds by Diameter (cm)



Total Number of Measureable Bases and Rims: 43

The following charts explain the graph by showing the actual quantities as represented by the pies.

Number of Sherds	Diameter (cm)
Bases	
6	14
3	12
2	7
2	24
2	15
1	18
1	4
1	9
1	16
1	8
1	11
1	20
1	6

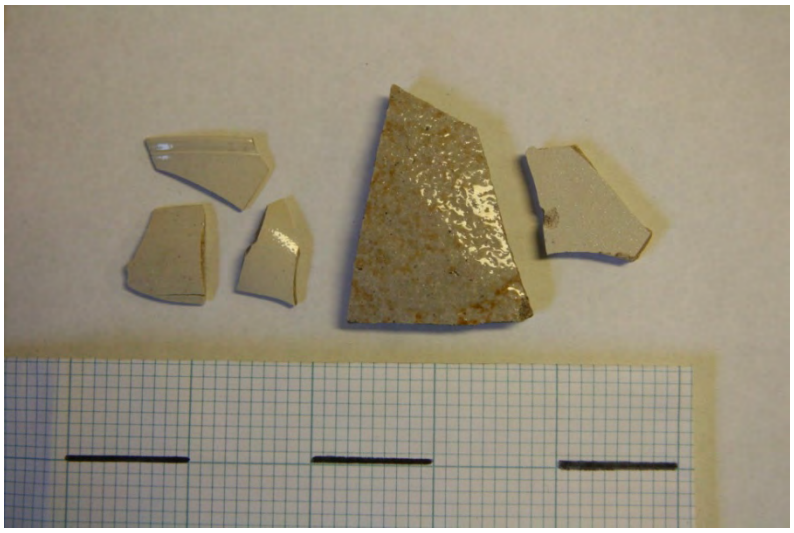
Number of Sherds	Diameter (cm)
Rims	
2	19
2	10
3	26
4	14
1	20
1	11
1	16
1	22
1	24
1	18
1	42
1	32

Earthenware is a common ceramic material that is used for pottery tableware and decorative objects. It is fired at 1000°C to 1200°C. The object remains porous until the glaze is applied, which is not chemically bound to the object, but a separate layer (JBH Catalog 1).

Stoneware:

Stoneware is a type of pottery midway between earthenware and porcelain, being made of clay and fusible stone. It is fired to a point where partial vitrification renders it impervious to liquids (JBH Catalog 5).

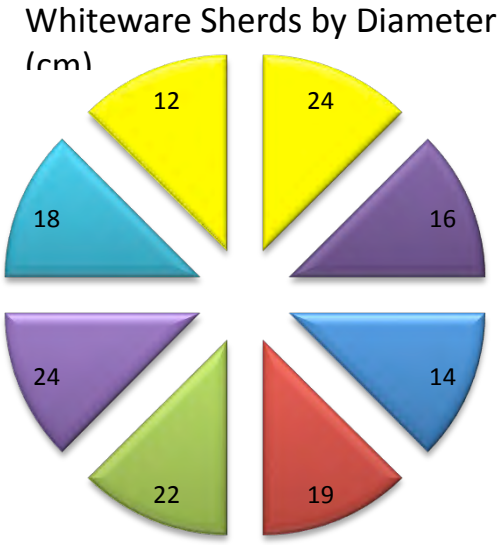
There were 5 stoneware sherds in my artifact bag, two of which were rims. One of the rims had a diameter of 28 cm, the other was unmeasureable.



Whiteware

Plain whiteware has production origins in England with a production date range of 1830 to the present. Its defining attributes include white to off white colored, thin, hard, compact paste, and a glaze in clear to light grey, may also be slightly bluish (Ceramics). Whiteware usually takes the vessel forms of bowl, cup, plate, platter, and tea pot.

Bases: 2
Rims: 6



Above is the distribution of diameters classified as whiteware. The bright yellow slices represent the two bases. Twelve centimeters indicates a bowl, saucer, cup plate, or child's plate. While, twenty-four centimeters indicates a dinner plate.

Below, in the above left, are the remains of the chamber pot, the largest sherd present in the batch – making up nearly 25% of the vessel.

There are a total of 31 whiteware sherds. Three are bases, nine are rims, and nineteen are body.

Pearlware

The pearlware in my collection have origins in England. There are three distinct types present. The first is edged pearlware which has production dates from 1785 to 1840. It is

defined as being white to light cream colored, thin, hard refined earthenware paste, or white to faint bluish with a clear lead glaze, caused by the addition of cobalt to the glaze. The rims are scalloped or plain, and decorated with a variety of impressed or embossed designs (Ceramics). Rims are also painted with a thin band of color, usually in blue or green.

Secondly, there is transfer printed pearlware present not only in the bag of sherds but in STP 3. This type of pealware dates from 1784 to 1840. Its defining attributes include: white to light cream colored, thin, hard, refined earthenware paste (Ceramics). Transfer printed designs are detailed, regular and naturalistic, usually covering most of the vessel surface (Ceramics).

Lastly is the most basic and plain pearlware. Production ranges from 1780 to 1840, it is defined by its white to light cream-colored, thin, hard, compact paste. These types of undecorated pearlware are less common, but it is likely that these sherds would have belonged to decorated vessels.

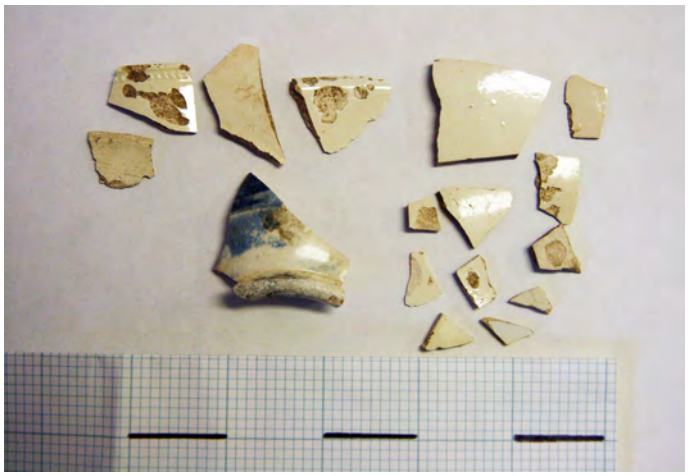
Pearlware usually takes the vessel form of a bowl, cup, jar, plate, platter, saucer, tea pot, or tureen.

Above are the pearlware sherds from my bag of artifacts. On the top left is an example of edged pearlware with feathering and a blue band. The green banded sherd is another example of edged pearlware.

There are a total of eleven sherds. Three are bases, three are rims, and six are body sherds. The green rim was unmeasureable as was one of the white bases. However, there is one rim (the dark blue) with a diameter of 10 cm indicating a tea cup, mug or tankard. The feathered sherd that has both a rim and base, with the base measuring 20 cm and a height of 1.5 cm, means that it was a supper plate. The white base on the bottom left had a diameter of 14 cm, indicating a bowl, saucer, serving bowl, cup plate, or a plate-muffin.

Creamware

Creamware is a white to light cream-colored, thin, hard, compact (although slightly porous) earthenware (Ceramics). It was created in 1750 by the potters of Staffordshire. Dates of production range from 1762 to 1820. It takes the vessel forms of bowls, cups, pitchers, plates, and platters.



There are a total of 16 creamware sherds, eleven of which are body sherds, four of which are rims, and the last a base.

The lone base has some remnants of transfer printing. It has a diameter of six centimeters which indicates that it is an egg cup. The two measureable rims have a diameter of 32 and 10 centimeters, indicating a platter and tankard, respectively.

Porcelain

Porcelain is made from a highly refined mixture of kaolin and petuntse and fired at 1200°C to 1400°C. There are several different types of porcelain such as soft-paste (fired at the low range), hard-paste (fired at the high range), and bone china (a hybrid hard-paste porcelain containing bone ash).

Kaolin and petuntse, the main ingredients in porcelain, are derived from granite (JBH Catalog 2). They are mixed together with water and other mineral salts, stirred, and then trodden under foot. Next, the clay was kneaded to remove air bubbles, and was then formed on a wheel or molded, depending on the shape desired and left to dry.

The Chinese never exported any of their best-quality porcelain, being reserved for imperial use (JDH Catalog 3). Instead shipped two types to foreigners: bua or 'slippery'- a porcelain of good quality, without bright colors and ni or 'mud' – poor quality, made from sediment (JBH Catalog 3). American merchants and private individuals had to specify the quality of ware desired, because if they did not, a coarse porcelain might be sent.

Prior to 1785, the year in which the United States began to trade directly with China, colonial chinaware was usually shipped by the British East India Company. The majority of this trade took place between 1736 and 1795, when it would brought on a ship from China, taken to England, and lastly to the United States. From 1796 to 1821 there was a decline due to the decline in quality and appeal (JBH Catalog 3).

In 1787, Providence entered the China trade, "when the company of Brown and Francis sent the ship General Washington to trade at Canton" (JBH Catalog). The ship returned in July of 1789 with $1,800 worth of chinaware. In 1799, the ship Ann and Hope (named after the daughter of Nicholas Brown) returned from Canton with 302 boxes and 124 rolls priced at $2,516.27 – "most of it consisted of blue and white dining services with extra pitchers and cups" (JBH Catalog 4). In 1794, the ship John Jay was launched from Providence to Canton, and returned in 1796 "with porcelain that amounted to 138 boxes, 8 rolls, and 1 basket of 'china' plus '2 China pitcher'" (JBH Catalog 4).

Most of the export porcelain was fairly inexpensive. The price increased with rising demand, but as Chinaware gradually lost its appeal for American, it became cheaper (JBH Catalog 4). The increased activities of the English ceramic industries and the beginning of high

tariffs to protect them were an additional influence (JBH Catalog 9). The potteries and porcelains of Europe became increasingly popular in American markets, and by 1810, had replaced the Chinese wares. As quoted by one observer, “European porcelain, with its smooth body and precise transfer printings in the Western style, had greater appeal than the Chinese Wares” (JBH Catalog 3). Additionally, instead of waiting two years to get their dinnerware from China, the English “took it right off the shelf and put it on the next ship to America” (JBH Catalog 9).

Chinese export porcelain can be divided into three time periods:

1785 – 1795 – rococo, pear-shaped pots

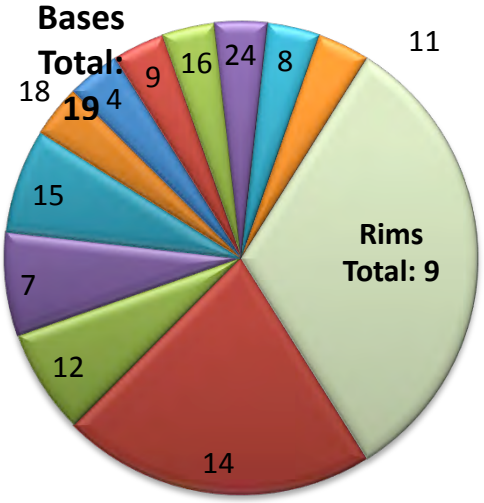
1793 – 1812 – cleaner and more geometric lines, corresponding to the styles of ancient Greece and Rome.

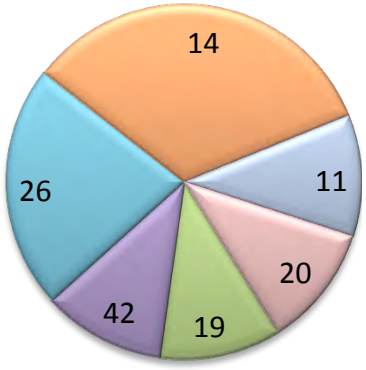
1815 – 1835 – increased decoration and the heaviness of the border designs; dependence on French rather than English designs and forms; this change points to the fact that Americans formed with the French during the Revolution through the War of 1812.

Once Americans gained independence, the Chinese began to decorate with American symbols such as the flag, the bald eagle, and other family crests.

Below is a breakdown of the porcelain sherds by diameter. The sherds have a wide range of diameters from four to forty-two centimeters.

Porcelain Sherds by Diameter (cm)





Number of Sherds	Diameter (cm)
Bases	
6	14
2	12
1	15
1	18
1	4
2	7
1	9
1	16
1	24
1	8
1	15
1	11
Rims	
1	19
1	42
2	26
3	14
1	20
1	11

There are a total of 58 porcelain sherds. They were divided up into three categories: decorated, undecorated, and hand painted.

The sherds with a diameter of twelve or fourteen centimeters indicate a bowl, saucer, cup plate, serving bowl, or plate-muffin. Sherds with a diameter of twenty-four or twenty-two centimeters indicate a dinner plate. A diameter of seven centimeters indicated either a coffee can or tankard.

The vast majority of decorated porcelain sherds are blue and white, meaning that they are most likely from Canton or Staffordshire. Canton porcelain was sent in white to the city of Canton, China where it would be painted to the merchant's order. Production dates for Canton porcelain range from 1790-1835. It is defined by its white, or grayish white, glass-like vitreous paste that is slightly thicker than other porcelain types. The glaze is of poorer quality, having a slight "oatmeal" texture to the surface and occasional pinholes. The design execution is simple, using bold brush strokes and various shades of blue ranging from watery grayish-blue to cobalt ("Ceramics"). Motifs associated with Canton include Chinese garden or village scenes, such as a pagoda, bridge and boats. Rim decoration on Canton Ware is of crude blue lattice network with an inner border of wavy or scalloped lines. Typical vessel forms include bowls, plates, and platters

In 1686, Burslem was identified as the center of ceramic manufacturing, but then wood fuel became costly and rare in England so they were forced out of business. In 1818 there were 144 master potters in Staffordshire and their period o peak production was from 1820 to 1840.

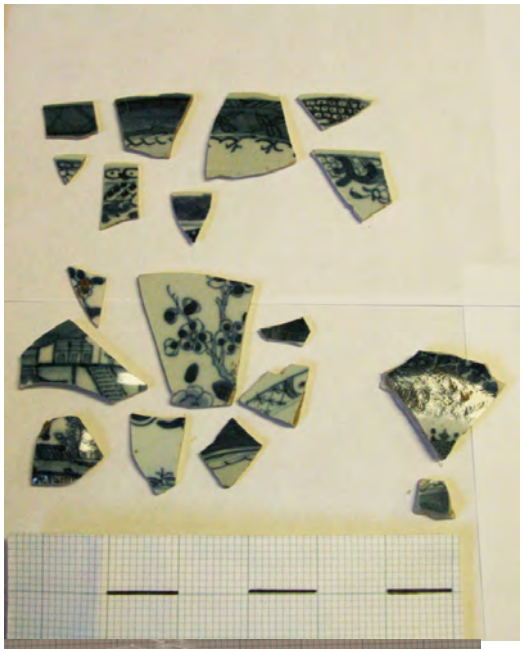
Staffordshire is easily identified by its Chinese willow scene and Nanking border with speak point.

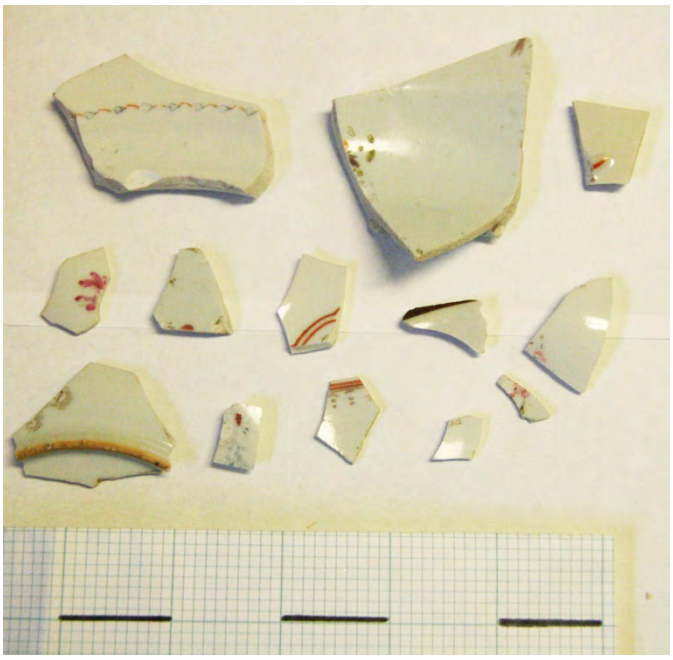
Within the Butler's pantry, there are examples of Canton porcelain. In cabinet 4, on shelf 1, there is a hot water serving dish as well as a sauce boat. In cabinet 5, on shelf 2, there are Staffordshire cups and saucers.

Socializing among the sophisticated and wealthy in the 18th century included drinking coffee or tea. It was not only fashionable to but also a status symbol among the wealthy to own elaborately composed matching services (JBH Catalog).

After analyzing the Butler's Pantry, it is clear that like much of the rest of the country during the 19th century, the Brown family made stopped buying Chinese porcelain and started buying English porcelain as well as French porcelain.

Decorated Porcelain






JBH GO

The sherds from STP 3 are very representative of the bag of artifacts held by the JBH museum. The porcelain sherds from STP 3 are very similar to my own, and may even cross-mend perfectly the Canton and Staffordshire pieces that I have.

The sherds attest to the fact that dinning ware or tableware in general were of great importance to the Brown family. The proportion of porcelain attests to this fact. As a marker of status, it was important for the Brown family to maintain a certain reputation as they entertained guests at various special occasions. It is believed, or as I was told by a few docents, that there was a summer kitchen out in the yard, perhaps near the location of Unit 11, and a winter kitchen in the basement. This theory would account for all the sherds present in the yard.

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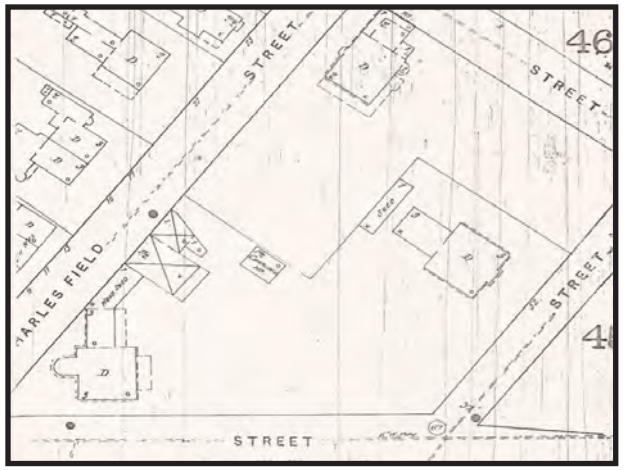
JBH Catalog

The Robert Hale Ives House

From The Pagentry of Benefit St., a drawing of the Robert Hale Ives House as seen from Benefit Street, circa 1900.

Tour Stop 2

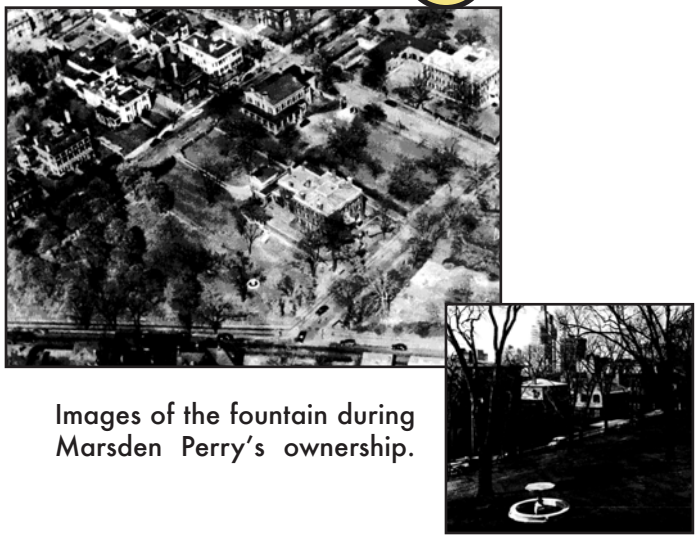
An 1889 Sanborn fire insurance map, showing the Robert Hale Ives House, and its outhouses on the northern side of the property, and the John Brown House on the southern side of the lot.



Tour Stop 3

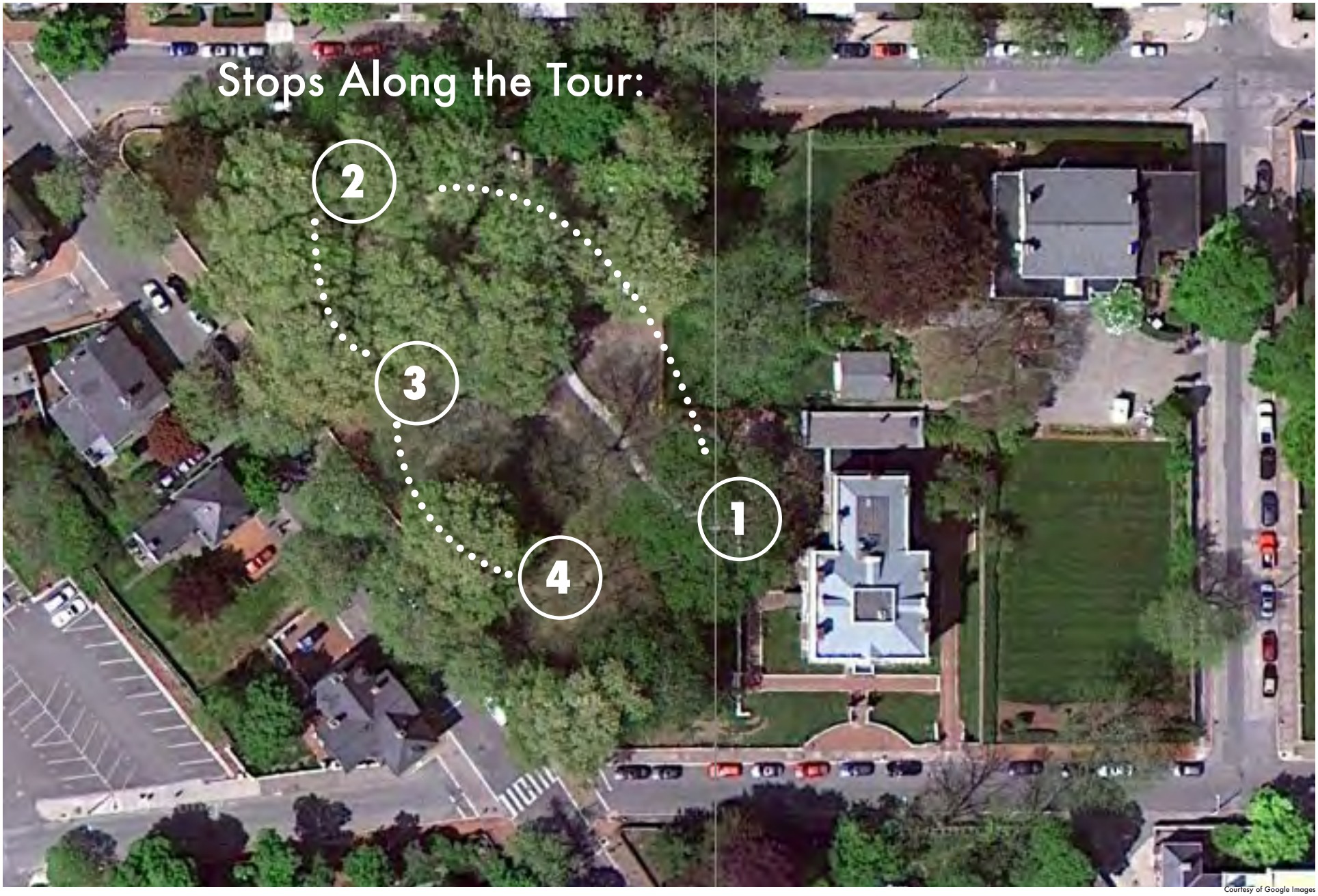
The results of the excavation in 2010, unearthing two walls and marble tiles.

Tour Stop 4



Images of the fountain during Marsden Perry's ownership.

John Brown House Landscape Tour



Courtesy of Google Images

Black Glass Bottle Fragment
Nick Bartos

Figure 1. Back Side of Fragment.

Figure 2. Front Side of Fragment

This glass fragment was the only one of its kind recovered during the 2010 John Brown House excavation season. It was found in JBH 68, the second context in Unit 10. JBH 68 consisted of light brown, orange, and somewhat rocky soil that yielded by far the most artifacts out of any context in Unit 10. This particular fragment measures 40 millimeters horizontally, 50 millimeters vertically, 9 millimeters on the bottom, and is 4 millimeters thick on both the right and left sides (as it faces in Figure 1 and 2). The glass is perfectly flat on one side (Figure 2) and slightly rounded on the other (Figure 1). Because it so small, the only diagnostic features of the fragment are its color and shape.

At first glance, the glass is dark and almost completely opaque; however, when the fragment is held up to the light, it appears to be an olive green. The dark olive color is called "black glass" and contains high levels of iron, manganese, carbon, and sometimes cobalt.[1] The black color is designed to keep light from hitting the contents of the bottle, and is particularly useful for protecting alcohol so it does not spoil. Black glass can also be found in dark amber and reddish purple, though olive green is the most common.[2]

[1] Jones, Olive, and Catherine Sullivan. 1989. *The Parks Canada Glass Glossary*. 2nd ed. Quebec: The Canadian Government Publishing Center. 14.
[2] Lindsey, Bill. "Black Glass." *Historic Glass Bottle Identification & Information Website*. U.S. Department of Interior Bureau of Land Management, n.d. Web. 12 Dec. 2010. <http://www.sha.org/bottle/colors.htm#Black Glass>.

In terms of the history of manufacture, black glass was first developed in England out of the switch from wood to coal as the fuel in the glass furnaces.[3] One of the oldest bottle colors, the first black glass was produced as early as the mid-17th century in Europe. By the early 19th century, black glass beverage bottles had become so cheap to make that they were being mass produced and were referred to as simply "junk bottles." As a result, between the 1840's and 1880's, black glass liquor, ale, and beer bottles were manufactured in over a thousand shapes and sizes. However, even with this influx, on the American east coast, many of the black glass bottles were still being imported rather than being produced within the United States itself. Either way, by the 1890's, manufacturers began to shift to lighter colored bottles, introducing more medium shades of amber, purple, and olive. European-made or not, black glass bottles became uncommon. Therefore, current historical sites dating to before this period tend to have a large amount of black glass fragments in contrast to later sites.[4] Based on the history of black glass, if the Unit 10 fragment had no other distinguishing features, we would date it between the mid-17th century and the end of the 19th century.

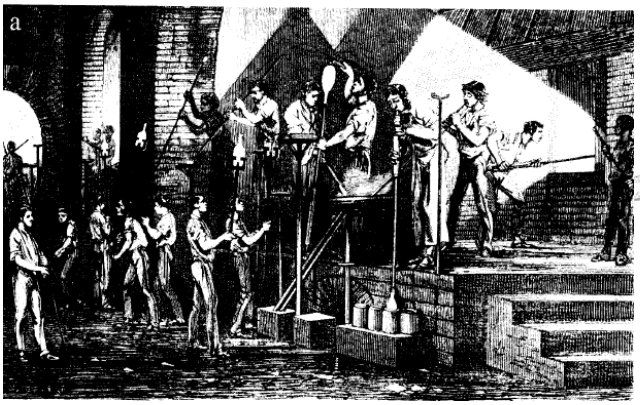


Figure 3. Factory Workers Dip-Mold[5]

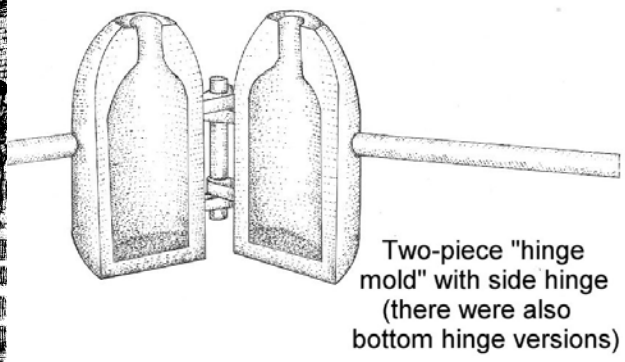


Figure 4. Two-Piece Mold[6]

Luckily, the shape of the fragment is also diagnostic. The left side of the fragment (Figure 1) is perfectly straight and seems to have been connected to another glass piece at a right angle. This would suggest that the fragment was part of the base of a square bottle and that it was molded or machine-made, as it is very difficult to get a right angle by hand-blowing the glass. The straight edge also

[3] Ibid. Footnote 1.
[4] Ibid. Footnote 2.
[5] Ibid. Footnote 1. 25.
[6] Lindsey, Bill. "Bottle Bases" *Historic Glass Bottle Identification & Information Website*. U.S. Department of Interior Bureau of Land Management, n.d. Web. 12 Dec. 2010. <http://www.sha.org/bottle/bases.htm>.

protrudes inward slightly, adding more surface area for a potential seam, a common occurrence on molded bottles. The technique used was most likely a type of contact molding, when hot glass is forced into the extremities of a mold (of any number of pieces) and air pressure is added to form a full-sized object. While there are many kinds of contact molding, the Unit 10 fragment was most likely formed either through dip-molding or two-piece molding. In dip-molding, the glass is lowered into an open-topped mold (for the base) and the top and neck of the bottle are free-formed. Dip-molding leaves no seams and assures regulated body symmetry, but not necessarily height. If the straight edge of the Unit 10 fragment is indeed a seam, it was most likely shaped with a two-piece mold. In two-piece molding, the entire bottle is formed together in a mold which closes via a hinge on one side. This produces more standardized bottles and leaves distinctive molding seams on either side. In terms of dating, both techniques began in the mid-18th century; however, two-piece molding became most popular, experiencing a rise in the mid-19th century before being largely replaced by other techniques in the early 20th century.[7]

Figure 5. (Right to Left) Base of a Case Gin; Case Gin Bottle; Tall Square Short-Necked Spirit Bottle.[8]

[7] A) Ibid. Footnote 1. 22-28
B) Ibid. Footnote 6.
[8] Lindsey, Bill. "Bottle Types/Diagnostic Shapes: Liquors/Spirits Bottles." *Historic Glass Bottle Identification & Information Website*. U.S. Department of Interior Bureau of Land Management, n.d. Web. 12 Dec. 2010. <http://www.sha.org/bottle/liquor.htm#Square/Rectangular>.

The combination of a square, black glass, molded bottle allows for an even more specific identification. The most common bottles that fit this description in the date range are either alcohol or medicine bottles. Case Gin bottles are a particularly widespread variety which have a square base and are usually made of black olive glass. Case Gin bottles also have a distinctive taper from the shoulder to the neck, though the Unit 10 fragment gives no indication as to whether it is tapered. Another possible alcohol bottle is the Tall Square Short-Necked Spirit bottle. It also has a square base as is usually made with a two-piece mold and black olive glass. Finally, there are medicine bottles which imitate these styles, though they are far less common.[9]

In the end, we are left with a fairly large date range (mid-18th century to early 20th century) and a variety of possible bottle types. Nonetheless, the Unit 10 fragment provides insight into social patterns prevalent at the excavation site. Because Unit 10 is so close to the foundation of the Hale-Ives House, it is reasonable to assume that this bottle may have belonged to a member of the family or a servant. Either way, it is still remarkable that a piece of glass only a few inches wide can tell us so much about the past. As always, further excavation is necessary as only additional evidence can tell us the full story.

[9] Ibid. Footnote 8.

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Narragansett Beer Bottle Cap
Nick Bartos

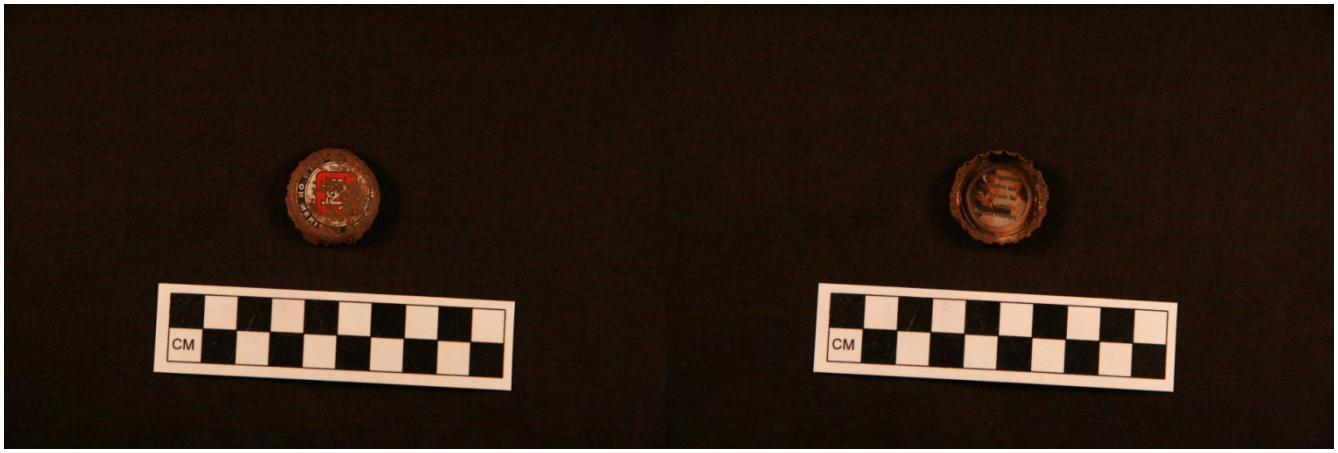

Figure 1. Top of Bottle Cap.

Figure 2. Bottom of Bottle Cap.

This bottle cap was one of many recovered in the 2010 John Brown House excavations. It was found near the top of JBH 66, the first context in Unit 11. The diameter of the top is 32 millimeters, the inside diameter is 26 millimeters, and the height is 6 millimeters. The bottle cap is made of metal and has a plastic lining on the inside. Clearly factory-made, the 21 teeth on the bottom of the cap indicate that it is a "crown cork." The crown cork is the most common type of bottle cap used to contain beverages and other liquids even under high pressure.[1] The crown cork is not resealable and features a skirt with a raised angular rib that fits against grooves on the top of the actual bottle. It was first patented in 1892 by William Painter, who later went on to found the Crown Cork & Seal Company in Baltimore. At first, the crown cork was only used to seal alcoholic beverages; however, with the onset of prohibition in the early twentieth century, its use was expanded to soft drinks. Other than minor size adjustments, the crown cork has remained relatively standardized since its invention.[2]

Although very rusty, this particular crown cork still has a very discernable logo on the top. The "NBC" letters intertwined stand for Narragansett Brewing Company. Founded in 1888 by John H. Fehlberg, Augustus F. Borchandt, Herman G. Possner, George M. Gerhard, Constand A. Moeller, and

[1]McManus, Charles E. "Crown Cap and Method of Making." U.S. Patent Number 2063454, August 4, 1932.
[2] "Crown History." *Crown Holdings, Inc. - about Crown*, n.d. Web. 11 Dec. 2010. <http://www.crowncork.com/about/about_history.php>.

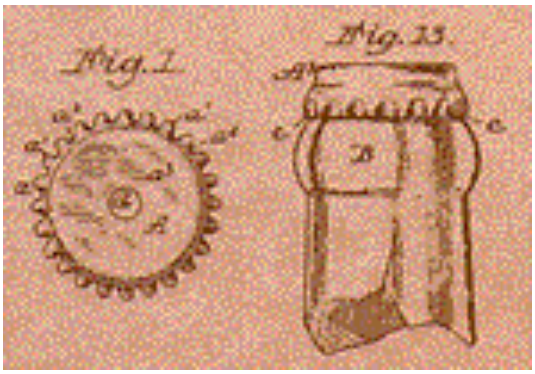

Figure 3. Original Crown Cork.[3]

Jacob Wirth, the Narragansett Brewing Company first started in Cranston, Rhode Island and has long been a New England staple. By 1914, Narragansett was the largest lager beer company in the region. Enjoying several decades of success, in 1944, Narragansett was still the largest selling beer in New England, the only remaining brewer in Rhode Island, and the official sponsor of the Boston Braves (later the Boston Red Sox). In more recent times, however, Narragansett has failed to keep up with increasing national competition. Narragansett completely ceased production in 1983, only to be reopened by a Mark Hellendrung and a group of investors in 2005. The company now occupies a very narrow segment of the market and is primarily sold in New England.[4]

There are five types of Narragansett beer: the "Lager," "Light," "Fest," "Porter," and "Bock." Each variety has its own logo and color set. The faint traces of green and red on the bottle cap in Unit 11 indicate that it is a "Narragansett Lager." Also, in addition to the "NBC" logo, the top of the Unit 11 bottle cap says "Made on Honor" and "Sold on Merit." This is one of the official advertising slogans and according to the company, summarizes Narragansett's major values:

> These words are emblematic of a way of doing business that the Narragansett Brewing Company has lived by for over a century. "Made on Honor" means that we use nothing but the finest ingredients in our beer. "Sold on Merit" embodies our belief that Narragansett is of the highest quality, which is why we stand behind every six-pack we sell.[5]

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[3] Ibid.

[4] *Narragansett Beer History*. Narragansett Brewing Company, n.d. Web. 11 Dec. 2010. <http://www.narragansettbeer.com/history>.

[5] *Narragansett: Made on Honor*. Narragansett Brewing Company, n.d. Web. 11 Dec. 2010. <http://soldonmerit.com/index.php>.

The bottle cap design featuring both the "NBC" logo and the "Made on Honor" and "Sold on Merit" slogan is the most recent. Overall, the Narragansett Brewing Company has changed its logo and packaging multiple times. When the company reopened in 2005, it introduced new packaging including the "NBC" logo on the top of its bottle caps. Thus, on the basis of the top logo, this bottle cap would have been produced after 2005.[6]

However, an inscription on the bottom of the bottle cap allows for an even narrower date range. The inscription says, "Narragansett salutes our veterans for their service to our country." In general, writing on the bottom of bottle caps is a fairly common practice and is a way for companies to hold promotions or to make their products more unique. When Narragansett first released their newest packaging in 2005, the bottle caps had no inscriptions on the bottom. It wasn't until a year later when Narragansett finally began adding messages.[7] Therefore, the TPQ (*Terminus post quem*) of the Unit 11 bottle cap is 2006. Currently, Narragansett bottle caps feature both inscriptions and pictograph puzzles known as "rebus puzzles."[8]

Figure 4. Current "Narragansett Lager" Bottle.[9]

The terms of the actual deposit of this bottle cap remain unknown. Most likely, there is no relationship between the bottle cap and any of the owners or museum staff members at the John Brown House. Given the proximity of Unit 11 to Brown University and the Rhode Island School of Design, the bottle cap was probably discarded by a college student, though it could have also been left by a Providence resident. Nonetheless, even though it is a modern artifact, the Narragansett bottle cap provides information about beverage preferences and land use as a whole.

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[6] Turley, Hazel B. 2007. *Images of America: Narragansett Brewing Company*. Charleston: Arcadia Publishing.

[7] Crooks, Jim, Vice President of Marketing for Narragansett Brewing Company. Telephone Interview. 20 November 2010.

[8] *2010 Narragansett Rebus Puzzles!* Narragansett Brewing Company, n.d. Web. 11 Dec. 2010. <http://www.narragansettbeer.com/2010/03/2010-narragansett-rebus-puzzles>.

[9] Chesto, Jon. *New England Could Get a 'Gansett Brewery Again*. Mass. Market, n.d. Web. 11 Dec. 2010. <http://blogs.wickedlocal.com/massmarkets/2009/06/25/ new-england-could-get-a-gansett-brewery-again/>.

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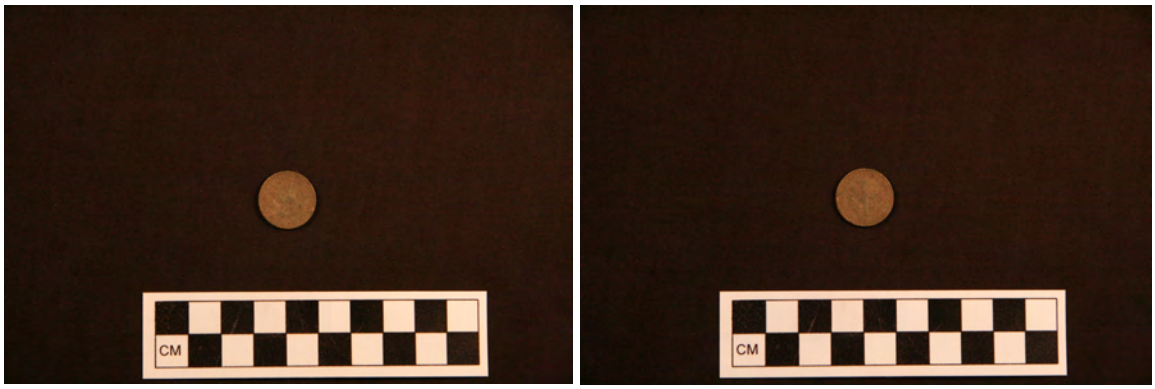
1987 Roosevelt Dime
Allison Iarocci



One of the most modern artifacts at JBH unit 10 was a Dime from 1987. The Dime was found on September 20, 2010 in context 65 in the western portion of the unit. The Dime is the same variety that began in 1946 and is in circulation today, known as the Roosevelt Head Dime.[1] The coin measures to the standardized size for the diameter thickness according to the US Mint.[2] The size of Roosevelt Dime is the smallest of all United States coins in circulation. It is named after the portrait of Franklin D. Roosevelt on the obverse side of the coin. Coins, especially dated ones, can serve as key tools in the dating of a historic site.

President George Washington passed the Coinage Act on April 2, 1792, which established a specific coinage system and established a mint in the United States.[3] The coins were predominantly gold, silver or copper. There were ten different denominations of coins, including the 'Dismes' and 'Half Dismes'.[3] The word Disme is the French word for tithe, a tenth. The Disme was to be 1/10th of the silver weight and value of a unit or dollar established at the time.[4]The composition of the Disme was 89.24 % silver and 10.76 percent copper. In 1792, a limited number of Dismes were minted but never circulated. The first dimes minted for circulation did not appear until 1796, due to a lack of demand for the coin and problems with production at the United States Mint.[5]

There have been many variations of the dime, including, Draped Bust (1796-1807), the Capped Bust (1809-1837), the Seated Liberty (1837-1891), the Barber (1892-1916), the Winged Liberty Head (1916-1945) and finally the Roosevelt Dime.[4] The average number of years each dime is in circulation is around thirty-five and the current version of the the dime is the Roosevelt Dime has been in circulation for the longest amount of time.

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[1] http://www.coinfacts.com/dimes/roosevelt_dimes.html
[2] http://www.usmint.gov/about_the_mint/?flash=yes&action=coin_specifications
[3] Hepburn (1967) page 43
[4] http://www.coin-collecting-guide-for-beginners.com/us-dimes.html
[5] http://en.wikipedia.org/wiki/Dime_(United_States_coin)#Design_history

President Franklin D. Roosevelt, known as FDR, was chosen for the image on the dime shortly after his death in 1945. The dime coin was chosen to pay homage to his work with the National Foundation for Infantile Paralysis, which is today known as the March of the Dimes. This group worked to help victims of polio, a disease that put the President in a wheelchair, and find a cure. The slogan for this group encouraged people to donate a dime to the cause. The Roosevelt Dime was released on his 64th birthday, January 30, 1946, the same day the March of the Dime fundraiser began.[1]

The design of this dime, which is the pattern that appears upon the Dime from unit 10, was designed by "Chief Engraver, John R. Sinnock, whose initials "JS" appear below the tip of Roosevelt's bust on the obverse of the coin."[6] The design on the Dime at JBH unit 10 is difficult to see as it has turned a light green color from oxidation. However, the design of the dime on the obverse is the face of FDR with the word 'LIBERTY' in front of his face, the words 'IN GOD WE TRUST' below his chin, and 'P 1987' below his neck on the right. The 'P' indicates that the coin was made at the mint in Philadelphia, which only began placing the 'P' on the dime in 1980.[5]

The reverse shows the words '-UNITED STATES OF AMERICA- ONE DIME' around the edge, with the words 'E-PLURIBUSUNUM' through the main design. The design in the center includes an olive branch on the left, symbolizing peace, a torch in the center, symbolizing liberty, and an oak branch, symbolizing victory.[4] The design of a coin like this, with symbols, give an archaeologist an idea of what was valued and symbolic in a society.

The composition of the earliest Roosevelt Dime was 90% silver and 10% copper, but with the passing of the Coinage Act of 1965, the composition changed to copper which is "sandwiched" between two layers of an alloy that is 75% copper and 25% nickel, completely removing any silver from the coin.[4] Although, in 1992 the U.S. Mint began releasing yearly collections of 90% silver coins including the Dime. The dime from Unit 10 must be one of the "sandwiched" coins, as the exposure to water and air has caused the coin to oxidize to the light muddy color it is today.

Obverse of Roosevelt Dime from 2005[5]

The Unit 10 Dime is only one in 762,709,481 dimes exactly like it in circulation today, which makes it sound unimportant, however that is not true.[4] It helps to serve as a dating tool, as it has a known date printed on it, allowing 1987 to be a terminus post quem (TPQ), the date after which.[7] This suggests that we know that the context in which the Dime was found is at least twenty-three years old. Other items found in the same context were pieces of glass, pottery and a nail. While it is not the oldest of these, because it has a date, we have to use that as the base date for the context. We already know this artifact's function without the TPQ, but even with the TPQ it is

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[6] http://www.coinfacts.com/dimes/roosevelt_dimes.html
[7] Deetz (1996) page 24

impossible to say exactly when after 1987 the object arrived at the site or who put it there and why. Although, it is certain that it was not in use by the Brown or the Ives families.

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Cut Nail

Allison Iarocci

As Unit 10 learned, nails are often the most common artifacts found on historical sites.[1]The nail pictured here is one of the 178 cut nails found at JBH Unit 10. This particular nail was found in context 68, which contained 134 other cut nails and only 17 wire nails. The nail measures to 76.2mm in length, and each side is square coming to a point at the end. The top is square also, each side length of the top is around 5mm. The nail has rusted over and is an ocherous, brown, rust color.

Until around the end of the 18th century, the type of nails being used were handwrought. This was the kind that had been around since the invention of nails in ancient times.[2] The shape of the head and the body continued to develop, although for handwrought nails the "rose head" was the most common type. In about 1790 the first cut nails were produced in America. This nail, like other cut nails, was made by having a machine slice a sheet of iron, though at firs the heads were shaped by hand, they were machine made by 1815.[1] This was a great achievement for the United States, who surpassed England in production volume.[3] Previously, it had been nearly impossible to import nails, therefore families usually had to make a small nail manufacturing setup in their homes near the hearth.[4] The majority of the cut nail production was happening in the industrial East part of the United States.[3] These new nails were very valuable, and some families would burn their homes in order to save the nails when they were moving. They were very popular, even President Jefferson made sure he was one of the first to purchase the newly invented nail-cutting machine in 1796, so he could produce

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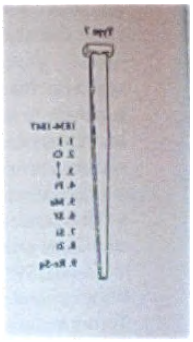
[1] Hume (1991) page 253
[2] Loveday (1983) page 3
[3] Condit (1982) page 44
[4] http://www.fourshee.com/history_of_nails.htm

his own nails. Cut nails could be manufactured much faster than hand-forged nails. As the process was mechanized, the cost per nail was dropped. However, cut nail factories employed operators and attendants for each machine so the process was still labor-intensive and the noise in those mills was deafening.[5]The cut nail remained popular and the dominant type of nail until the early 1900's, when the wire nail, a rounded nail, became the standard nail.[4] Today, cut nails are still produced, but are primarily used for renovations or to fasten hardwood flooring.[6]

The cut nail is also known as a square nail because of the roughly rectangular cross section.[7] The flat rectangular sides that taper to the end characterize the type.. The two sides are parallel because they represent the thickness of the plate they were sheared from.[5] One of the way that cut nails are dated is by looking at the burring, the grooves the cutting machine leaves, of the cutting angle on these parallel sides.[1] The cut nails from 1790-1820 were sliced so that there were two diagonal corners, burred out in opposite directions. By 1830, the burring was in the same direction at both ends of one face. By 1830, the fiber was changed to run lengthwise opposed to the way they were before which was against the length, making the nails very weak. There is no difference between the cut nails produced after 1830 and the ones produced now. However, using burring, as an indicator for the nail from Unit 10 is impossible as it has corroded and rusted to the point where the burring has disappeared. The best way to date the nail from Unit 10 is a visual analysis of its shape. The nail appears to make type 7 according to the Wells 1998 chart, which dates the nail to 1834-1847.[8]


Type 7

While the corroding of the metal makes it difficult to date the nail, it does help to indicate what sort of metal the nail is made out of. The color and intense corrosion indicates the nail is made of iron. Iron was the most common metal to be introduced into America from Europe.[8] Unit ten saw lots of pieces of iron in various sizes through out context 68 and 73. All of the nails found appear to be Iron as well. All of them were very corroded, probably due to the very wet nature of the soil of the area.

The area of Unit 10 appears to have been some sort of trash or repository. The nails found there may have either been discarded individually or as part of larger structure, such as window frame, that was discarded. There are significantly more cut nails than wire nails, which suggests that the trash pit could be dated to sometime right around the switch to wire nails in 1900's. It also seems likely that the nail could be related to the house that once stood near the site, the Robert Hale Ives House, which was constructed in the mid 1800's and demolished sometime between 1921-1926. The

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[5] http://www.appaltree.net/aba/nails.htm
[6] http://www.uvm.edu/~histpres/203/nails.html
[7] http://en.wikipedia.org/wiki/Nail_(fastener)
[8] Ewen (2003) page 57

house was probably primarily constructed with cut nails, and maybe a few wire nails if they did any additions or repairs after 1910. It is impossible to say exactly what this particular nail was used for, but it is nearly certain that it is related to the Hale Ives family and their home.

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Clay Tobacco Pipe Fragment
Allison Iarocci

Three pieces of clay tobacco pipes were found at JBH Unit 10 in context 68, in addition to three pieces found at site 12 in context 69. The pieces at Unit 10 were found on October 18, 2010 in context 68, the second at the site, which contained other artifacts such as large pieces of iron, a perfume bottle, nails, brick, mortar and glass. The soil was very rocky and varied greatly in color. All of the pieces at Unit 12 were pieces of stem that date to an earlier period . At Unit 10, two of the pieces are small

segments of the stem, sometimes known as the shank[1] and the other fragment is the joint between the stem and the bowl, which is comprised of a little section of four parts; the base of the bowl, the heel, also known as the spur, the step and the largest portion, which is part of the stem. This study will focus on this fragment, because it is the first of this particular section of pipe with a maker's mark on the spur found at the JBH. In addition, it is important to study pipe fragments as they are well establish, key elements in the dating of sites.

The use of smoking pipes was a staple activity of most Western industrial societies by the late 16th century after the introduction of tobacco in England in about 1558. This led to the rapid development of the smoking pipe industry. The general form

[1] Ayto (1979) page 2

of clay pipes has remained much the same throughout time with notable changes in the style, bowl size, length of stem and bore width. Some of these changes were in consequence of changing fashion, the price and availability of tobacco, while others are related to the increasing skill of the papermakers and mould makers. Bowl size usually related to the price of tobacco at the time[2]. These changes have been documented and archaeologists have found that there is a relationship between certain aspects of a pipe, such as bore width or stem length, which correlates to the date of the pipe's production, allowing archaeologists to date almost every pipe within about thirty years. The most famous of these method's is the one that was founded by archaeologist Jean Harrington between diameter of the bore of the pipestem and the age of the overall pipe, being that the older the pipe the large the diameter.[3] This was particularly helpful as stem fragments are the most common part to find.

The popularity of smoking is evidenced by the vast quantity of pieces of pipes found at archaeological sites in both England and in the United States. The reason pipe fragments are recovered so frequently is because of the "cheap, fragile and expendable nature of clay pipes," coupled with the fact that pipes were generally disposed in the vicinity of the area where they were used.[4] Also, when an archaeologist has a large collection of pipes, using distribution the average of the dates of production can help to get a very accurate date for the site's use.[5] Also, looking at the amounts and types of

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[2] Ayto (1979) page 4
[3] Deetz (1996) page 27
[4] Bradley (2000) page 104
[5] Deetz (1996) page 29

pipe thrown away and where they were thrown away can lead to insights about the daily life and land use of those who inhabited the site.

The fragment from the JBH Unit 10 appears to be made of clay which was once erroneously known as" kaolin," a white, ball clay. Clay was an ideal medium for making pipes due to its light, porous properties along with its malleability prior to firing.[6] The clay could be molded with a pattern, although most often left plain. Sometimes the pipes were polished or finished with a glaze.[6] The pieces found in Unit 10 are all of different shades of tan; one of the stem segments is significantly darker than the other two pieces. This indicates that the pieces found were most likely not from the same pipe, which indicates that there was probably frequent use of different types of pipes at the JBH, but all of the refuse went to the same place.

What is most significant about the joint fragment is that there appears to be a maker's mark on the spur. The picture to the right is the mark. A maker's mark is a design in the mold that is placed on the bowl, spur (heel), or stem to show the person or company who manufactured it. An identifiable maker's mark can provide the most dependable means of pipe dating, if one carefully figures out who used what initials, during what time period.[7] The mark on the JBH piece we have appears to be a raised, 'M' like shape on the left side of the spur. It appears that some of the pattern has chipped off. The standardized practice of placing

[6] Bradley (2000) page 108
[7] Ayoto (1979) page 27

raised maker's initials on spur began in the early 18th century after the development of the spur at around the same time.[8] Typically the first name or initial of the first name was placed on the left side and the last name on the right.[7]This practice continued into the 20th century. In the case of the JBH pipe's mark, there is not enough information due to the fact only part of the mark survives, Also, it is often very difficult to match marks with patterns associated with makers due to the popularity of replicating old marks in the late 18th and 19th centuries.[8] Also, due to the English immigrants to the Netherlands in the 17th century the differences in the two are subtle. The main difference between the two is the Dutch pipes exhibit a finer finish and a glossy, well-polished surface.[8]The JBH piece is not finely finish, which further indicates that it is most likely of an English origin.

What can help to narrow down the search for the maker and the date of this piece is that is has part of the stem attached, therefore the bore diameter can be measured. The most common method of measuring the bore diameter is to insert a drill bit, which increases in increments of sixty-fourths, to find the best fit.[9] The earliest pipes from the 1600's had bore diameters of 9/64-inch, and decreased to 4/64-inch by the 1800's. The reduction in diameter effectively reduced the " amount of matter transmitted through the stem to the smoker's mouth." This meant that as time progressed, and the price of tobacco fell, smoking became a leisure activity. This is because more tobacco

[8] Bradley (2000) page 116
[9] Ewens (2003) page 100

stem fragment with bore visible

could be used and smoked slower through the narrow bore. [10] The JBH Unit 10 context 68 pieces all measure out to be 5/64. This means that there is a 72% chance that these fragments were produced between 1710 and 1750.[9] However, this method is only applicable for pipes manufactured in England.[10]

The location of Unit 10 suggests that the pipe fragment and the pieces of stem would be associated with the Robert Hale Ives house, which is no longer standing. However, the pipe is dated to around a hundred years before the actual construction of the house in 1857. Therefore, the area of Unit 10 must have been some sort of trash pit or repository for either the Brown family or nearby residents. The JBH was not built until 1786, by John Brown but was purchased from his brother Nicholas in 1769. Therefore the pipe was probably related to people in association with Nicholas, as pipes were most often immediately discarded after being broken. [11] Therefore, this small piece of clay alone has helped to illuminate the history of Unit 10.

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[10] Deetz (1996) page 27-28
[11] Thelemaque (2009) page 7

Ewen, Charles Robin. *Artifacts* . Walnut Creek, CA: AltaMira Press, 2003.

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Hinge

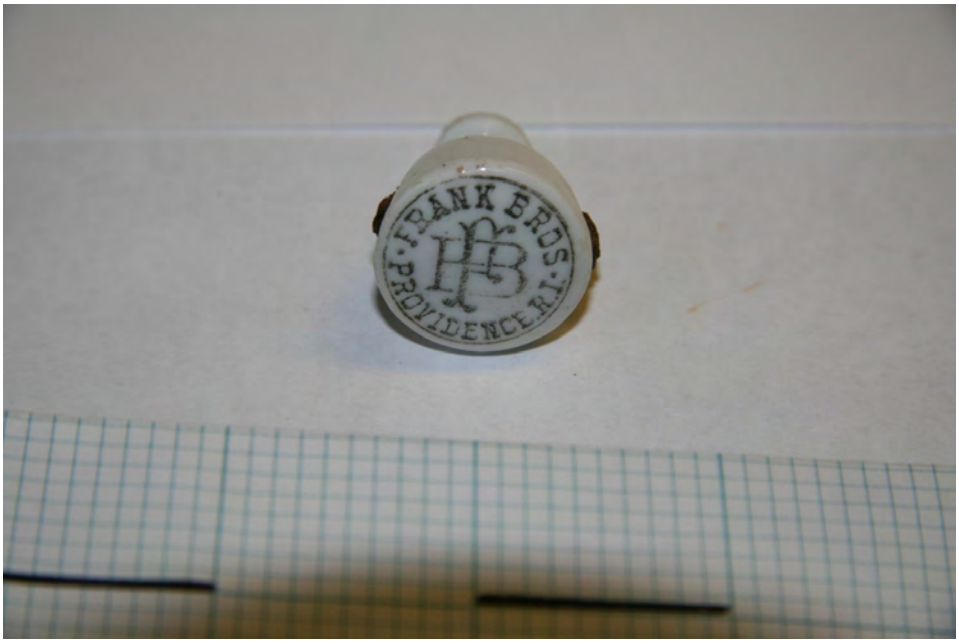
Jenneth Igbokwe

With a length of approximately 5 centimeters, this object appears to be a nail within some sort of hinge. Found in context 72, this artifact was probably a part of a larger structure. Though Unit 11 never figured out the significance of the walls, it is very likely that this rusted iron artifact may have belonged to a cabinet. This circular shape also appears to serve more an aesthetic rather than functional purpose.

As one of the earth's most common element, iron is produced in abundance. It usually comes in the forms of wrought iron, cast iron, and steel. Fresh iron surfaces are a silvery-gray, but when iron oxidizes it creates rust. This artifact is very rusty, and though difficult to see, one

can make out the head of the nail on the left side and the point on the right. The picture below provides an even better view of this.

Bottle Stopper
Jenneth Igbokwe



A bottle stopper, also known as a bung, would have been used mostly for storage purposes. Once a cork is removed, it is difficult is not impossible to stick it back in. This would have simplified the process. Also, the use of a bottle stopper indicates that whatever was in the bottle was of relative importance. If the contents were wine, then the stopper would have kept the oxygen inside.

The stopper is placed on the neck of the bottle, and usually comes in a conical shape. It is clear that this bottle stopper goes back at least a century. Bottle stoppers nowadays, even as early as the 1960s, still take on the conical shape but are much longer, so that it is harder for the stopper to fall out or be accidentally knocked over. Today, there is a sizeable market for these handy objects. France, the greatest importer of these, imports about 1,213,517 a year (Parker). They are followed by the United States, Canada, and the United Kingdom (Parker).

Wine stoppers vary in shapes, sizes, and materials. The three typical types are the cork wine stopper, rubber wine stopper, and plastic wine stopper (Bungs). The top part can be made from plastic, wood, or even precious metals and crystals. However the bottom part of the stoppers are primarily made of the above 3 typical materials, and newer versions of wine stoppers are made to expand in the wine glass to ensure a tighter seal (Bungs).

A bung needs to be partially inserted into the container and will act as a seal. It generally requires friction against the wall of the container to remain in place (Bungs). Generally a bung will either keep something in or keep something out of a container (Bungs).

This wine stopper came from the JBH Museum. It was retrieved during the construction of the geothermal wells, and appears to be incasing cork. The porcelain is of an off-white color with black print on it. It stands at 2.5 cm and has a diameter of 1 cm. The Frank Bros of Providence, RI appear to have some sort of connection to The Little Rhody Bottle Club – a club for antique bottle collectors in the area. The company, itself does not have its own web address, but they are located at 171 - 173 Main St. The bottom of the stopper reads: Pat'd Hutter. Hutter porcelain was patented on February 2, 1893.


PAT'D
SHUTTER

Ceramic Tile

Jenneth Igbokwe

Uncovered in context 72, this ceramic tile is one of nearly 200 from the collection. It is approximately 2.5 centimeters by 2.4 – nearly a perfect square. The tile was found in between the walls, features two and four of Unit 11. It is a chalky white tile that was once presumably attached to mortar to hold it in place. This is believed so, because of the several other mosaic tiles that were uncovered with mortar still holding them together.

When Marsden Perry bought the John Brown House in 1901, he installed several bathrooms throughout the house, so it is likely that this tile has associations with him, as well.

Ceramic tiles are inexpensive and can be used just about anywhere. They are relatively easy to install, so the room that they may have been installed for might have served as a bathroom or kitchen.

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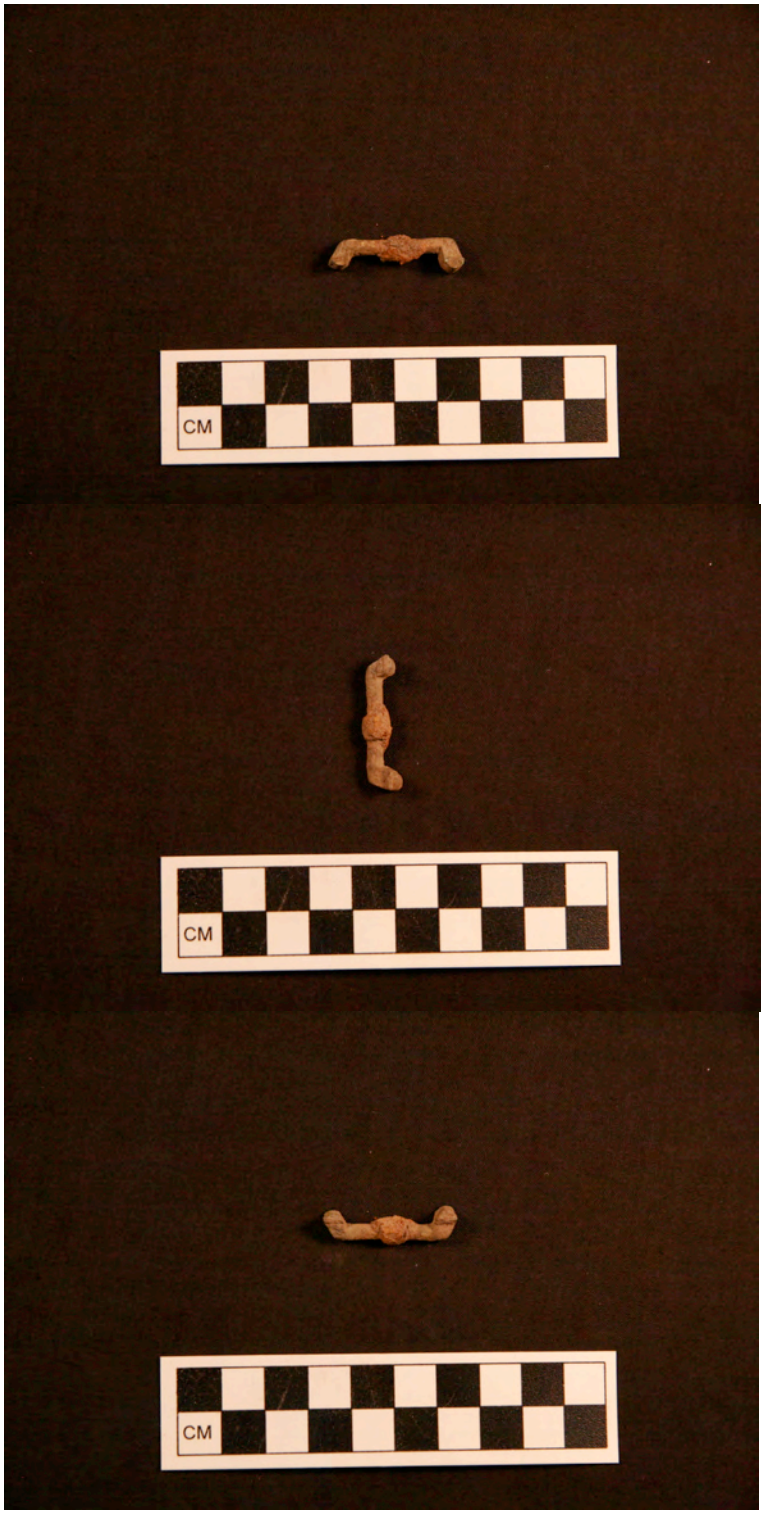
Copper Buckle Fragment
Ben Jones



This object was found in Unit 10, JBH context 73. It is a small piece of metal 3.05cm long, including an almost 90-degree bend on both ends. The center span, the cylinder of metal between the ends measures 2.1cm. These ends are 0.6cm long, and appear somewhat misshapen; ridges of metal with rough edges on the same side on both ends give the impression that both prongs connected to a larger piece that has been broken off. Near the center of the middle span, there is an area where the tube widens slightly, from 0.3cm in diameter to 0.7cm. Interestingly, there is a color change corresponding to this widening. The color variation does not appear in the above pictures, but the entire piece, with the exception of the central bulge, has very little accumulated rust-like oxidization, leaving it more or less smooth. These sections of the metal all have a greenish cast emblematic of tarnished copper. The central bulge, however, has a great deal of porous corroded material encrusting it, and has a distinctly orange color, the same color and type of oxidation characteristic of iron, and seen on the multitude of iron artifacts from the same unit. This gives the impression of one side broken off a square or rectangular copper buckle, with an iron band or attachment affixed to its center that has since rusted away and left a chuck of oxidized iron in the center of the copper fragment.

This all coincides with what is known of the structure of 18th and 19th century buckles. Buckles were constructed of two pieces, the frame and the chape. The frame is the usually rectangular piece that sits on top of the leather strap when the buckle is closed. It usually contains holes for the pins that hold the chape, the pin holding the

latch mechanism that would secure the strap of the garment.[1] These parts could be made out of a variety of materials. Though the chape was almost always made of brass or steel, the frame could be constructed out of a number of different metals depending on price. The most expensive buckles were made of silver, and worn by the most genteel. The lower classes wore pewter or simple iron buckles. These were not only less expensive metals, but ones much harder to cast into an intricate shape, meaning that most iron buckles were rather rough, square affairs. Between these two extremes, however, there was a wide market for copper buckles, which could be embellished, and even plated to give the appearance of silver, while remaining more practical and cost-effective.[2]

Given this outline, it seems likely that this object is a piece of a copper buckle frame. The shape bends in two 90-degree angles, suggesting that the complete side is one edge of a square or rectangular whole, the usual shape for buckle frames. The copper construction, too, is appropriate for such a frame. In the construction of a buckle, the hook elements of the chape were mounted on a bar that ran straight across the center of the frame, with pins through the frame on opposite sides holding the chape in place. This frame fragment may be from one of the sides through which the chape pin was driven. In buckle construction throughout the 1700s, buckles were produced with frames that simply expanded in the middle of two sides to allow for holes

[1] Carolyn L. White, *American Artifacts of Personal Adornment, 1680-1820* (Lanham: Altamira, 2005), 33.
[2] Ivor Noël Hume, *Artifacts of Colonial America* (Philadelphia: University of Pennsylvania Press, 1969), 86.

to be made to hold the pin.[3] It is possible that this is a buckle of that style; the central bulge is there, and it is possible that corrosion is hiding the pinhole. However, in the late 1700s, a style of buckle was produced that, rather than simply having a hole drilled through an expanded frame, had a metal flange attached to the frame with the pinhole in it. If this were once a feature of this buckle, it would explain several elements of this object. If there had been an iron or steel flange attached to the central copper tube, which rusted away after the broken piece of the buckle was discarded, it would account for the lack of a pinhole through the recovered object itself, the bulge around the middle (extra metal mass remaining from the rusted flange once wrapped around the copper center), and the presence of oxidized iron, rather than purely copper. This explanation, though by no means concrete, seems to fit all the facts, and if true, provides a narrower date range for this artifact.

Though buckles are a fairly ubiquitous find, we can make some statements about general trends. Buckles are found in England for a wider range of time than in America, and throughout most of the 18th century, though some manufacture took place in America, buckles are largely an import from the metalworkers of Britain.[4] An approximate date range for shoe buckles in America would be around 1700 to 1815.[5] If this buckle truly did have the flange-type pin attachment, it would likely come much later in that date range. It is difficult to pin down the exact use of the buckle, as they

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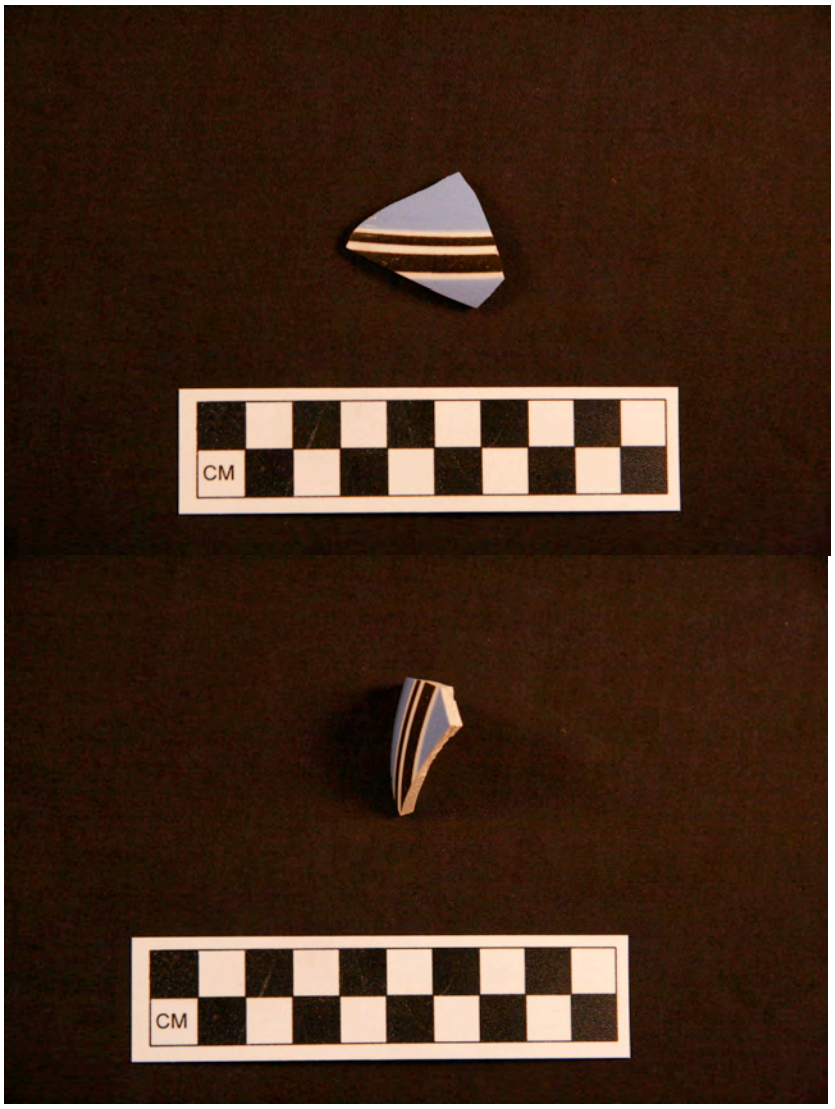
[3] Carolyn L. White, *American Artifacts of Personal Adornment, 1680-1820* (Lanham: Altamira, 2005), 34.
[4] Carolyn L. White, *American Artifacts of Personal Adornment, 1680-1820* (Lanham: Altamira, 2005), 35.
[5] Ivor Noël Hume, *Artifacts of Colonial America* (Philadelphia: University of Pennsylvania Press, 1969), 86.

came in all shapes, and though knee and hat buckles were usually smaller than shoe buckles, sizes varied widely enough that it is nearly impossible to distinguish adults' from children's buckles, let alone tell a buckle's function, though shoe buckles are by far the most common.[6]

It is likely then, that this is a fragment of a copper shoe buckle manufactured in England in the latter part of the 18th century or the first decade of the 19th. It has a buildup of rust from the original iron or steel chape pin, which has since degraded. Its copper construction gives it a fairly wide range for ownership; it might have belonged to a servant, though not a slave, or been one of the simpler buckles owned by a member of the Hale-Ives family.

[6] Carolyn L. White, *American Artifacts of Personal Adornment, 1680-1820* (Lanham: Altamira, 2005), 32.

Blue Banded Annular Ware
Ben Jones



This sherd was found in Unit 10, JBH context 68. It is a piece of pottery, 0.35cm thick, and 3.1cm on its longest side. The piece forms a rough trapezoid with a side 3cm long tapering to a parallel side 0.85cm long on the other side. There is a substantial but not overwhelming curve to the entire sherd. Inspection of an edge reveals a lightly pitted white surface characteristic of refined earthenware. The bright quality of the white surfaces shows us that this is a whiteware, rather than the off-white of a pearl- or creamware. This sherd is so small that it is difficult to get a read on the overall design this whiteware would have had, but the pattern that is there is still extremely useful. The black stripes on the colored side are raised very slightly, showing that this piece was adorned with a 'molded and painted' decorative technique.[7] This feature, coupled with the iconic banded design and hard slip glaze, shows that this sherd comes from a piece of banded annular ware.

[7] "Historical Archaeology" Florida Museum of Natural History. Accessed 12/10/10. http://www.flmnh.ufl.edu/histarch/gallery_types/glossary.asp

Annular wares were a mass produced slipware made in factories in both England and America.[8] The banded design common to this type of ware was pressed onto a wheel-thrown bowl and then painted, giving the stripes their characteristic raised appearance.[9] Even for a factory product, annular ware was exceedingly inexpensive – annular pearlwares were the second cheapest products of Staffordshire ceramics.[10] Because of this, annular wares are most commonly linked to slaves, and others of extremely low status.

Although it is hard to tell of what size vessel this sherd was once a part, the curvature of the fragment is too great for a flatter object, like a plate, but too little for a greatly curved object, like a teacup. The closest approximation that we could make by looking at the sherd was that it was once part of a deep, medium-sized bowl, along the lines of a sugar bowl or some article of comparable size and shape. This guess is borne out by what is known of banded annular ware; bowls, jugs, and mugs were the only vessels created in this style[11], and records of an excavation of an early 19th century plantation in Georgia that turned up a great deal of annular ware bowls, noted that the "diameters of bowls cluster at 4.6" and 6.0"".[12] This is about the right size for a small serving bowl, which, if this was indeed the property of a slave, is exactly how it would

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[8] "Historical Archaeology" Florida Museum of Natural History. Accessed 12/10/10. http://www.flmnh.ufl.edu/histarch/gallery_types/glossary.asp
[9] "Annular Ware" California State Parks. Accessed 12/12/10. http://www.parks.ca.gov/?page_id=22447
[10] James Deetz, *In Small Things Forgotten* (New York: Doubleday, 1996)
[11] "Historical Archaeology" Florida Museum of Natural History. Accessed 12/10/10. http://www.flmnh.ufl.edu/histarch/gallery_types/glossary.asp
[12] "History and Archaeology at the Robert Stafford Plantation" National Park Service. Accessed 12/12/10. http://www.nps.gov/seac/archy79.htm

have been used. Not having a great deal of ingredients to go around, slaves would eat primarily one-pot meals of stew that would be both cooked and served in a single bowl. It is likely that these cheap ceramic bowls served that function.[13] Until the early 1800s, slave bowls were largely stoneware, handmade by the slaves themselves. However, in the 19th century, annular ware bowls begin filling that function. James Deetz suggests that at this point "mass produced English pottery became inexpensive enough to be purchased in quantity for issue to slaves".[14]

This interpretation makes it much easier to date this find. There is already a window created by the first appearance of the pottery type; banded annular whitewares do not appear until 1830. However, the blue-banded style of annular ware was produced into the 20th century.[15] The trouble then becomes setting an upper limit on the range of times. If these were truly slave bowls, it might be reasonable to assume that this use was discontinued, at least in New England, in the years following the Civil War, which would give a date range of 1830-1865. However, it is not unreasonable to assume that even if slaves at the Hale-Ives House were released, the bowls would have been retained and perhaps repurposed as kitchenware for servants to use for food preparation. Indeed, it is possible that the bowls were originally obtained for this purpose, rather than to serve as slaves' stew pots. This would set the largest possible time frame at 1830-1923, ending with the demolition of the Hale-Ives House.

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[13] Herbert C. Covey and Dwight Eisnach, *What the Slaves Ate* (Santa Barbara: ABC-CLIO, 2009), 62.
[14] James Deetz, *In Small Things Forgotten* (New York: Doubleday, 1996)
[15]" Historical Archaeology" Florida Museum of Natural History. Accessed 12/10/10. http://www.flmnh.ufl.edu/histarch/gallery_types/glossary.asp

Unfortunately, for precise diagnostic purposes, this is a very common type of pottery. However, it is this very commonness that makes this piece interesting; it shows us the type of cooking vessels being used by house inhabitants other than the masters. Whether these were slaves who were given these bowls en masse by their masters, and using them as combination crock pot and serving bowl, or if they were purchased as a set of low-visibility kitchen vessels for food to be prepared in before it was served on the finer wares, these blue pattern banded annular wares were likely a dominant presence in the lower classes of the Hale-Ives household.

Iron Domestic Hardware
Ben Jones

This object was found in Unit 10, JBH context 68. It is a piece of iron, 22cm at the longest point, with two tines, one straight except for a horizontal bend at the end (assuming the notch points up), and the other tine curved downward to an ending angle of 90 degrees off the original. The tip of the lower tine is spatulate, with a hole and a 2.5cm nail going through it. This artifact has proven exceedingly difficult to identify, and even now I can only guess at its true purpose. However, it is possible to guess by looking at the piece in the context of its discovery and when compared to other pieces of domestic architecture.

It seems clear that this piece was meant to hold another object with a thin, probably flange- or bar-like attachment. The notch is clearly a tool-cut feature; something was meant to fit into it. This helps us get a sense of the orientation of the object. It seems unlikely that the notch would have faced downward, as it could not have supported a separate piece. If gravity is going to pull the rod or hook you are trying to hold straight down, the notch cannot be on the bottom. The same rule suggests that the notch should not be on the side. The incision is only 0.7cm at the

deepest point. It would be exceedingly difficult to hook anything with much weight at all into so shallow a groove if it were oriented horizontally. Therefore, it seems logical that the groove should go on top, and the nail on the bottom. If this screws into a wall, then, it provides a flat surface on top (with groove) that seems ideal for resting or hanging another object on.

In order to find parallels to this artifact, I examined door hardware from the period. There were no direct corollaries, but a lot of similar wrought iron work. The majority of ironwork in the 1800s was hand cast,[16] and a great number of ironworkers in the New England area make it seem likely that this artifact is of local manufacture by a blacksmith or other metalcrafter.[17] Ostentatious casting of ironwork went out of fashion around the end of the 1800s.[18] This piece is quite plain, which, if it follows similar trends to other household metalwork would place its earliest date in the 1800s and possibly the late 1800s. If it was originally part of the Hale-Ives House, which seems likely, given its location in Unit 10, its latest date would be the destruction of the house in 1923.

Many people have proposed many theories about the purpose this piece served. It is conspicuously similar to several parts of gate lock. The part that seems to

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[16] Peter J. Priess, *Historic Door Hardware*, (California: Society for Historical Archaeology, 2000), 46

[17] "Survey of Ironworks in Southeastern New England" Davistown Museum. Accessed 12/12/10. http://www.davistownmuseum.org/PDFs/Vol7_Appendix_I_SurveyOfIronworks.pdf

[18] Peter J. Priess, *Historic Door Hardware*, (California: Society for Historical Archaeology, 2000), 49.

approximate it most closely is the escutcheon-lift latch.[19] However, the escutcheon-lift is the "rarest of all American latches"[20] and still does not exactly follow the lines of this piece, so that would be a risky analysis at best. Though perhaps a fanciful idea, it seems far more likely to me that it is an artifice for hanging something out a window. Though it was found in a different context, a great deal of window hardware (made of the same type of iron) was uncovered in Unit 10. I feel it is much more likely that this piece is window hardware of some kind. It was found sticking in the wall of the unit, quite close to the Northwest corner where JHB context 73 was uncovered, with its trove of window pieces. Since it was found just at the edge of the unit, perhaps there is another just outside the excavated area? Two of this piece under a window on either side could well be a rest for a window flowerbox or other exterior shelving. The nail would go into the wall, and the top spar would provide both a rest for the object, and a groove for it to slot into to stabilize itself.

Theorizing aside, this is a piece of wrought iron domestic hardware, likely hand cast by a New England blacksmith between the latter portion of the 19th century and 1923. Many interesting theories can be conceived of beyond this point, but so far all remain conjecture.

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[19] Peter J. Priess, *Historic Door Hardware*, (California: Society for Historical Archaeology, 2000), 77.
[20] Peter J. Priess, *Historic Door Hardware*, (California: Society for Historical Archaeology, 2000), 77.

Window Hardware
Laura Leddy

Several artifacts were found distributed across the three contexts excavated in Unit 10 (contexts JBH 65, 68, and 73) that appear to have been parts of a window. These include a pulley and fragments of flat glass.

The presence of this particular type of pulley (context JBH 73), as well as documented trends and developments in architecture, would indicate this was a sash window. This was the most popular style through the eighteenth and nineteenth centuries. Sash windows are one of the definitive characteristics of the Georgian style (approx. 1714—mid 1830s, both Britain and America), as well as its counterpart Federalist style (America, approx. 1780—1840).[1] Records indicate that the Robert Hale Ives House, which stood near Unit 10 until 1923-24, was built sometime between 1834 and 1857.[2] Taking into account this timeframe for construction with respect to the date ranges for the architectural movements described above, as well as the window's popularity, it is reasonable to conjecture that sash windows were a feature on the Hale Ives House or one of its associated outbuildings.

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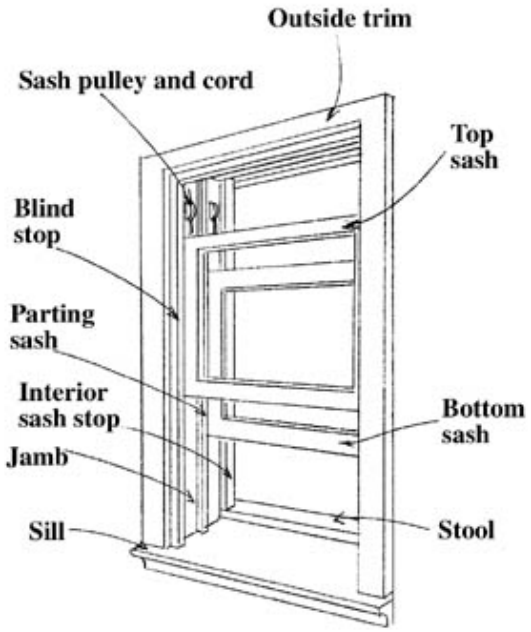
[1] Parissien, "Windows," 91.
[2] Thelemaque, "History of the John Brown House," 16.

Sash Window Mechanism

Sash windows are made of one or more moveable *sashes*, which can slide along tracks in the window frame. Vertical sliding is the more common mechanism, though horizontal ones do exist as well. Each sash is composed of one or more panes of glass, which are held in place by a framework of *muntins* (by definition, strips of metal or wood used to hold window glass in place). Except in the case of extremely tall windows (where multiple sashes may be used), windows of this type were commonly composed of two sashes. In earlier forms, the upper sash was fixed while bottom was moveable; these are *single-hung*. Soon, however, *double-hung* sash windows, in which both sashes are able to move, became widespread. Neither the windows nor the panes composing them were constructed to a standard size. However, a 6-over-6 or 8-over-8 structure (with each sash containing two rows of three panes or two rows of four panes, respectively) is characteristic of Georgian sash windows.[3]



As stated above, the window is constructed such that the sashes can slide vertically past each other, in grooves cut into the window frame. A cord or chain is attached on either side of each sash, and runs through a *pulley*. At the other end of the chain concealed within the window frame is a metal *counterweight* to facilitate operation. Steven Parissien offers:

> "In sophisticated houses rope sash cords were, from the 1820s onwards, replaced with tougher metal chains. More commonly, wooden sash

[3] Parissien, "Windows," 91-92.

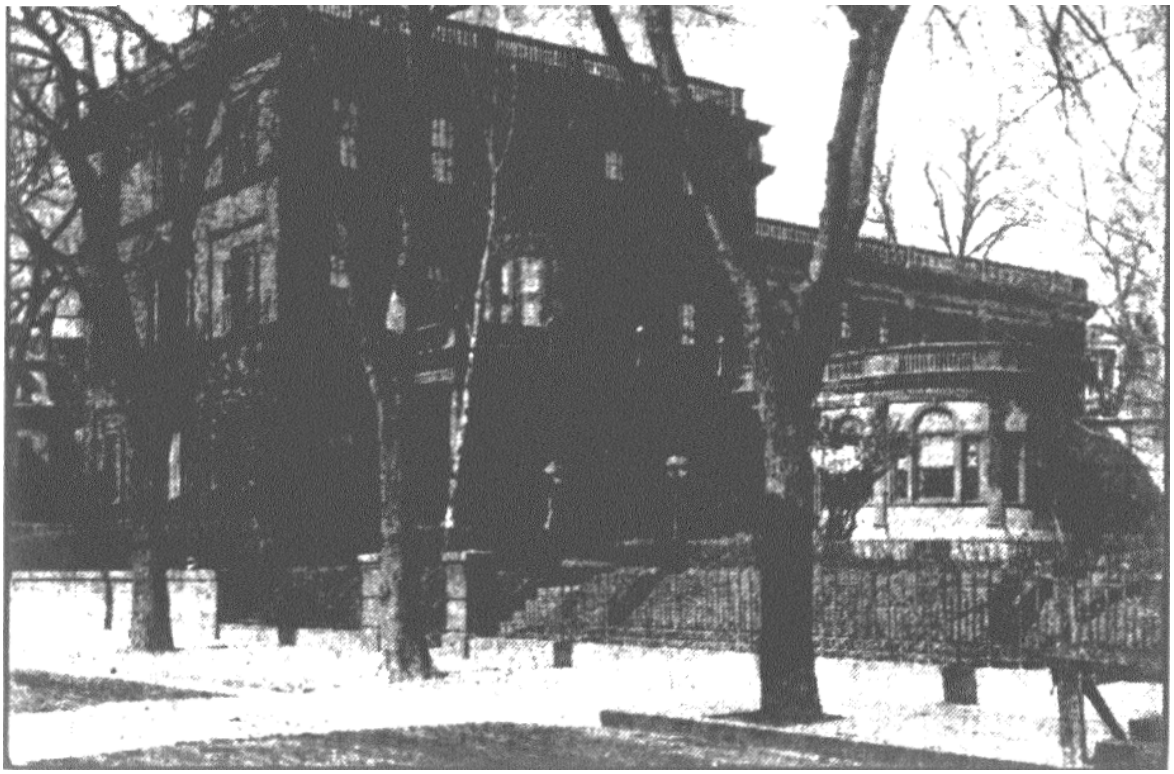
pulleys—the rule for windows until the 1760s—were discarded in favor of longer-lasting examples made of brass or cast iron."[4]

The pulley recovered from Unit 10 is (an albeit very rusted) cast iron model of this. Below is a side and top view of the pulley, and a modern sash pulley:

The window frames themselves were usually made of softwood, and traditional problems associated with this type of window stem from that. These include rot, distortion of the woodwork by weather and climate, rattling in the wind, and stickiness due to careless application of paint. Wooden window joinery and framing became increasingly hidden into the housework as a precaution against fire, and the building acts in 1709 and 1774 endeavored to mandate fire preventative construction.[5]

The photograph below is of the Robert Hale Ives House in 1923.[6] While the image is not of the best quality, it does appear that the house did have sash windows. The 6-over-6 pattern can be seen with relative clarity, on the top storey of the main part of the house.

[4] Parissien, "Windows," 97.
[5] "The History of the Box Sash Window."
[6] Providence Sunday Journal.



Origin of the Sash Window

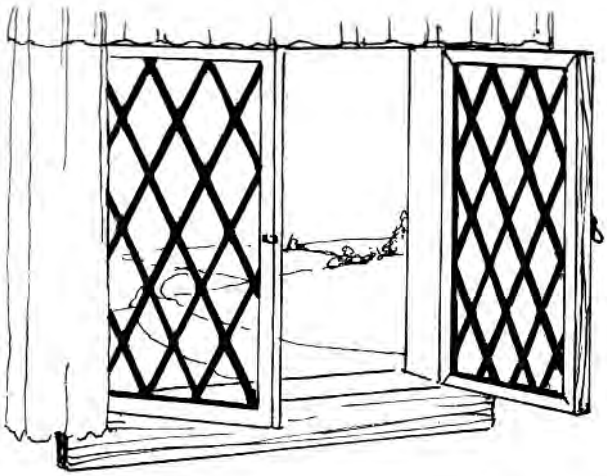
Counter-weighted box sash windows were first introduced into England and the colonies around 1670, and by 1720 had become ubiquitous in houses in both Britain and

America.[7] While it is unclear who invented this counter-weighted sash form that became so popular in the late 1600s, similar window mechanisms are evidenced in France and the Netherlands from earlier in the century.[8] However, the actual origin of the sash window is unknown, as there is evidence of windows employing versions of the sash window's characteristic sliding principle as early as the 13th century.[9]

Sash Windows Rise to Popularity

Sash windows rose to popularity in Britain for two principle reasons: practicality and celebrity support.

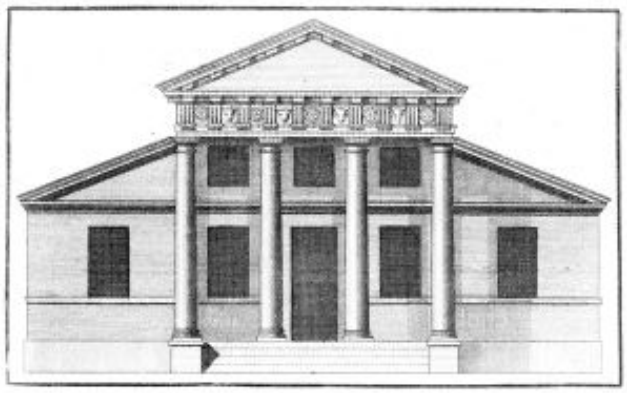
Before sash windows there were casement windows. In contrast to the sash window's vertical sliding mechanism, casement windows opened by swinging on a hinge. Due to relatively undeveloped window glass-making technologies and the practice of using lead, a relatively brittle metal, for window framing, casement windows were composed of many, often diamond-shaped, small panes of glass.[10] As one can imagine, visibility was not at its best. Casement windows also changed the façade of the structure when they were open, and, if inward-swinging, impacted the space available for movement (particularly in tight spaces, such as hallways).[11] Sash windows, on the other hand, benefitted from improvements in glass-making techniques and the advent of wooden window framing, which over time both allowed for the number of panes to be reduced. Because they slide vertically in



[7] Parissien, "Windows," 91.
[8] Wrightson, "The Development of the Sash Window."
[9] Wrightson, "The Development of the Sash Window."
[10] Davies, "Window Glass."
[11] "The History of the Box Sash Window."

their frames, sash windows do not drastically change the façade of the structure (and thus detract from the aesthetic standards of the time; explained below) and do not affect internal spaces when open.

Royal patronage and support by Sir Christopher Wren, one of the most highly acclaimed architects in history and renowned in his own time (53 churches in London, including St. Paul's Cathedral, are to his credit[12]), distinguished sash windows as fashionable and of high status.[13] They were also ideally suited to Palladian theories of proportion and symmetry (developed by Venetian Renaissance architect Andrea Palladio) being popularized in the mid-1700s by English architect Inigo Jones and his contemporaries. (An example of Palladian architecture can be seen on the left.) People who could afford to refurbish their homes with new sash windows often did, which explains why many 16th and 17th century buildings have 18th century windows.[14] The sash window as a status symbol was heightened by their price; a heavy excise duty on glass was introduced in England in 1746 and increased over the years until its abolition in 1861.[15]



Sash windows as described above faded somewhat in popularity in the late 19th century with the advent of Victorian styles and the new materials they featured (namely iron).[16] But by the end of the first quarter of the 20th century, sash windows saw resurgence in popularity and continue to be one of the most common window styles today.[17]

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[12] Encyclopedia Britannica, "Sir Christopher Wren."
[13] "The History of the Box Sash Window."
[14] "The History of the Box Sash Window."
[15] "The History of the Box Sash Window."
[16] "The History of the Box Sash Window."
[17] "The History of the Box Sash Window."

Window Glass
Laura Leddy

All window glass in the United States was imported from Britain until after the Revolution, as the first factory to manufacture such glass was not opened until 1787, in Boston.[18] Fragments of window glass were recovered from all of Unit 10's three contexts (JBH 65, 68, and 73), with the majority being from context JBH 68.

During the 18th century, the higher-quality type of common window glass was called "Crown glass." It was made by "spinning out a blown globe of molten glass…to form a disk not exceeding five or possibly six feet in diameter. This was then rested on a bed of sand, disengaged from the rod… and after cooling was cut into panes, the size of which could economically be no more than 10 in x 15 in." The other common type of glass was "cylinder" or "broad" glass, and was made by "swinging the molten glass over a pit to lengthen it." The resulting cylinder was then flattened out by reheating it over a sand-covered metal plate, and then cut up into panes.[19]

The 19th century saw many improvements to glassmaking techniques and production; utilities made available by the Industrial Revolution undoubtedly played an integral part. By 1830 methods were so refined that larger panes could be cut from the processed cylinders. The biggest revolution came in 1832, when English glassmaker Lucas Chance developed the first "plate" glass. This was a new, more standardized product and allowed for the making of much larger panes of glass. As glass became stronger and more regular, window design was able to

[18] Parissien, "Windows," 92-23.
[19] Parissien, "Windows," 92.

reflect this. Now, fewer and more delicate *muntins* could be used because the glass was strong enough to stand in its frame and as larger panes.[20]

The window glass recovered from Unit 10 is a variety of thicknesses, and a few have a slight greenish undertone in certain lights. The originally cut edges are still visible on some of the fragments. Which of these fragments belonged to the sash windows of the house is not discernable, nor is the year in which the glass was made. Not only is Unit 10 thought perhaps to have been a trash pit or some sort of discard area[21], and therefore the other artifacts recovered cannot be assumed to have come from the same time, but windows and their constituent parts are not replaced often. Thus, window parts might be thrown out decades or even centuries after they were new. As the excavation of Unit 10 leads one to the conclusion that it was a trash pit, perhaps from the time of demolition, it is entirely possible that the fragments of glass recovered there were part of originally-installed windows (either to the main house, any subsequently constructed add-ons, or associated outbuildings).

[20] Parissien, "Windows," 93.
[21] Leddy, "Unit 10 Summary."

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Images

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2. "Sash window diagram." Accessed December 2, 2010. http://blogs.chron.com/fixinguptheplace/historic_consciousness/

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Hinges
Laura Leddy

Several flat metal pieces, with holes, were recovered from contexts JBH 68 and 73 in Unit 10. Due to corrosion, it may unfortunately be the case that it is not possible to know what they really were. Still, an examination of their structures lends to the notion that these may have been hinges. Below is a sample of such pieces:

Also unfortunately, several of these pieces broke apart in our storing them after removing them from the unit, and so some of them were quite a bit longer (the longest was approximately 15cm, with a bulging joint in the middle) *in situ*. However, one can still observe hinge-like characteristics on the fragments above. Take, for example, the piece on the top left; its leftmost end is curved around (as if to hook around and hold a hinge pin) and its rightmost end features a small cut hole, the proper size for a fastener (a nail or otherwise). The piece on the upper right seems to include part of the hinge joint, and the leftmost piece in the center row also features a hole for a nail or screw.

One further point for the possibility that these were in fact hinges is related to the presence of window pieces in Unit 10. As the development of sturdy window glass was still in progress throughout the 18th and 19th centuries (see 'Window Hardware' object biography), and windows' general insulation properties were not so well developed, shutters were employed both inside and outside the house. Not only were they intended to protect the glazing, deter intruders, insulate, and keep out drafts, they were a characteristic part of the Georgian/Federalist aesthetic predominating before and during the time of the Hale Ives House's construction.[1] Furthermore, both a drawing of the house circa 1900 and a Providence Sunday Journal photograph from 1923 exhibit clear views of the house's windows, which do, indeed, feature shutters. As Unit 10's area seems to have been some sort of repository for debris and other rubble when the house was demolished (see 'Unit 10 Summary'), it could be that these were the hinges from the windows' shutters. Below is the drawing:

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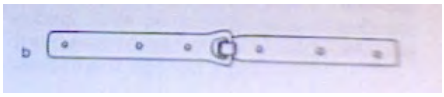
But of course, there is the possibility that they are hinges from some *other* architectural feature, if they were even hinges at all. The type of hinges that they may have been is also

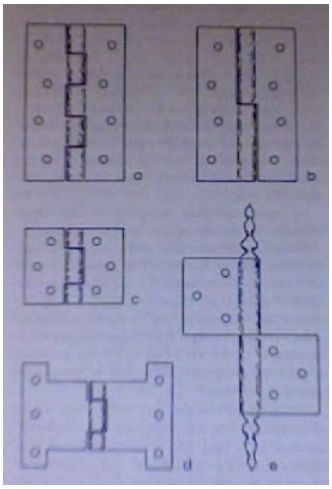
[1] Parissien, "Windows," 199-200.

indiscernible. Priess wisely points out, "A large shutter and a small door might require the same size hinges. Hence, the presence of only a hinge cannot be used as conclusive evidence for a particular type of closure (door or shutter, room or cupboard door)."[2]

American hinges in the 17th, 18th, and early 19th century were predominately surface-mounted. The different types of hinges generally fall into five categories: strap hinges, double-strap hinges, T-strap hinges and H-type hinges. Strap hinges were mostly made of forged wrought iron throughout much of early American history, but underwent a reworking in the 19th century. As manufacturing processes and techniques shifted to machine-made, mass-production methods, they began being made out of steel. This was the case with T-strap hinges as well. Double-strap hinges appear to have had the same production processes as the two described above, although, because double-strap hinges are larger and require more surface area, they were less common than single-strap hinges. (Unfortunately the artifact was damaged in storage, but I strongly suspect that one of the pieces that was found was a symmetrical, double-strap hinge with a loop joint; see picture at left.) H-strap hinges (usually hand-forged, wrought iron) were in use until the late 18th-early 19th centuries, when they were replaced by butt hinges. H-hinges (and later butt hinges) are very versatile, appropriate for use on items ranging from boxes and cabinets to doors (see picture at below right).[3]



Machines for the mass-production of hinges were most likely in place by the 1840s. Some credit the invention of this mechanism to an American, though a patent was registered for it in Britain in 1836. It called for a blank with tabs to be cut, which were then shaped into knuckles by dies.[4] The holes for fasteners were punched out. Stanley's Bolt Manufactory (later to become Stanley Black and Decker) was founded in New Britain, CT, in 1843, and was initially famous for



[2] Priess, "Historic Door Hardware," 60.
[3] Priess, "Historic Door Hardware," 46-63.
[4] Priess, "Historic Door Hardware," 58.

making T-hinges more efficiently. In 1899, they patented a type of hinge that involved ball bearings.[5]

In the mid- to late-19th century when the Hale Ives House was being built, more affluent homes featured hinges made of brass in their interior spaces. The artifacts recovered from Unit 10 are made of iron, which was more commonly found on exteriors and in utility spaces.[6]

[5] Stuart, "Hinge History."
[6] Priess, "Historic Door Hardware," 60.

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Tropicana Plastic
Alicia Hernandez

This piece of plastic was unearthed in the context 66, and was found with many other modern artifacts. The TPQ date of this context was given at 2006 by an artifact that was found at a much higher elevation. This piece was found at a lower elevation suggesting that its date is older, which is why the piece was chosen for an object biography.

The plastic is .01 cm thick and white with a green and yellow design. The piece measures 6.5 cm by 1.5 cm. The image is that of a small girl carrying a basket of oranges on her head with the word “tropic-ana” written on the basket. When initially examining the piece the hyphen was not noticed and it was assumed that this was just the designation of the modern company Tropicana. Further examination and research showed that the words were not the name of the company, but are the name of the companies earliest mascot Tropic Ana. This information provided the ability to date the artifact as Tropic Ana was used as a mascot from 1951 to

approximately the late 80's early 90's. The exact date when usage stopped is not known as the mascot was gradually phased out of production. According to various fan websites of Tropic-Ana the size of the images of the mascot were gradually reduced until she no longer appeared as the focus of the container, but was placed as a small image on the sides. This information suggests that the plastic piece found in context 66 is of a later date due to its small size.

Tropic Ana was created as the mascot for the tropicana company in 1951 due to the advertising techniques of the time (Salamie). There were various brands utilizing personified mascots to represent their companies and Tropicana included themselves in this marketing campaign. The Tropicana company itself was founded in the late 1940s and the hope was that a mascot would create a recognizable symbol for the newly established company. This worked as Tropic Ana became a popular symbol for the company. She was shown as a young girl wearing a grass skirt and lei with a large bowl of oranges on her head. These symbols were meant to represent the then fruit packaging company of Florida. The oranges were meant to indicate the companies main focus as it shifted from fruit packaging to frozen orange juice. The lei and grass skirt were images that suggested the "tropic" portion of the companies name, and linked it to the warm tropical climate in which the oranges were grown. As the company grew and became a large more centralized production company the mascot was no longer needed for recognition and she was removed in favor of the current Tropicana images of Oranges and other fruits.

The mascot was modeled after a woman named Chrissie Kesten Pool. In 2003 Tropicana launched a search for a new mascot model in New York City. Many young girls between the ages of 5 and 8 auditioned for the role, the reward was appearance on a Tropicana ad as well as a $25,000 college scholarship (Pepsi Co.). This new search was a celebration of the company's 50th anniversary and while a press release was written about the event by the company there is no further information on the ad or the winner. There is no evidence of a new Tropic Ana ad on any of the current Tropicana packaging or in a review of previous packaging.

Since the company's main product is orange juice it can be inferred that this piece of plastic was a portion of a juice container. The location of the excavation in close proximity to student housing of Brown University combined with the foot traffic through the john Brown House yard suggest that the plastic was deposited by students or a visitor to the John Brown House. Tropicana products are still commonly sold throughout the Brown University campus and are widely available to students. This availability combined with other artifacts such as

bottle caps and remnants of solo cups indicate that the yard of the John Brown house was used by students as an area of congregation presumably at night. Its location directly across the street from a freshman dorm also suggests that the deposition of this plastic was most likely from a student in the John Brown house yard.

Metal Pipe – Alicia Hernandez

This metal pipe was found in context 72 at a low elevation near the time of the unit closing. It was found in the southern portion of the context near the holes and mortared tiles. The pipe has a diameter of 4 cm and is .5 cm thick. It is composed of iron, which can be determined due to the current state of the pipe's oxidation. The length of the pipe is 13.5 cm on the longer end, and 10 cm on the shorter end.

Pipes have a long history of usage dating back to ancient civilizations. Greek, Roman, Chinese, Indian and Persian civilizations developed plumbing systems to accommodate their

need for a fresh water supply and drainage as they developed public baths and other sanitation projects. The use of pipes, in the ancient world as today, were primarily used and created for sanitation purposes. They are predominantly used to transport water, sewage or steam. The diameter of this pipe combined with its age suggests that is was probably used in some sort of plumbing. The diameter is too small to be used for sewage and the oxidation indicates an age that was prior to the general use of steam in homes, so water seems the likely choice. In modern day plumbing cast-iron pipes are used for drainage and vent lines.

The first usage of iron pipes is said to be around 1455, in Siegerland, Germany. The size and construction of the iron pipe is unknown, but it was used to provide Dillenberg Castle with water. There is also historical records that indicate Louis XIV created an iron pipeline to serve the city of Versailles with particular emphasis on the water supply to the fountains. The pipeline was 24 kilometers long and was in working order for over 330 years (Carpenter). The first usage of iron pipes for water service in the United States was much later. Philadelphia was the first city in the United States to use iron pipes in a project that took almost 30 years. The project was finished in 1848 at which point the engineers had created a network of cast-iron pipes. The first of the iron pipes laid in Philadelphia had to be imported from England because there was no United Stated manufacturer of pipes until 1834 when a pipe foundry was created in New Jersey (Carpenter). By 1975 there are estimates that cast-iron pipe comprised 75 percent of the water main pipe in place in the United States (Society for Mining, Metallurgy, and Exploration).

The predominant historical use of iron piping in the United States was water service. Applying this usage the pipe found could have been used for drainage or water supply purposes. In-door plumbing was available to urban and developed areas during the last quarter

of the 19th century and even then it was not common. In-door plumbing was not a common part of households in the United States until the mid 20th century. This suggests that if the pipe was used by John Brown's family and relatives it would have probably have been used for drainage purposes as in-door plumbing was not available until much later. The John Brown house is said to have had problems with drainage of the basement of the house and that drainage pipes were put in place to help with the problem. If the pipe was not used by the Brown family and descendants it is probably the result of Marsen Perry's renovation of the house. Perry purchased the home in 1902 and added plumbing and electricity to the colonial structure (Alexander Mittman). This addition included large amounts of in-door plumbing to various parts of the house. The addition of plumbing and the other renovations to the John Brown House during this time would have produced a large amount of waste so it is likely that this pipe could have been a by-product of renovations.

Though the exact uses of the pipe cannot be determined at this point it is likely that it was used either as a method of drainage in the earlier stages of the house or as a by product of the renovations and instillations of plumbing by Marsden Perry. The location of the pipe does not give an indication as to which of these hypothesis as it was found in context 72 which is presumed to be fill. The pipe could have been a by product of any number of constructions and renovations at different points in the history of the house.

Mortared Tile
Alicia Hernandez

This piece of mortared tile was found in context 72, in the hole near at the

southernmost part of the context. The mortar connected to the tile measures 16.1 cm high. The tiled surface measures 27.1 cm from corner to corner and the thickest portion across is 14 cm. There are 32 individual tiles attached to the top surface of the mortar and these were face down when the object was discovered. The tiles are 2.2 x 2.2 cm and appear to be a material similar to marble as opposed to the type of chalky tile discussed in Jenneth Igbokwe's object biography in this volume. These tiles are smooth and have a slight grey tint. Though there is a slight sheen to the tiles they are not glazed which suggests that they are marble floor tiles and not ceramic though ceramic was fairly common in many historic homes.

Tile has been used throughout history for various decorative and practical purposes. It can be used as roofing, decoration for walls as well as floors or other objects such as tabletops. There are various type of tile that are commonly used. The most common of which is glazed

ceramic tile, but other common types include, marble, slate and granite. Natural stone tiles are said to be less uniform is color and occasionally in shape. This coincides with the appearance of the tile on this particular object. The tile on this object appear to be marble stone, the colors are similar but not uniform and the shapes are slightly inconsistent, though this can be attributed to previous production methods as well.

Marble tiles have a particularly long history of use that can be dated back to Greek and Roman civilization. The usage of marble tiles is much better documented in ancient times than it is in historical sources. Marble was as an important building material in ancient times Its uses varied from foyers and walkways to entire prominent structures. Today marble tiles are predominantly used for bathrooms, kitchens, hallways and foyers (Tilenet). These applications are generally in the residential sphere, marble has many other application in commercial and artistic fields, but because the archaeological site is a House and not a commercial area the focus will be on residential uses. Each of these uses could potentially be correct for this object.

The thick mortar suggests that it was uses as flooring instead of decoration on walls or other fixtures. The usage of a marble tiled floor as a kitchen or bathroom during the Brown families occupation of the house seems unlikely. This is because the marble floor would have been placed in an outbuilding, and as an expensive import it is unlikely that it would have been used outside of the main house. The marble tiles could have been used to tile a smaller room within the main house that had more constant water usage. Though the usage of marble tile has been continual since its beginnings in Greek and Roman civilization it is unlikely that it was used at the John Brown house during his family's occupation of the structure as ceramic tile was preferred at that time (Office of Archaeology and Historic Preservation). Ceramic tile

offered much more varied designs and colors and was the favored tile in early America. The tile currently in the John Brown House is predominantly ceramic, though some of that was added by Marsden Perry.

It seems far more likely that the tile is associated with Marsden Perry's occupation of the property. Perry added plumbing and electricity to the house in addition to a wide range of other renovations. The renovations included showers and Italian tiled bathrooms and a renovation of the newly placed in-door kitchen, and the introduction of a marble fireplace (Alyssa Thelemaque). Perry used large amounts of marble in his renovations of the house. The driveway was covered in marble, as was a portion of the exterior of the house (Alexander Mittman). Marsden's extensive use of marble in his renovations suggests that the marble found came from the time the house was occupied by him. If Perry employed marble as the stone of choice for various elements within and outside of the house it seems likely that at some point marble would have been used as a floor, as this artifact shows. The context and placement of this artifact face down, while similar other artifacts were found face down, suggests that it was removed from whatever area it served as a floor and was used as fill for the area between feature 2 and feature 4.

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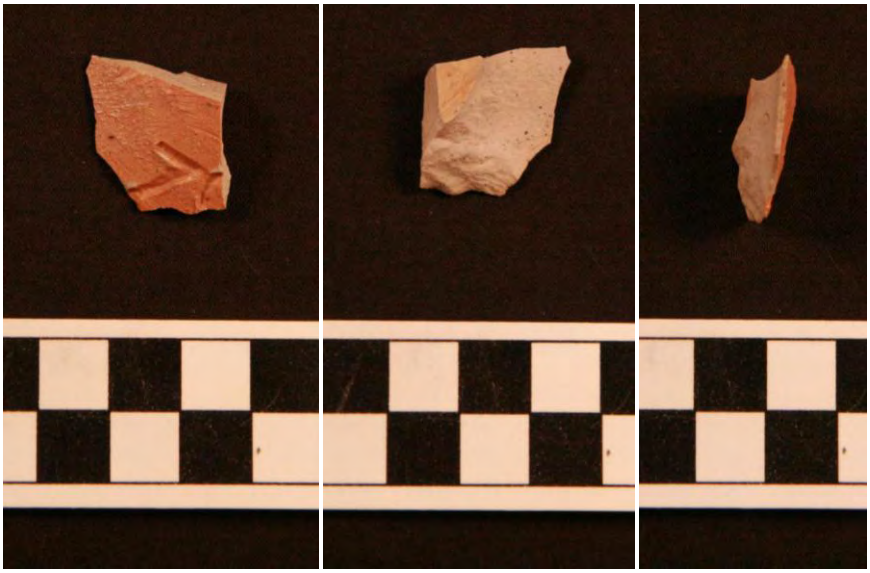
Mysterious Concrete or Ceramic Flake

Max Mankin



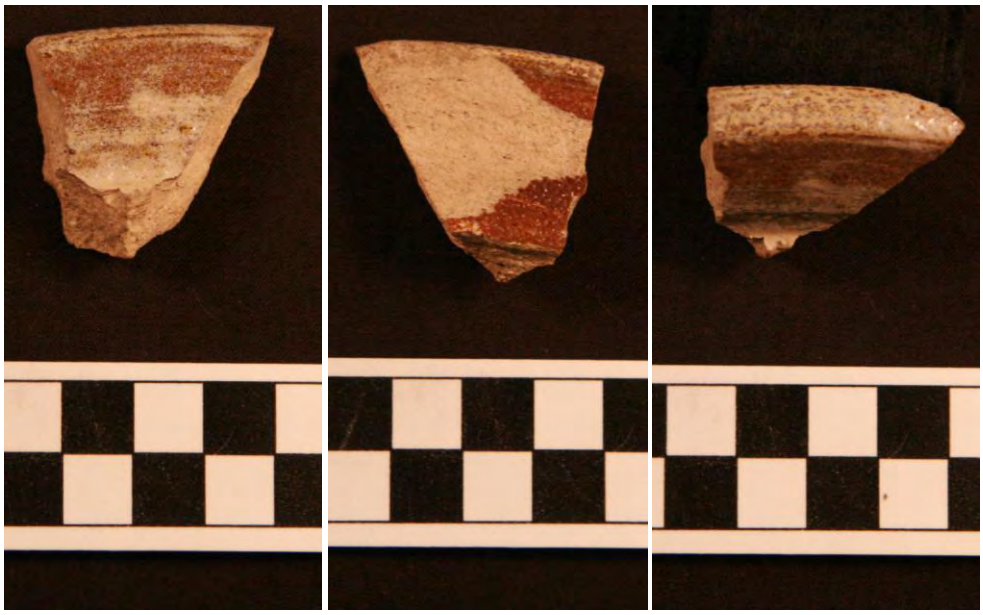
This object was excavated from Unit 12, Context 69. It measures approximately two by two centimeters. At its thickest, the object measures about 0.5cm deep. The smooth side is covered by a dark red paint, while the chipped side reveals a light grey fabric. The intact edge of the piece is flat, while the chipped edges are fairly sharp. The object's composition has been the subject of debate and speculation because it is difficult to tell if the object is ceramic or concrete, for several reasons. First, the piece's grains are very fine and cannot be seen even under a 30x optical microscope.[1] Ceramics generally have fine grains, but modern concretes (more on this later) may also be very fine grained. Similarly, there is what appears to be a "7" inscribed on the painted side of the piece. The buildup of material around the gouged-out 7 is characteristic of making an incision in both unfired ceramic and wet concrete. Both ceramics and concrete are known to have light grey fabrics. Lastly, ceramic materials and concrete have similar fracture and surface patterns, so neither can be eliminated by looking at the surface of the piece.

Despite the difficulty of visually identifying the piece's material, a clue may lie in the piece's weight, as the piece is extremely light for its size. Though the fine grains point initially to over-fired ceramic[2,3] (especially in the context of the vast quantities of ceramics excavated in Unit 12), over fired ceramic generally becomes denser in the kiln. This occurs because spaces in the clay matrix, which were previously occupied by air, are filled in by glass. Since this piece is extremely light compared to a ceramic of similar size, it is possible to eliminate ceramic as a fabric possibility. Thus, given its low density, the piece is likely a modern concrete-type material.

[1] A 30x optical microscope was that was had available at this time.
[2] Susan Alcock, Personal Communication.
[3] Brian Sheldon, Personal Communication.

Salt glazed stoneware

Max Mankin



This stoneware sherd is the only piece of brown stoneware found during this year's JBH excavations. It was excavated from Unit 12, Context 69. It measures about 3.5 cm at its widest and tapers to a point. It is about 1.0±0.2 cm thick and straight-sided. The piece features a smooth rim, corresponding to the top of a vessel and a tiny lip near the tapered point corresponding to the bottom of the vessel. Though the glaze on the outside of the sherd is chipped, pieces of the "orange peel" glaze texture and deep brown coloring characteristic of salt firing still remain. The inside surface sports a brown salt-fired glaze with characteristic orange peel texture overlaying what appears to be a white slip. The rim of the sherd appears to be corroded, hence the disappearance of the orange peel texture. The ceramic fabric itself is fine grained and light tan in color, corresponding to RGB (220, 160, 100), ± ~15 color units in any direction. The sherd's curvature indicates a diameter of ~22cm, though it is difficult to be entirely confident of this because of the small fraction of the rim (<5%) we actually have. Given the lip mentioned above, we believe the sherd represents the entire height of the vessel.

Brown stoneware originated in Germany in the 1400s and reached England by the 1600s.[1] It is desirable because it is as hard as steel, though less strong, and non-porous when fired, making it waterproof and ideal for the storage or transport of foods or liquids.[2] It is often thrown by hand, as seen in this sherd, which clearly displays lines leftover from the wheel.

[1] Barber, Edwin Atlee. "Salt glazed stoneware: Germany, Flanders, England and the United States." The Pennsylvania Museum and School of Industrial Art, Philadelphia, PA, **1906**.
[2] Ketchum, William C. "The Knopf Collector's Guides to American Antiquities: Pottery and Porcelain." Alfred A. Knopf, New York, **1983**.

As Europeans came to North America, they brought stoneware with them. It was not until the 1730s that stoneware began to be manufactured in the United States in Manhattan, Boston, and Philadelphia. Interestingly, clays required for stoneware are somewhat rare in the Northeastern United States. Thus, because of the high cost of shipping the clays and finished wares, many of the early stoneware potteries, such as a shop founded by Grace Parker in 1743 in Boston, floundered.[2] With the advent of canals to make transportation cheaper and easier, more potteries opened around the country, in locations including Albany (upstate) and Huntington (Long Island), NY;[3] Bayonne and Haddonfield, NJ;[4] Bennington, VT; Norwich and Norwalk, CT; Strasburg, VA; Morgantown, WV; and Hagerstown, MD.[1] As prices dropped and manufacture increased, stoneware became the dominant utilitarian ware of the 19th century.[4] Thus in the average Rhode Island household, stoneware would have been relatively rare until the second or third decade of the 1800s. However, given the stature and means of John Brown, the possibility that the stoneware dates to the period before which stoneware was popular and cheap in Rhode Island cannot be eliminated, giving us a *Terminus post quem* of ~1730 if we assume that the stoneware was made and fired in North America.

However, it is also possible that the stoneware comes from England, as it matches characteristics of brown salt glazed English stoneware.[5] Such stoneware was manufactured as early as 1671 in Fulham, England (hence its nickname of "Fulham Ware") in a factory owned by John Dwight.[6,7] However, the majority of Fulham wares were tankards, jugs, and mugs with thicknesses and diameters less than that of our sherd, so it is unlikely that the sherd, which comes from a shallow, thick plate or pan, is from Dwight's factory. This indicates a likely American manufacture and date in the late 18th or early 19th century. Stoneware was out of style in the United States by 1900.[2]

Stoneware is generally fired to 1200°C, above the temperature at which earthenware is fired but below that used for firing porcelain. The majority of the brown stoneware of the 18th and 19th centuries was salt fired, meaning that salt (NaCl) was thrown into the kiln while it was at its maximum temperature. At such elevated temperatures, NaCl decomposes in the presence of water to yield sodium oxide (Na_2O) and hydrochloric acid (HCl), a gas which vaporizes out of the kiln.[8] Sodium oxide then reacts with the clay body (silicon and aluminum oxides) to form a sodium aluminosilicate glaze with its characteristic orange peel texture. Given that salt is thrown into the kiln, the salt glaze is usually only present on the outside of salt fired vessels with high sides and narrow mouths. However, because our sherd comes from a shallow plate, the orange peel texture is visible on both the inside and outside of the sherd.

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[3] Zipp, Mark. "Paul Cushman Exhibition Offers Insight Into Albany's Famous Stoneware Maker." Antiquities and the Arts Online. http://antiquesandthearts.com/2007-02-12__15-32-57.html&page=1.

[4] The New York State Museum. "The Weitsman Stoneware Collection." http://www.nysm.nysed.gov/research_collections/collections/history/weitsman/index.html.

[5] "Stoneware, Brown Salt Glazed, English." Type Index, Historical Archaeology, Florida Museum of Natural History. http://www.flmnh.ufl.edu/histarch/gallery_types/type_index_display.asp?type_name=STONEWARE,%20BROWN%20SALT%20GLAZED,%20ENGLISH

[6] Hume, Ivor Noel. "A Guide to Artifacts of Colonial America." University of Pennsylvania Press, Philadelphia, **1969**.

[7] "English Brown." Diagnostic Artifacts in Maryland JEFPAT Database. http://www.jefpat.org/diagnostic/historic_ceramic_web_page/Historic%20Ware%20Descriptions/English_Brown.htm

[8] Rhodes, Daniel; Hopper, Robin. "Clay and glazes for the potter." Krause Publications, Iola, Wisconsin, **2000**.

Stoneware vessels were also generally decorated with patterns of cobalt blue glaze, but sadly, no decoration is visible on the small portion of the recovered vessel.

Given the fairly lackluster appearance of the stoneware and the ubiquity of more flashy ceramics, like porcelain, at the JBH as well as the well known fact that stoneware was used in a utilitarian fashion,[4] it is relatively unlikely that the sherd came from tableware. Thus, given the functionality, height, and diameter of the piece as well as brown stoneware's history, we hypothesize that the sherd originates from a plate or pan, likely a milk pan or pie plate manufactured in North America and used during the late 1700s or throughout the 1800s. It would have been used for the preparation of food (separation of curds and whey, cooling of a pie) rather than placed on a table for serving food.

Though concrete has been used frequently since Roman times, its composition and makeup have changed substantially since then.[4] Concrete, in its most basic form, consists of a cementing material (e.g. Portland cement), a mineral aggregate (e.g. sand or gravel), and water. Cement, an ingredient in concrete, is not to be confused with concrete itself, as it is usually a powder of oxides like alumina, silica, and lime which is used to provide concrete with its structural integrity. When water is added to the cement/aggregate mixture, a chemical reaction called hydration occurs. Hydration is complex and its details depend on the specific components of the cement. However, in general, hydration and absorption of carbon dioxide from the air produce insoluble calcium carbonate and other crystalline minerals which bind the aggregates together, giving concrete its strength.

While concrete appears to be entirely solid, it is actually porous. In fact, in the 1930s, air bubbles began to be deliberately incorporated into concrete as it was being poured and hardened. This process is called "Air Entrainment."[5] The air pockets increase the durability of concretes during freeze-thaw cycles, as they relieve internal pressure caused by expansion and contraction of water inclusions and the concrete itself. The air pockets also make the concrete more workable before it hardens. Air entrainment is a complicated process, and may occur via addition of an air-entraining agent to the cement before it is mixed to form concrete or via addition of an air-entraining admixture to the cement-water-aggregate system as it is being mixed.[6,7] Additionally, various procedures during the manufacture process may be tweaked to alter the amount of air entrainment which occurs in concrete.[6,8] Air entrainment may render the concrete up to 8% air by volume before the air starts to reduce the concrete's durability. This object is likely air entrained, given its low density. Thus, it must date to after ~1930. In the context of Unit 12, which was most likely filled with whatever dirt was around during a landscaping effort in the 1960s, it is possible the concrete shard was simply thrown in with the backfill (see Mankin, Chapter X and references therein).

Concrete is an extraordinarily complex material given the number of components which go into making it, so it is difficult to reliably comment on its manufacture, content, and use without significant research and lab study. A first step would be x-ray diffraction to determine which crystalline chemical compounds are present in the concrete. However, diffraction patterns of aggregates with many minerals are complex and often difficult to reliably interpret and should probably be supplemented with elemental analysis, either by energy dispersive x-ray spectroscopy in a scanning electron microscope (SEM-EDS) or another technique.[3] Additionally, an examination of the concrete's microstructure and mechanical properties would yield clues as to its makeup, use, and manufacture.[9,10,11] Lastly, a previously reported

[4] "The History of Concrete." http://matse1.matse.illinois.edu/concrete/hist.html.
[5] "Air-Entrained Concrete." Portland Cement Association, **2010**. http://www.cement.org/basics/concretebasics_airentrained.asp.
[6] "Materials: Chemical Admixtures." Portland Cement Association, **2010**. http://www.cement.org/tech/cct_admixtures_AEA.asp.
[7] Concrete Technology Today, Portland Cement Association, **1998**, vol. 19, no. 1.
[8] "Guidelines for Control of Air Content in Concrete." Portland Cement Association. http://www.cement.org/tech/pdfs/PL834guide.pdf.
[9] Roy, D. M.; Idorn, G. M. "Concrete Microstructure." Strategic Highway Research Program, National Academy of Sciences, **1993**. http://onlinepubs.trb.org/onlinepubs/shrp/SHRP-C-340.pdf.

procedure for extracting organic inclusions from mortar for ^{14}C dating may be extended to date the concrete if organic inclusions made it past the modern concrete refining process.[12]

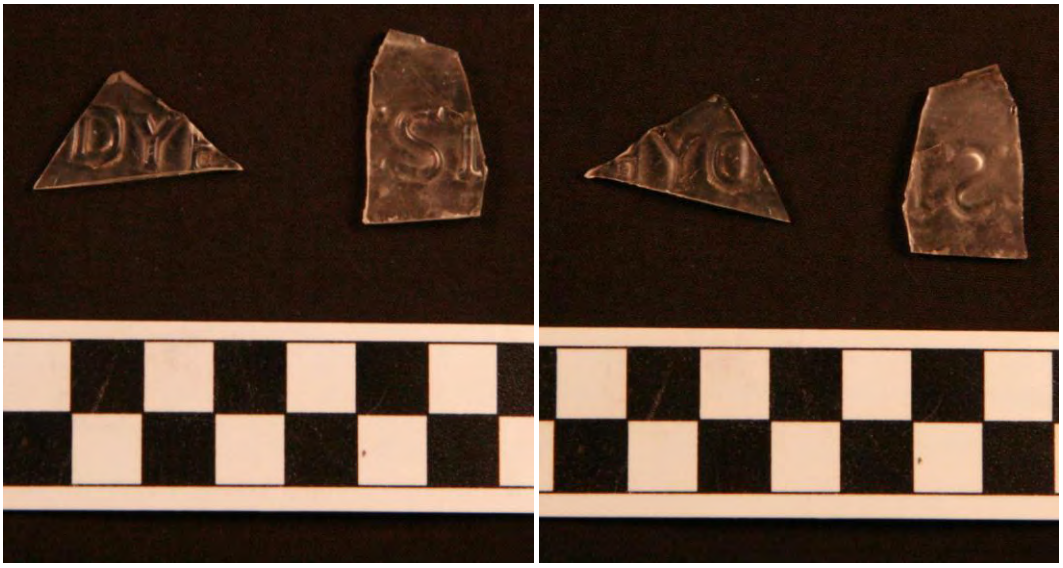
[10] Mehta, P. K.; Monteiro, P. J. M. "Concrete: Microstructure, Properties, and Materials." McGraw-Hill, New York, **2006**.

[11] "The complexity of concrete microstructure." Garboczi, E. J.; Bentz, D. P.; Snyder, K. A.; Martys, N. S.; Stutzman, P. E.; Ferraris, C. F.; Bullard, J. W. "An electronic monograph: Modeling and Measuring the Structure and Properties of Cement-Based Materials." NIST Engineering Laboratory, **2010**. http://ciks.cbt.nist.gov/~garbocz/appendix1/node5.html.

[12] (a) Al-Bashaireh, K.; Hodgins, G. W. L. "AMS ^{14}C dating of organic inclusions of plaster and mortar from different structures at Petra-Jordan." *J. Arch. Sci.* **2010**, *In Press.* (b) Folk, R. L.; Valastro, S. Jr. "Successful technique for dating of lime mortar by carbon-14." *J. Field Arch*., **1976**, 3, 203-208. (c) Heinemeier, J.; Jungner, H.; Lindroos, A.; Ringbom, I; Konow, T. V.; Rud, N. "AMS ^{14}C dating of lime mortar." *Nucl. Instr. Meth. Phys. Res. B* **1997**, 123, 487-495. (d) Ringbom, I.; Hale, J.; Heinemeier, J.; Lancaster, L.; Lindroos, A. "Dating Ancient Mortar." *American Scientist* **2003**, 91, 130. http://www.americanscientist.org/issues/feature/dating-ancient-mortar/1.

Colorless glass shards with embossed letters

Max Mankin



These two colorless glass shards were excavated from Unit 12, Context 69. They measure ~2-3cm wide and ~1mm thick. One, the triangular shard, is embossed with the letters "DY" and part of an "E." The other shard, which is shaped as an irregular pentagon, is embossed with what appears to be an "E" and "SI." The letters are of a serif, Times-type font. Given that the glass is not curved, it must have originated from a straight sided container or lighting device of some sort. However, given the embossing, as will be discussed later, it is likely that the shards originated from a straight-sided glass bottle.

Unfortunately, no mold seams or edges remain to help identify the process by which the glass was manufactured. Despite this, characteristics such as thickness, texture, and embossing can be used to identify manufacture. Though the triangular piece maintains the same thickness throughout its body, the pentagonal piece increases slightly in thickness toward the "I." The glass surface is smooth, and impressions of the embossed letters can be felt on the inside of the piece. Based on this, it is likely that the bottles from which the pieces originate were two piece contact molded.[1] Two piece contact molding involves introducing hot glass to a two-piece mold and using air pressure (either from a machine or a glassblower's mouth) to force the glass against the mold. After the glass cools, the halves of the mold are removed and the piece is completed with hand tools to provide a smooth finish. The process results in bottles which are smooth on their exterior and have embossing which can be felt on both sides of the glass, matching both of our shards. Additionally, though it is not necessary, it is possible that the thickness of two piece contact molded glass may be uneven on the inside surface of the piece, much like our pentagonal shard. Two piece molding was used to manufacture small proprietary medicine and flat-sided drink bottles as early as 1750.[2] However, it was most common in the United States from 1810-1880. It is also difficult to rule out three or four piece molding, given that we have no mold seams, but

[1]The Parks Canada Glass Glossary. Minister of Supply and Services and Minister of the Environment, Canada, **1989**.
[2] Hume, Ivor Noel. "A Guide to Artifacts of Colonial America." University of Pennsylvania Press, Philadelphia, **1969**.

the process is similar except for a higher number of pieces to the mold. Three and four piece molding was more common in the latter half of the 19th and early half of the 20th centuries.[1] The fact that the embossed letters are rounded as opposed to sharp corroborates their mold manufacture as opposed to being blown in open air.[3] The serif font indicates that the bottles were likely manufactured prior to 1880, though this trend is weak and generally nonconclusive.[3]

The letters embossed in each piece of glass indicate that they stemmed from a straight-sided glass bottle, as most lighting implements did not have letters embossed in them. Furthermore, lighting implements were rarely made by contact molding techniques.[1] Embossing was employed in Colonial times to attract buyers' attention to bottles, inform users of bottle contents, and to make ownership of the bottle clear.[3] Bottle ownership was an important issue because bottles were frequently reused for purposes other than those for which the bottle was manufactured. Letters on bottles may also frequently correspond to the town, street, or area at which the product or the bottle was made.

Unfortunately, the letters on these shards are disconnected from the rest of their bottles, so some speculation is required. First, the piece embossed with "DYE" is at first glance obvious. Dyes were of course ubiquitous in the household, with applications ranging among fabric for clothing or curtains, fur, leather, wood, hair, and art.[4] Common dyes in the 18th and 19th centuries include cochineal for crimson (1630), indigo (1745), Prussian blue (1774), kelp (1716), chlorine (1786), and sulfuric acid (1774) for bleaching, alizarin yellow (1887), and aniline for mauve, methyl blue, and methyl violet (effect observed 1834, mauve dye isolated 1856; blue and violet later).[4]

In addition to dyes for colorants, "Dyer's Healing Embrocation" was a seemingly ubiquitous elixir intended to cure a wide variety of ailments. As read in the Sepember 27, 1856 New York Times:[5]

> **Summer Complaints** make fearful havoc among children. DYER'S HEALING EMBROCATION is the mother's best friend; it is always reliable. Diarrhoea, Cholera Morbus, and all complaints caused by the excessive heat; headache, weakness, and pains are banished by its timely application. Clean and free from grease. CHARLES H. RING, General Agent, No. 192 Broadway. Sold at retail everywhere.

Dyer's was truly ubiquitous (though curative properties are suspect) for a period of at least 10 years, as seen by a record of two businesses selling it in Newport in 1856 (Hazard & Caswell, at 137 Thames Street and 12 Washington square; Taylor, R. J. at 102 Thames);[6] two advertisements for its ability to cure sore nipples and toothaches in a 1859 edition of the Wayne Democratic Press of Lyons, NY;[7] a notice

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[3] Lindsey, Bill. "Embossing." The Society for Historical Archaeology and the Bureau of Land Management. http://www.sha.org/bottle/body.htm#Embossing.
[4] Druding, Susan C. "Dye History from 2600 BC to the 20th Century." http://www.straw.com/sig/dyehist.html.
[5] "Special Notices." New York Times, September 27, **1856**.
[6] "THE NEWPORT DIRECTORY, CONTAINING THE NAMES OF THE CITIZENS, A BUSINESS DIRECTORY, CITY RECORD, GOVERNMENT OF STATE, &C; 1856-'57."
http://www.rootsweb.ancestry.com/~rinewpor/directories/working2.html
[7] "MEDICINES &C." Wayne Democratic Press, September 14, **1859**, vol. IV, no. 18, whole no. 174.
(http://fultonhistory.com/newspaper%202/Lyons%20NY%20Wayne%20Democratic%20Press/Lyons%20NY%20Wa

presented to Congress of its repossession, among other items, in Indianola, TX on April 23, 1851;[8] its sale by "Guild & Harlow, dealers in drugs and medicines, paints, oils ... corner of Exchange and York Streets, Bangor [, ME]... also agents for Dyer's healing embrocation" in 1859;[9] and its sale at "Field's Family Store" at 205 Westminster Street, Providence, RI.[10] Lastly, Dyer Street is located in downtown Providence and is the only Providence street which contains the thread "DYE."[11] It is possible that the manufacturer of the bottle was located on Dyer Street, but an exhaustive search through every bottle in the Little Rhody Bottle Club catalog reveals no manufacturers located on Dyer Street.[12]

"ESI" is a bit more mysterious. Though E, S, and I are among the most frequently used English letters, the "ESI" string does not appear once in a rather tedious search of the names of every town in New England.[13] "ESI" does appear in Lakeside Street and President Avenue, streets in Providence, indicating that perhaps the bottle was manufactured at one of these locales.[11] However, these streets are unlikely manufacture locations, as it they are in a fairly residential neighborhood near Butler and Miriam Hospitals, Blackstone Boulevard, and the Brown Stadium. Lastly, "ESI" appears in the Little Rhody Bottle Club catalog in "Citrate of Magnesia" and "Magnesia and Mineral Waters."[14] Magnesia is still used today - most commonly as "Milk of Magnesia," an aqueous, alkaline suspension of magnesium hydroxide ($Mg(OH)_2$) - to treat constipation and heartburn. It debuted as a medical product in 1826, when Sir James Murray used it to treat the Lord Lieutenant of Ireland, the Marquis of Anglesey.[15] It subsequently became a widespread pharmaceutical. Given that the two bottles in the Little Rhody catalog were manufactured in Providence, it is highly possible that the ESI glass belonged to a bottle manufactured in Providence to contain a suspension of magnesia.

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yne%20Democratic%20Press%201859-1861.pdf/Lyons%20NY%20Wayne%20Democratic%20Press%201859-1861%20-%200149.PDF)

[8] Clark, John H. and Baldwin, James W. "Congressional serial set, Volume 627." US Government Printing Office, S. Doc. 121, pages 113-115.

[9] "Dealers." Webster's Quotations, Facts, and Phrases. ICON Group International, San Diego, CA, **2008**.

[10] "The Rhode Island Schoolmaster" eds. DeMunn, N. W. and Snow, F. B. Cooke, Jackson, & Co., Providence, RI, Volumes 11-12, **1864-5**.

[11] Providence, RI Assessor Database. http://providence.ias-clt.com/parcel.list.php?parcel.search[p_parid]=&parcel.search[o_own1]=&parcel.search[p_adrno]=&parcel.search[p_street]=&parcel.search[search]=Search. Note: viewing the page's source code reveals an XML-tabulated list of street names. An electronic query of this list for "DYE" or "ESI" yielded: **Dye**r Street, Lak**esi**de Street, and Pr**esi**dent Avenue.

[12] Bottle Book. Little Rhody Bottle Catalog. http://www.littlerhodybottleclub.org/bottlebook/.

[13] See for instance: http://en.wikipedia.org/wiki/List_of_municipalities_in_Rhode_Island

[14] Bottle RI-0011: http://www.littlerhodybottleclub.org/bottlebook/abofrimeda.html;
Bottle RI-1232: http://www.littlerhodybottleclub.org/bottlebook/abofrisodam.html.

[15] "Sir James Murray's Condensed Solution of Fluid Magnesia." The Sydney Morning Herald, October 7, **1846**, vol. XXI, no. 2928,

Earthenware Sherd | Pearlware Sherd | Canton Porcelain
Olivia Petrocco

Earthenware Sherd – Unit 12, JBH 69

This sherd of earthenware is the form of a triangle approximately 2 centimeters tall with a 1-centimeter wide base. A dark semicircle survives on one face of the sherd, with a diameter of approximately 1 centimeter. A clear glaze survives on the same face as the semicircle, though there is no glaze on the opposite side. The glaze does suffer some blemishes in the smoothness, but it remains glossy and clear despite its time buried underground. Though the sherd does have some curvature, it is lacking any distinctive features that could distinguish from which type of vessel it came. The sherd was found in the mottled, clay-like soil of JBH69 in Unit 12, the second context excavated in the unit, which also contained many ceramic sherds from various periods, glass fragments, architectural and nail iron, mortar and brick pieces, charcoal, brick, and some mammal remains. No similar pieces of this type of pottery were recovered from the unit. Though this piece of pottery sherd is extremely small, and an isolated find within the unit, it is temporally diagnostic because of its decorative element and fabric.

The sherd is a piece of Staffordshire slipware, a type of pottery, usually earthenware, named for the sediment that decorates it that became popular in the middle of the seventeenth century. The pottery produced for use as slipware was not of high status, but has lived on in popular memory as a one of the "useful and novelty wares" that is treasured and passed on for generations (Barker 3). Slip, the namesake of slipware, is a simple mixture of clay with liquid that was then sieved to remove any particles that would disrupt the clay's use in decoration. Slip was most commonly applied through a process called trailing, in which the slip mixture is trailed across the surface of the pottery in an ornamental pattern. Once the slip had dried, it was glazed, usually with a lead glaze that was applied by dusting a powder form of glaze or dripping or brushing in liquid form. Slipware glazes were typically

applied to only one side of plates and dishes, but to both the interior and exteriors of other types of vessels (barker 6). Because glaze has only survived on one face of the sherd, it is possible that sherd was formerly part of a dish or plate. Firing occurred within an over heated to 1000 to 1100 degrees Celsius, which was the proper temperature for firing temperature for hardening earthenware. Slipware could be fired alongside other earthenware pieces in the oven (Barker 7).

Staffordshire pottery was first produced in the 1640s and has continued to be produced into modern day (Barker 15). Between 1700 and 1720, Staffordshire pottery was dominated by a style of decoration that incorporated simple geometric designs or stylized animals and flowers, sometimes in conjunction with slip spots or the name of the owner. Most often, Staffordshire potters produced everyday items, such as cups, mugs, porringers, candlesticks, honey pots, cradles, jugs, posset pots, or other hollow vessels. These items would be used more often than displayed (Barker 15). It is unfortunate that an additional or larger sherd was not uncovered, as pieces of Staffordshire slipware often was meant as a commemorative piece, and included inscriptions of individuals or couples. Such a label would have helped determine the provenance of the slipware vessel.

It is very plausible to believe that the sherd is a cast off from the John Brown House kitchen, or another location of daily mundane use, and as a result, was handled regularly. Considered as whole, the excavation finds of Unit 12 suggest that the area was once the debris pit or a fill area for the property. A chip off such a utilitarian and practical vessel would likely have been discarded without much consideration, and so might have easily found its way into the area that is now Unit 12, to rest among the other abandoned items of the home.

Pearlware Sherd – Unit 12, JBH 69

These two pieces of green painted ceramic sherds are from JBH 69 of Unit 12. The larger sherd, which shows more of the decorative pattern, is approximately 2 centimeters tall. The patterned end extends about 1 centimeter, while the base of the sherds runs approximately 1.5 centimeters. The smaller sherd, is more

triangular in shape, with a height of 2 centimeters and a base length of 1 centimeter. The smaller sherd has green coloring intact only near its very edge. The smaller sherd does not show any evidence of scalloped detail, but feels smooth to the touch. The glaze on either piece is fractured in patches and exposes the fabric of the sherd, but is smooth where still intact.

The large sherd, with a greater amount of the item's pattern still intact, was used to approximate the diameter of the original vessel, which appears to have been about 5 centimeters. Assuming the diagnostic on the object size is correct, there is about 10 percent of the item's periphery recovered.

These shards can be categorized as white or cream-colored earthenware, called pearlware. The production range for pearlware was 1785 through 1840. Pearlware was produced in England. Pearlware was typically thin, formed by a hard refined earthenware paste, and usually was used to make bowls, plates or other serving dishes, such as platters. Rims were typically scalloped or plain, and pearlware was often decorated with a variety of embossed or impressed designs (FLMNH).

The pattern on this recovered sherd is formed by two shades of green and looks to be hand painted over a smooth-edged rim with impressed straight lines guiding the green decoration. From the fragment, it looks as though the rim of the ceramic was smooth, however three similar sherds are displayed at the Florida Museum of Natural History, each of which has a scalloped edge. It is possible that simply too small of a sherd survives to determine the overall rim shape, and our small piece is misleading. If the vessel was scallop edged, rather than smooth, it could be dated more precisely to a production range of 1809 until 1831.

Pearlware was introduced around 1775, about the time that its predecessor, yellow tinted earthenware dubbed creamware, was beginning to decorate under its glaze at a lower cost than by the previous overglaze method (Orser 154). Josiah Wedgewood, an English potter, brought the world pearlware in 1779 when he coined the term "pearl white" to describe his white earthenware, even though his product used largely pre-existing techniques (Stelle 4). The term stuck as the name of the next step towards pure white in English earthenware that attempted to mimic the white porcelain that was imported from China at the same time.

Pearlware was usually fired with a lead glaze, but potters also occasionally added cobalt to the glaze, which caused the glaze to take on a bluish hue, which is especially notable when then glaze pools. These sherds do not have an obvious blue tint, so it is likely that there is no cobalt in their glaze (FLMNH).

Though it was the only piece recovered with this specific pattern, or even with only green decoration from excavations this year, there have been many other sherds of pearlware, of various patterns, uncovered at JBH in 2010. In fact, pearlware sherds have been very common throughout excavations at JBH, appearing in the finds for both the 2008 and 2009 seasons. In 2009, a greenish-tinged scallop-edged pearlware sherd was recovered from JBH 52, and it closely resembles the same style of pearlware.

It is likely that this specific sherd came from a discarded plate or serving dish from the main house that the Brown family would have used. It would have been used for serving or dining, but not likely in the preparation of the food at the

John Brown House. If the vessel is indeed scallop-edged, it is likely that the item made its way to the John Brown House while John Brown's widow, Sarah, was living in the home. She lived in the house after John's death in 1803 until her own death in 1825, which aligns very closely to the production dates of pearlware with a scalloped edge and impressed straight lines.

Canton Porcelain – Unit 12, JBH 69

These three fragments of Canton porcelain were uncovered in JBH 69 in Unit 12, along with many other similar Canton pieces with blue and white decoration. The smallest fragment is just over 2 centimeters long and just over 1 centimeter wide. This smallest fragment appears to have broken off from the rim of the object, and contains the rim pattern of blue lines in an oblique parallel design. The arc of the rim fragment suggests that the original vessel had a diameter of 5 centimeters, and that about 5 percent of the periphery is represented in the surviving fragment.

The body sherd tapers out from a length of just over 1 centimeter at one side to just over 2 centimeters long at the opposite end. The fragment is 3 centimeters wide one side, and 4 centimeters wide on the other. Because this sherd does not contain fragments of the rim or of the base, it cannot be used diagnostically to determine the size of the original item. However, it still contains more of the oblique parallel pattern that links it to the other two fragments.

The larger fragment is roughly trapezoidal, with one base approximately 1.5 centimeters long, opposite a side that extends approximately 3 centimeters with some slight curvature in the break. The other sides of fragment are approximately 4 centimeters, again with some slight curvature. The remaining side has a length of 3 centimeters. This larger fragment contains a section of the base, which can be used diagnostically to show that the inner diameter of the original piece was approximately 12 centimeters. As a result, about 10 percent of the inner diameter has been recovered. This piece also contains the oblique parallel pattern around the

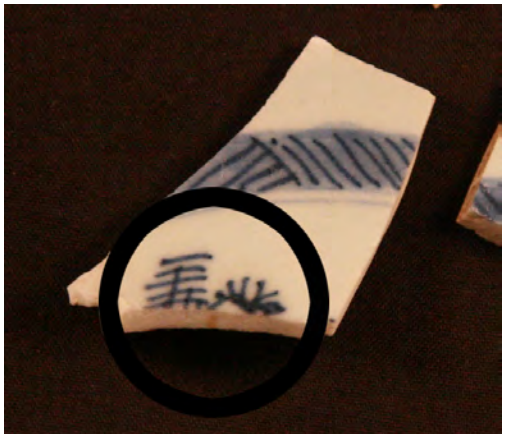
circumference of the inner circle of the base, but more interestingly contains some lines of the central pattern that decorated the center of the plate.

Canton porcelain has been found throughout JBH69, and has been uncovered in many contexts through the previous two years at JBH. Canton was produced from 1790 to 1835, and is named for the Chinese region where the porcelain was decorated. Market forces and trading patterns of the late 1700s make it relatively unsurprising to discover fragments of Canton in this colonial American yard. This type of porcelain was mass-produced in China after the American revolution, and the American market was one of the main destinations for the pottery. John Brown was one of the merchants who traded in porcelain, so it is not surprising to consider that his household used Canton or that Canton has been found on multiple occasions throughout excavations (FLMNH). Canton porcelain was usually made into bowls, plates or platters.

The glaze is typically somewhat flawed, with the occasional pinhole in the glaze's surface. The glaze of Canton is often described as having an oatmeal quality. The distinguishing paste is glass-like and vitreous, and slightly thicker than other types of porcelain. The resulting porcelain is white, sometimes grey-ish white (FLMNH).

Rim decoration of Canton ware was typified by blue lattice work, with an inner network of scalloped or wavy lines. The lattice work of the larger shards, which was removed from the rim, is not surrounded by any darker coloring, but the rim shard hints at a darker region of design below the oblique parallel pattern. It is logical to expect that just below this shard's break there is the typical scalloped or wavy line pattern typical of Canton porcelain (FLMNH).

Design execution is usually simple, using shades of blue from a watery, grey blue to a more saturated, vibrant cobalt color. The blue designs are applied in broad brush strokes into simply executed patterns. Motifs common to Canton porcelain were Chinese images, such as village or garden scenes including pagodas, bridges or boats. I believe that the small lattices of lines from the interior of the plate that remain intact in the larger shard are the tip of such a feature. A similar representation of nature or architecture (in this abstracted form it is difficult to tell what exactly the far off feature is exactly) is shown in the records of the Florida Museum of Natural History.



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December 13, 2010
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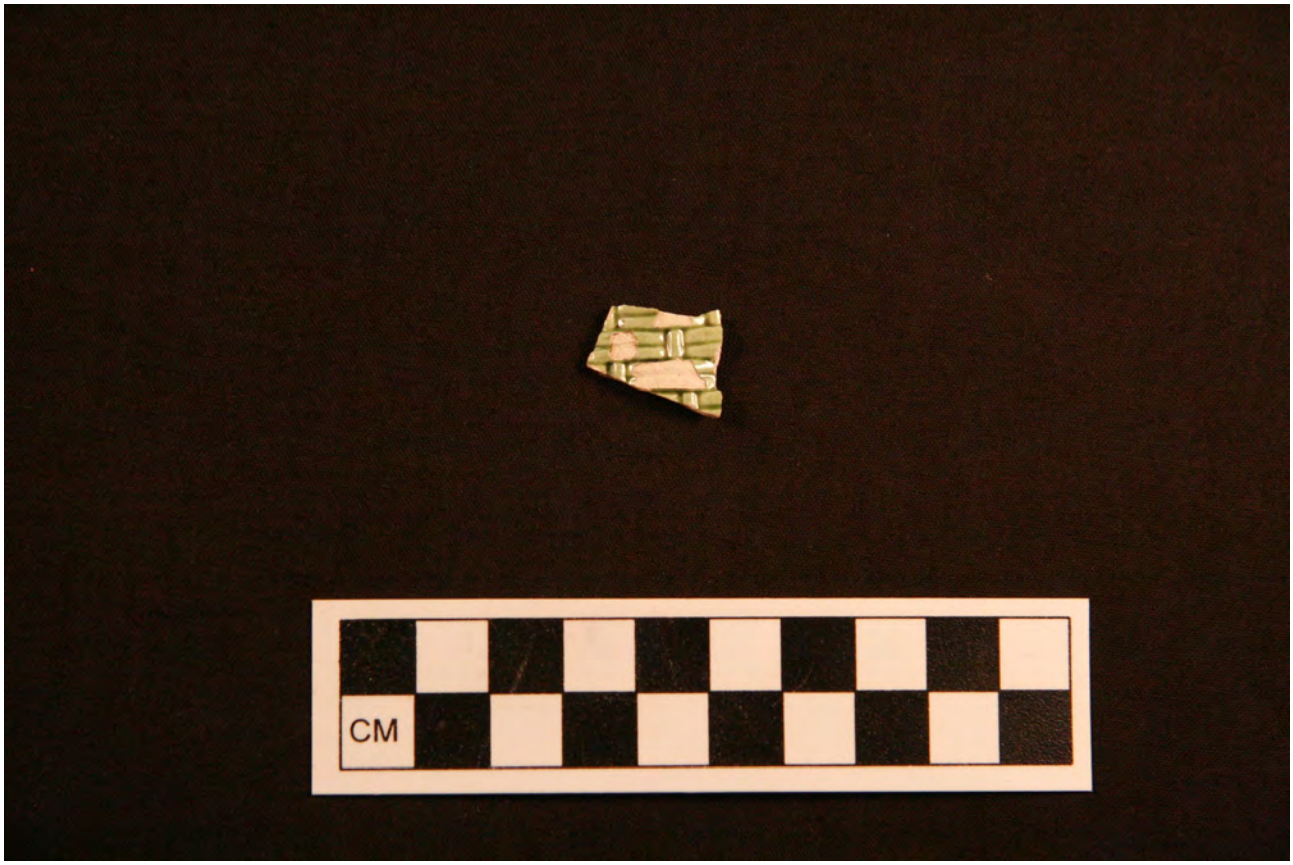
Basketry Creamware Sherd



The pottery sherd recovered from Unit 10 context 68 is distinctive for its decorative treatment – the appearance that the pottery itself is woven like a basket. Though the sherd is small, approximately 2cm by 1cm in size, the basketry detailing is quite fine, featuring three parallel pairs of vertical 'strands' woven through two horizontal narrow bands. Instead of applying or painting the basket design after the ceramic was formed, it seems that the basketry motif was directly molded and then incised to further accentuate the 'threads' of the weaving. Though the molding technique as a technology and the basketry motif have proved to be dead ends as diagnostic opportunities for narrowly dating the specimen, the other characteristics of the sherd identify this piece of ceramics as creamware and perhaps limits the production date of origin to c. 1765-1810.

On first glance, the sherd clearly fits within the historical period of refined earthenware and

can thus be viewed as a product of technological development. "Refined earthenware", also known as "china" and "semi-porcelain," refers to the ceramic products, made mostly in Britain from the 18th century onward, which capitalizing on the high demands for imported porcelain wares, attempted to emulate the style of this sophisticated ceramic type from China. The new technologies created well-made, cheaper substitutes for porcelain, but never achieved the pure white paste color and clinking sound of the Chinese version. Accordingly, the paste color presents the defining characteristic for dating refined earthenware, presenting a development over time from tans and creams toward whiter veneers. The category of creamware – featuring a conspicuously cream colored paste – represents the earliest period of mass production of such refined earthenware. The surface of creamware is also usually lead-glazed and less shiny in appearance than later developments of earthenware. Creamware was invented in 1762, popular until around 1780, and produced until around 1830.[1]

The basket sherd from Unit 10 is likely a piece of creamware from the late 18th century. The cream paste color is visible where the glaze has chipped off and on the side representing the inside of the vessel. As usual, the surface treatment features a lead-transparent glaze. According to University of Massachusetts Boston Archaeological Laboratory Artifact Codebook, the light green color of the glaze may place this sherd within the range of 1765-1810 when light green glazed white earthenware was mass produced and most widespread.

It is important to note that though manufacturing range of the object may be identified, this period should not necessarily be equated with the range of use on site at the Hale Ives House. Several studies indicate that ceramic artifacts have lifespans as much as fifteen years and more in a household before being discarded.[2] Decorative ceramics may also have a longer life span, since they are not merely useful and so may be passed down within the family. The cultural contexts – accounting for the the ways in which different types of ceramics enter and leave the household – is relevant to the interpretation of the sherd's use. Context 68 presents a deep context from which a

1 FLMNH website
2 Adams 2003, 38.

large quantity of artifacts were recovered, with dates ranging from 18th century hand-cut nails to early 20th century machine-made glassware. The soil content features a motley mixture of dark brown, slightly sandy soil, and lighter orange-brown soil, suggesting in combination with the combination of artifacts, that context 68 is a mixed waste dump deposit. The discarding of the pottery is a crucial part in its interpretation and the narrative of a mass dumping makes it much less surprising that this 18th century sherd was buried in close proximity to artifacts produced a century later.

Finally, from what type of vessel does the pottery fragment originate? There are two main diagnostic clues. First, the protruding ledge on the backside suggests that this fragment includes the rim of a vessel and, based on the width of the rim, at less than half a centimeter, it can be assumed that the vessel was quite small. Next, the fact that the decorative technique has only been applied to one side suggests that the original vessel was not an extremely fancy possession. As expected and confirmed by the slight curvature of the fragment, the decoration was only applied to the outside while the interior remains course and unglazed, suggesting that the original vessel may have been an object of practical use, as opposed to a purely decorative symbol.

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Glass Perfume Bottle

A whole glass container embossed with the name of a perfume manufacturer was recovered from Unit 10 Context 68 with its stopper still intact and a noticeable floral fragrance inside. The perfume bottle is made from opaque white glass and is small in size, approximately 7cm long, 3 cm wide, and 1.5 cm deep. The general shape of the body of the container, as viewed by a horizontal section, is ovoid with flat sides, while from a vertical reference point, the bottle is almost perfectly straight. The relatively long neck, which, at 3cm, is almost as long as the body, is cylindrical and maintains a constant diameter from its base through its finish. The finish (the top part of the neck of the bottle) is designed for a cork stopper, with a ledge partway down the bore, accommodating the stopper with its shank wrapped cork (that would have been held in place before the cork dried up and shrunk in size). The basal profile is shallow and concave, since the base is resting on the mold

seams on either side and the heel arches slightly up in the middle. A number of distinct diagnostic features date this bottle to the early 20th century, within a narrow range – c. 1904 at the earliest and 1920 at the latest.

The identity of the glass container is easily identified by the embossing on one of its sides, which provides the manufacturer's mark – Selick Perfumer New York. The embossing indicates that the bottle was used to dispense perfume and was manufactured by C. H. Selick, Inc., in New York. The embossing technique is one feature which identifies the use of a mold (as opposed to free-blown) manufacturing.[1] The high costs associated with buying a complete bottle mold with embossing for each size and shape of container explains the common public relations decision to advertise the name of the seller rather than the specific product.[2] The use of the expensive embossing technique pre-dates the bottle before the switchover to painted labels in the late 1930s/early 1940s.

A closer look at the characteristics of the glass narrow the manufacturing technique further, revealing that the container was molded using a fully automatic bottle machine, specifically the Owens Bottle Machine. The first fully automatic bottle-making machine, invented by Michael Owens in 1903, dips a parison mold into a revolving pot of molten glass and uses a suction action to force the hot glass into the mold.[3] Commercial production using the Owens machine began in 1904 and by 1917 was used to make more than half the bottles in the United States. By the 1920s though, Owens machine began to be replaced by feeder machines and production with Owens machines ceased completely by the 1940s.[4]

There are a number of diagnostic mold seams left by the Owens machine bottle-making process that are present in Selick Perfume bottle found at Unit 10. Most apparent is the continuous seam which extends from the base all the way up the body and over the finish to the edge of the rim.[5] This vertical mold seam distinguishes the Owens machine-manufacturing from the molded

1 Sullivan 1985, 76.
2 Sullivan 1985, 57.
3 Sullivan 1985, 38.
4 Sullivan 1985, 39.
5 Sullivan 1985, 37.

glassware that was popular in the late 19th century and early 20th century before Owens's invention. The molded glassware of that era depended on two-, three-, or four-piece body molds with a separate base part and therefore the mold seams were not continuous.[6] The finish was traditionally the last portion shaped, whether the technique was free-blown or molded, hand-made or semi-automatic, while the innovation of the Owens machine allowed the molding of the finish to be part of the first operation along with the rest of the bottle.[7] The other diagnostic mold seams, which are indeed present on the Selick Perfume bottle, are the horizontal seams encircling the top of the finish and another around the neck-finish junction.[8] Finally, this bottle also features a so-called "Owens scar" on its base, a circular, feathery edged suction scar. This scar is caused by the shearing of the glass to remove the bottle when the mold is full, resulting in a slight cooling of the glass surface where the shears make contact, leaving a small scar behind.[9]

The most unusual feature of this little glass bottle is its closure, which features a metal *and* cork stopper, which surprisingly has been preserved (given the propensity of cork to deteriorate). This type of stopper, known colloquially as a "sprinkler or squirt top" – offering a narrow hollow tube running through the entire enclosure – is designed not only to protect the contents contained within the bottle but also to allow the regulated flow of its contents out of the bottle without the need to remove the entire stopper. The stopper shank is wrapped in cork to hold it in place, while a horizontal metal disc sits on top of the bottle lip acting as a ledge. This particular metal stop features an external screw, indicating that an additional screw-on cap (now missing) was likely used to seal the contents from air exposure through the hollow opening. This is initially difficult to imagine, given that the dried cork has now shrunk around the stopper causing the cork to be removed when the metal cap is removed.

6 Sullivan 1985, 28.
7 Sullivan 1985, 39.
8 Sullivan 1985, 37.
9 Sullivan 37-38.

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Structural Clay Tile

This portion of a large clay architectural block recovered from Unit 11 was initially assumed to be a decorative brick but upon further examination must be identified instead as a typical, unadorned structural clay tile. Even though the block is broken off lengthwise, it is still much larger in size than any typical brick. The original width is unknown, but the remaining portion measures 14cm and 10cm along the two edges of one face and 8cm along both edges of the other face. The original dimensions are preserved for its width and depth, measuring 10cm and 12cm respectively. The general shape presents a regularized, rectangular prism with two parallel square cells (hollow spaces) cut all the way through lengthwise (from the preserved end to the now broken end). The surface texture is flat and smooth on one of the narrow sides and corrugated on the other three sides. The preserved end features a coarse matte texture. The dimensions, shape, and surface texture

guarantee the identification of this architectural product as structural clay tile and give it a post-1875 dating.

The standard definition of structural clay tile is “hollow burned clay masonry units with parallel cells.”[1] Structural clay tile is machine-made by extruding plastic clay through a die, letting the desired shape and size emerge, and then cutting the form off into units. The first hollow blocks produced in the United States were made in New Jersey in 1875.[2] The production spread quickly to other clay producing areas of the country and became widespread by 1909.[3] A major innovation was the use of parallel hollow cells (hollow spaces) to make the blocks more lightweight without sacrificing tensile strength. Before its invention, most buildings were constructed of solid load-bearing masonry walls.[4] However, with the rise of cast iron and steel, there was a need for lightweight backing materials for the facing masonry of these metal skeletal frames.[5] The ease at producing the soft type of clay required also gave structural clay tiles a cost advantage over traditional masonry units.[6] The machine technology also made the production of a wide variety of shapes and sizes immediately possible. The number of structural clay tile shapes and sizes produced by the industry reached its maximum c. 1889-1903, around the time a catalogue depicting hundreds of different shapes was published by the National Fireproofing Company of Pittsburgh.[7] The popularity and the continual use of this type of structural unit to the present day makes diagnostic dating opportunities unlikely.

The structural unit uncovered at Unit 11 may date as early as 1875 or any time later, as it represents the epitome of the structural clay tile at its simplest form. The relative size and the two parallel cells are the main defining features while the perfectly parallel faces of the block form emphasize that product is machine-made. The roughened surface texture on three sides, rather than representing a decorative motif, actually present a scored finish designed for plaster application.

1 Plummer 1950, 8.
2 Plummer 1950, 5.
3 Plummer 1950, 6.
4 Beall 1993, 62.
5 Beall 1993, 62.
6 Beall 1993, 63.
7 Plummer 1950, 7.

The combed grooves provide a good bonding agent between the application of plaster and the unit itself.[8] Meanwhile, with the reversal of our initial assumption, it also becomes clear that the smooth narrow side was intended as the wall facing exposed to exterior or interior elements. Structural clay facing tile in general feature a narrow color range and minimal variation in face dimension. This description matches with the tile at hand, which offers a smooth face on a typical rectangular prism with a medium to deep red veneer. The distribution of surface textures also suggest that the tile is designed to stack horizontally with identical shaped blocks. This building technique, called side construction, directs the stress perpendicular to the axes of the cells of the block.[9]

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8 Beall 1993, 65.
9 Plummer 1950, 60.

Clear Glass Medicine Vial Base
Brandon Delmore Tomasso

In Unit 12, JBH 69, excavators uncovered the broken base of a narrow glass bottle that seems to have been a medicine vial. A medicine vial is a bottle used for "storage, dispensing, and sale of medications" (PCGG 71).

On its base, the glass is cracked as if the bottle had been smashed. The glass is very smooth in its form as it curves fluidly between the body, the heel and the base. No design or imprints adorn the bottle base and the glass bears no tint or hue. In the middle of the base, there is a pontil scar. This marking appears as a small, circular blob of deformed glass.

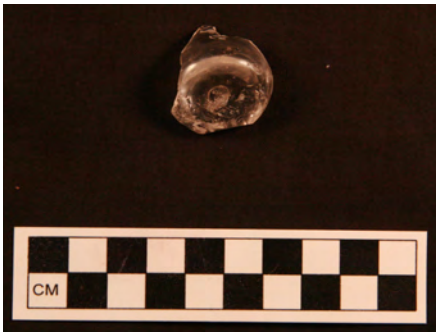

Figure 1: Glass bottle base found in JBH 69. Notice the pontil scar in the middle of the base.

The cylindrical shape indicated by the glass base is a notable feature of a medicine vial produced in the sixteenth to eighteenth centuries (Hume 42). Most medicine vials in the sixteenth and seventeenth centuries were blown with a colored glass ranging from amber to green (Hume 42). Clear medicine vials emerged in the mid-eighteenth century and grew more elongated (Hume 43). The base of one medicine vial from 1770, found in Colonial Williamsburg, bears a striking resemblance to the piece found at the John Brown House and could serve as a basis for identifying the artifact (Hume 43). This bottle is pictured on the right.


Figure 2: Two examples of 18th century medicine vials found in Colonial Williamsburg. The base of the vial on the right appears to resemble the base found in JBH 69. Photo courtesy of Noël Hume.

Judging from the pontil scar at the bottom of the base, this bottle was free-blown by human lung-power. A pontil scar is the mark on a glass bottle's base resulting from this method of manufacture. In order to blow glass, a glassblower uses a long hollow metal rod (known as a blowpipe) to mold molten glass into a desired shape. The glassblower gathers molten glass on the rod and rolls it on a round or flat surface in order to shape the piece (PCGG). During this process, the glassblower cools the glass and allows it to inflate by blowing a small amount of air into the blowpipe (PCGG). In order to form the bottle, a glassblower also uses either a mold of a certain shape (in which the molten glass will be contained as it is inflated) or hand held tools resembling scissors and pointed tongs (PCGG). The bottle is spun on its side using the blowpipe while it is shaped through either of these methods (PCGG). After it has reached the desired shape, the bottle is held in place at its base by a metal rod (known as a pontil) and the bottle is "finished" (Jones 155). The process of "finishing" consists of the shaping of the bottle's nozzle (the lip and rim, collectively known as the "finish") (PCGG). A pontil scar, as seen on this artifact, is left on the bottle's base when the pontil is removed from the bottle after finishing. It is clear that the artifact was not machine-manufactured since bottles produced in this way do not leave pontil scars (PCGG).

Figure 3: Another example of a pontil scar left on a free-blown bottle. Photo courtesy of the Society for Historical Archaeology.

Rather than being shaped by a mold, the bottle base appears to have been free-blown. When a bottle is molded, it leaves a mold seam on the bottle, resulting from the line at which each side of the mold is separated after the bottle is completed and can be removed (PCGG 23).

Decorative molds and printed lettering is also indicative of mold-blown bottles (PCGG 23). However, no mold seam, decoration or lettering is evident on the base of the piece from the John Brown House. Therefore, it is reasonable to conclude the bottle was free-blown. Of course, due to the fact that part of the remaining piece is cracked and much of the bottle is not present in our results, it may not be possible to see any decoration or mold seam the bottle may have once featured.

Molds came into use with the onset of the demands for large-scale production, standardization and specific shapes (PCGG 22). Prior to this time, glass bottles were all free-blown (PCGG 22). According to the PCGG, bottles were less frequently free-blown toward the first half of the eighteenth century; however, many medicine vials continued to be free-blown during the nineteenth century (PCGG 22).

Figure 4: A nineteenth century glassblower using a blowpipe. Image courtesy of Bristol Glass Company.

The date of the piece cannot be explicitly determined since free blown glassware may have been produced at any point in time from the technique's discovery to the present (PCGG 22). However, it is possible to infer that the vial was produced from the mid-eighteenth century through the nineteenth century. Since clear medicine vials began to be produced in favor of colored vials during the mid eighteenth century, the artifact is likely to have been produced after this time (Hume 43). Likewise, since medicine vials continued to be free-blown in the nineteenth century, the vial may have also been manufactured during this time, despite the predominance of mold-blowing (PCGG 22).

Within Context 69 and the rest of the unit, it is difficult to support the proposed date range for this piece. The context was greatly disturbed, therefore, other finds within the strata offer little diagnostic aid.

An abundance of glass shards found within the unit are clear, without any tint or hue. Clear pieces are either curved or flat. Also found within the context were ceramics dating from the seventeenth century to the nineteenth century, as well as undiagnostic building material.

From this find, it is possible to infer that inhabitants of the Brown family used patent medications at the time of the artifact's deposition. Since excavators of Unit 12 did not unearth any other pieces of glass distinguishable as medicine vials, it is difficult to draw deeper conclusions. Had additional medicine vial shards been discovered, it may have been possible to surmise a shift from the use of home remedies to the consumption of patent medications; as was concluded at the Spencer-Pierce-Little Farm in Massachusetts (Ryzewski 76). The abundance of medicine vials in the farm's archaeological record reflected the mass-production of these drugs and their growing use in the home during the nineteenth century (Ryzewski 76). In the case of the John Brown House, however, it would be premature to draw such conclusions at this point in the excavation.

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Hook-and-Eye Fastener
Brandon Delmore Tomasso

In Unit 12, JBH 69, excavators uncovered a small, fragile metal artifact, which appears to be part of a hook-and-eye fastener. A hook-and-eye fastener was used to fasten various articles of clothing from cloaks to socks (White 73).

Figure 1: Brass hook-and-eye fastener found in JBH 69.

Essentially, the uncovered hook-and-eye fastener is a thin brass wire, coiled into a 'T'-shape and bent in the middle of its base. In order to fashion the wire, imagine unwinding a paperclip into a straight wire. Bend the wire in half so the two ends are together. Then, bend a small portion at the ends of the wire away from each other so they are rounded and the tips point toward the straight portion of the wire (thus forming the "eyes"). In order to complete the piece; keeping the two halves of the wire together below the bent tips, bend the coupled wire at its lower third back toward the other side so it is parallel to the looped portion of the wire (thus forming the "hook").

The fastener measures approximately one cm from the point at which the coupled wire is bent to the point at which the looped hook appendages (the eyes) begin to take shape out of the straight wire. The back portion of the wire from the point at which the coupled wire is bent to its rounded tip (the hook) measures approximately 2/3 cm. One of the eyes is missing from the fastener and the piece is tarnished, but the artifact still remains clearly identifiable.

Hook-and-eye fasteners were used to join two ends of a garment temporarily in an "edge to edge closure" (White 74). For example, these fasteners were commonly used to close

men's coats and waistcoats (White 75). They came in various sizes and designs, although they maintained the basic form exemplified by the fastener found at the John Brown House (White 75).

These fasteners were used in England as early as the fourteenth century, as well as throughout the nineteenth century (PHM: 2009). Such fasteners still come into use today for various purposes, such as in jewelry; however, their use in clothing has been widely replaced (although similar fasteners are still commonly used in brassieres). In the eighteenth century, they were commonly produced separately from clothing by artisans such as jewelers, clockmakers and pin makers, who would sell them in their shops (White 75). At this time, hook-and-eye fasteners were made from copper (PHM: 2009). Between 1770 and 1775, hooks began to be manufactured with brass, and brass eyes would follow around 1815 (White 75). Tin also came into use during the late eighteenth century (White 75). Production later expanded during the nineteenth century to include black wire fasteners as well as fasteners of varying sizes and degrees of durability (White 75 & PHM:2009). Stronger fasteners came to be used in clothing with greater resistance at their closures, such as capes, skirts and trouser waistbands; while lighter fasteners were used for less strenuous fastenings on necklines or underclothing (PHM: 2009). Both the hook and eyes of the fastener found in Unit 12 appear to be made of brass; therefore, it likely dates from

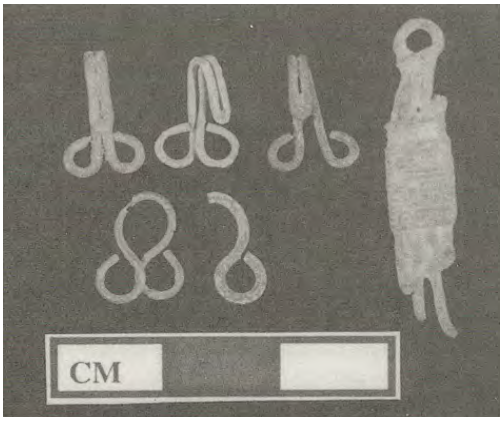

Figure 2: Other examples of brass hook-and-eye fasteners, found in New England. The fasteners at the top of the photograph most closely resemble the fastener found in JBH 69. Photo courtesy of Carolyn L. White.

the late eighteenth century through the nineteenth century. Given the change in production during the nineteenth century, it may be more likely that the piece was manufactured during the latter portion of the eighteenth century.

Within Context 69 and the rest of Unit 12, it is difficult to support the proposed date range for this piece. The context was greatly disturbed, therefore, other finds found within the strata offer little diagnostic aid.

Excavators found no other such metal pieces in Unit 12. The unit also did not contain any other clothing-related artifacts. Primarily, the unit consisted of ceramics dating from the seventeenth century to the nineteenth century, as well as glass and undiagnostic building material. The dating of the ceramics found alongside the piece supports the proposal that the hook-and-eye fastener dates from the late eighteenth through nineteenth century.

From this find, it is possible to infer, somewhat loosely; as to both the type of clothing worn during this time at the John Brown House, as well as characteristics of its owner. Hook-and-eye fasteners were most often "invisible forms of dress" that were not featured in an article of clothing for the sake of fashion (White 76). Thus, it is unlikely a fastener of this size and plainness would fasten a cloak, as men generally wore cloaks with larger, more ornate fasteners (White 76). Instead, this fastener may have been used for a less showy garment; something requiring less strength, such as underclothing or socks.

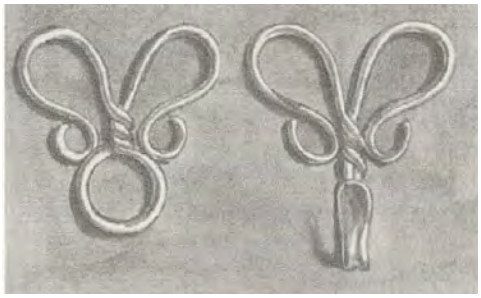

Figure 3: Example of a more ornate hook-and-eye fastener drawn in a nineteenth-century French catalog. Image featured in *American Artifacts of Personal Adornment, 1680-1820: a Guide to Identification and Interpretation* by Carolyn L. White.

Based on the nature of the fastener, its owner could be said to have either been a modest dresser or belonged to the lower to middle class. In fact, seventeenth century Puritans actually preferred the use of hook-and-eye fasteners because they were discreet; not gaudy as were buttons (Levy 120). This abstemious quality could possibly reflect the fastener's owner's reserved taste in dress, in much the same way as the Puritans. In addition, aside from copper, brass and tin, hook-and-eye fasteners could be made of silver, gold or other precious metals and be worked to reflect more ornate designs (White 75). As such, due to the fastener's plain design and brass composition, it could also be inferred that the fastener's owner was not affluent enough to afford these more valuable and decorative fasteners, or did not care to expend wealth on frivolities.

Unfortunately, due to the wide span of clothing for which this fastener could have been used by both men and women, and the lack of supportive evidence by way of additional artifacts of personal adornment or other fasteners, no interpretation or broader implications can yet be confirmed for this piece.

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Red Transfer-Printed Whiteware
Brandon Delmore Tomasso

Figure 1: Piece of red transfer-printed whiteware found in JBH 69.

In Unit 12, JBH 69, excavators uncovered a small fragment of a red transfer-printed whiteware.

The ceramic features a vibrant red print on off-white colored earthenware. At what could potentially be the outer portion of the original piece, is a winding, looping string of red. This winding string may be a border to the vessel's design since the other side of the line is predominantly blank; characteristic of the edge of a ceramic plate. The rest of the design, just below the looping string, consists of three solid, red, sweeping lines as well as small red speckles. The back of the piece is quite worn and is no longer smooth with a glaze. It has been chipped a great deal.

English pottery makers developed whiteware around 1810 (Stelle). Whiteware is marked by the paper-white color of its clay body as well as its sturdiness when compared to earlier ceramics such as pearlware. In terms of decoration, the onset of whitewares brought with it the use of bright colors such as red, green, blue and yellow (RMSC). Different types of whiteware include: plain, undecorated, hand painted designs, transfer printed designs, sponge ware, annular, luster and embossing, decal ware, art ware and fiesta ware (Stelle).

In England, during the 1820s, whiteware and porcelains began to surpass pearlware in terms of popularity (RMSC). Consequently, by the 1830s, whiteware became the most prevalent earthenwares in America (Stelle). America's biggest supplier of whiteware was in

Staffordshire, England (Stelle). Whiteware continued to be manufactured through the twentieth century and its production even continues today.

During the middle half of the nineteenth century, most whiteware was transfer-printed (Stelle). Transfer-printing was developed in England during the mid-eighteenth century (TAMU). This method of decorating ceramics consisted of an engraved copper plate being colored with an enamel glaze, transferred to paper and then pressed onto the piece (TAMU). At the onset of this technique, pottery makers used a thick paper to press the design, which, in effect, produced thick, dark lines (Stelle). Eventually, tissue paper came into use as it could create better-quality prints by impressing "graduated shadings" and finer lines (Stelle). An additional method of transfer-printing, known as the "bat process," arose early in the nineteenth century, (Stelle). This type of transfer utilized oil and a sheet of glue known as a bat, which could produce small dots that would form the design, instead of solely lines (Stelle). The piece found at the John Brown House appears as though it was transfer-printed using the bat process. A large portion of the sherd is comprised of small fine red dots which seem to form the larger image present on the original ceramic. This method of transfer-printing closely resembles comic book or newspaper illustrations, where images are formed through the use of many small dots of the appropriate colors. In art, this technique is known as dot-matrix printing or pointillism.

Figure 2: Another example of red transfer-printed whiteware. Part of the Spode Engravers Archive Collection. Photo courtesy of Craft Australia.

A key component in dating transfer-printed whiteware is the color of its print. For example, the popularity of red print peaked between 1829 and 1839, and its use on whiteware lasted until about 1850 (Stelle). Given that this date range is known for the piece, it is possible to further infer as to the design with which it was initially printed. According to the Florida Museum of Natural History's Historical Archaeology Index, "romantic views," such as landscapes and natural scenes, were the most popular "motif" during the 1830's; the time when red print enjoyed maximum popularity (FLMNH). The popularity of this style lasted until the emergence of Japanese styles in the 1870s (FLMNH). Since the "romantic views" were most popular when red print was most popular and Japanese styles did not come into use until long after red print ceased to appear on whiteware, it is highly likely this piece was adorned with the former. Perhaps, like many transfer-printed ceramics from this time, it may have once donned some sort of landscape image of a port and trade ships.

Aside from such speculation, it is difficult to infer as to other elements of the original piece. The sherd is far too small to indicate the type of vessel to which it may have belonged or its size. In addition, the edges are abraded so it does not reflect any particular style of ribbing along the original piece's edge. The back is also abraded, so no maker's mark is evident either. With the aid of either the vessel's ribbing or a maker's mark, it would have been possible to develop a more complete picture of the original piece.

Within Context 69 and the rest of Unit 12, it is difficult to support most proposed date ranges for its finds. The context was greatly disturbed; therefore finds within the strata offer little diagnostic aid. For this piece, however, it is possible to determine a very specific date range based on the characteristics it features. Due to the very specific time frames in which

whiteware as well as red print were popular, the sherd most likely dates to a ten year span between 1829 and 1839, although it may have been held in possession for an indeterminate period afterwards. Within this date range, both whiteware and red print peaked in popularity in America. Since red print continued to be used on whiteware until about the 1950s; however, it is still possible the piece was produced up until this point in time.

In Unit 12 excavators found two other sherds of red transfer-printed whiteware, both of which were much smaller in size and showed even less of the original design. Primarily, the unit consisted of ceramics dating from the seventeenth century to the nineteenth century, as well as glass and undiagnostic building material.

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