

UNDERSTANDING LANDSCAPE MODIFICATION AT WHITE SPRINGS MANOR,  
GENEVA, NEW YORK: AN ARCHAEOLOGICAL AND HISTORICAL STUDY

A Thesis

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By

Amanda K. Moutner

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## ABSTRACT

Applying landscape theory to the multi-component site of White Springs is particularly important for understanding large farm sites of the 19<sup>th</sup> and 20<sup>th</sup> centuries. This 900-acre farm in Geneva, New York went through many different iterations over a period of two hundred years, cycling between different types of farms, a dairy, a nursing home, and finally to its present configuration as a bed and breakfast hotel. Until the mid-twentieth century, the primary owners of the farm were extremely wealthy and all enjoyed periods of great success followed either by untimely death or natural disaster. While the house and landscape give an impression of wealth and solidity, the historical record does not substantiate this idea.

This thesis analyzes nearly one thousand 19<sup>th</sup> and 20<sup>th</sup> century artifacts excavated within the roughly 18-acre parcel of land on which the manor sits. Excavations were completed under the direction of Dr. Kurt Jordan of Cornell University and Dr. Michael Rogers of Ithaca College between 2007 and 2012 in an attempt to understand the extensive landscape modification which took place at White Springs within an historical and economic framework using archaeological materials. At White Springs the extensive landscaping ideologically conceals the uncertainties of the rich in capitalism and the unsustainability of wealth and opulence in daily practice.

## BIOGRAPHICAL SKETCH

Amanda Katherine Moutner is the daughter of David and Katherine Moutner. She studied anthropology and archaeology at Drew University and received her BA in Anthropology in 2009. Eager to continue her studies in archaeology, she began the MA program at Cornell University in 2011.

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## **Chapter 1: Introduction**

The multi-component White Springs site is located on the northwest edge of Seneca Lake in the city of Geneva in upstate New York. It was the location of a nucleated Seneca Iroquois village founded after the French-led Denonville expedition of 1687 destroyed earlier Seneca towns, and occupied until roughly 1715 (Jordan 2008:93). After the American annexation of Seneca territories, the property came into private Euroamerican hands in 1788 and in 1806, John Nichols constructed a large manor house on the site. The surrounding land was used as farmland, and in the early 1900s as grazing land for dairy cows (Belhurst). A fire destroyed the original manor house in 1876 and another dwelling was built in the same location in 1912 to replace it. Today, the second manor house operates as a bed and breakfast with regular visitors from the United States and beyond. Visitors to White Springs notice deliberate landscape modifications, including sculpted grassy terraces rising to the house on the property's east lawn and an artificial flattening of the natural terrain on the west lawn.

### **Research Question and Goals**

Located at the north end of Seneca Lake (Figure 1), the city of Geneva grew during the Industrial Revolution and was the breadbasket of the United States during World War II. Today, an historic town sits above the lake and much of the land on which White Springs Manor and the immediate surrounding area remains open farmland. The site was occupied on and off for more than 300 years and the land surrounding the manor house underwent extensive modifications over time. A combination of documentary and archaeological research provides the opportunity to assess the history of landscape modification that took place at White Springs. At its largest, the White Springs Farm was approximately 900 acres. Though the borders of this 900 acre farm are difficult to establish conclusively at any one time, the large white box in Figure 2 shows what I believe to be the greatest extent of the farm.

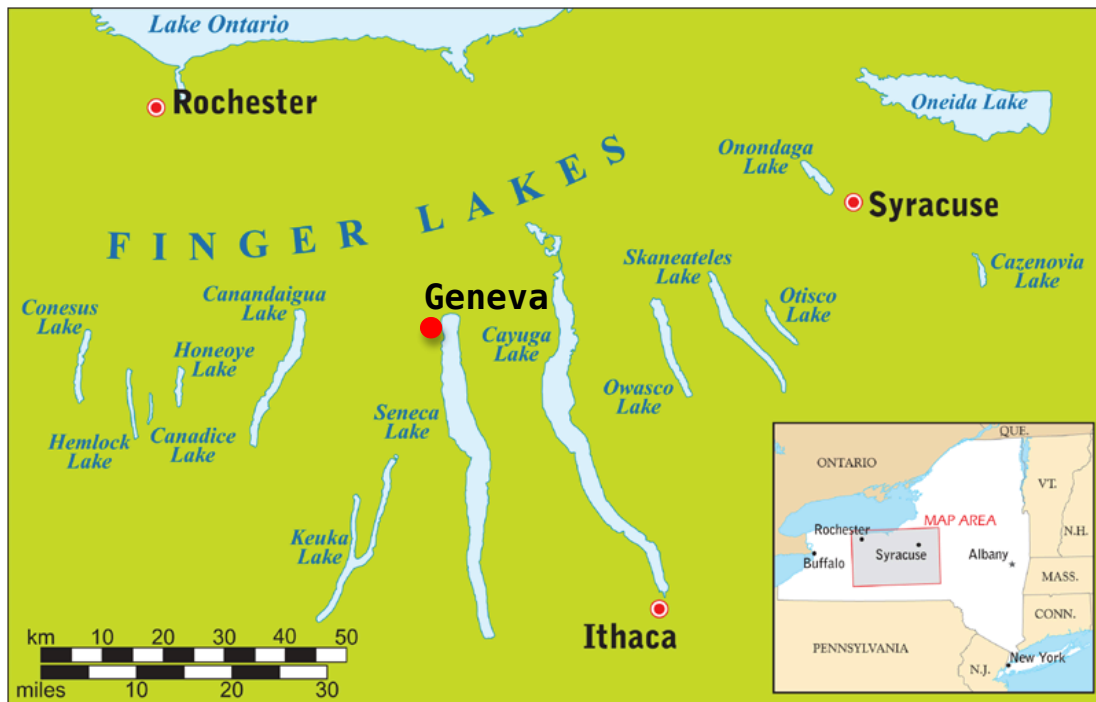


Figure 1. Map of upstate New York showing location of Geneva. (Kapon, 2013).

The area bounded in white at the top center is the manor house and the area of archaeological excavation; the area in the left center is the location of what is believed to have once been slave quarters (see discussion in chapter 2). The large white square in the bottom right incorporates what I believe to have been part of the fruit farm, based on the linear features that appear to be rows of plants, and by the street names (Orchard Park, Blossom Ln) that still remain.

Formal archaeological investigations began in 2007 under the direction of Dr. Kurt Jordan of Cornell University and Dr. Michael Rogers of Ithaca College and with the cooperation and guidance of the Seneca Nation. Between 2007 and 2012 Jordan directed field schools at White Springs, incorporating not only traditional archaeological techniques, but archaeogeophysical investigations. The focus of these excavations has been to determine the boundaries of the Seneca occupation, compile data on lifeways, and to study the site's larger geographical and geopolitical context (Jordan 2008; Gerard-Little 2011).



Figure 2. Map of White Springs and surrounding land. Areas of interest bounded in white will be discussed in the text. From Google Maps.

The excavations were confined to portions of two plots of land totaling 18.157 acres (Figure 3), which include the historic manor house. Buildings that were associated with the manor house owners that lay outside this area on other parts of the 900 acres will occasionally be discussed in this thesis, but my archaeological analysis focuses strictly on the 18.157 acres.

Although 19<sup>th</sup> and 20<sup>th</sup> century material was collected along with Seneca material during excavations, it was not the focus of the archaeological investigation, nor was it the focus of analysis in the lab. Additionally, the extensive 19<sup>th</sup> and 20<sup>th</sup> century modifications have disturbed nearly all of the Euroamerican contexts making analysis difficult. I have therefore divided the site into four different spatial zones, as dating the artifacts based on their location in different stratigraphic layers would be nearly impossible due to the history of disturbance. By separating the site into different zones, I am able to consider the artifact groupings in each zone and date these deposits more specifically.

Nearly all archaeological contexts containing Euroamerican artifacts also contained Seneca-era material, and so the dating of these contexts cannot be made on the basis of content alone. Instead, I have relied heavily on those Euroamerican artifacts whose chronologies are well established including ceramics, window and bottle glass, smoking pipes, and other similar artifacts in order to date contexts containing mixed cultural material. I have separated the White Springs site into four zones of investigation: the east lawn, west lawn, ridgetop, and vineyard (Figure 4). Using the above artifact groups, I dated each zone and then compared these dates to historical and archival records which discuss different periods of landscape use.

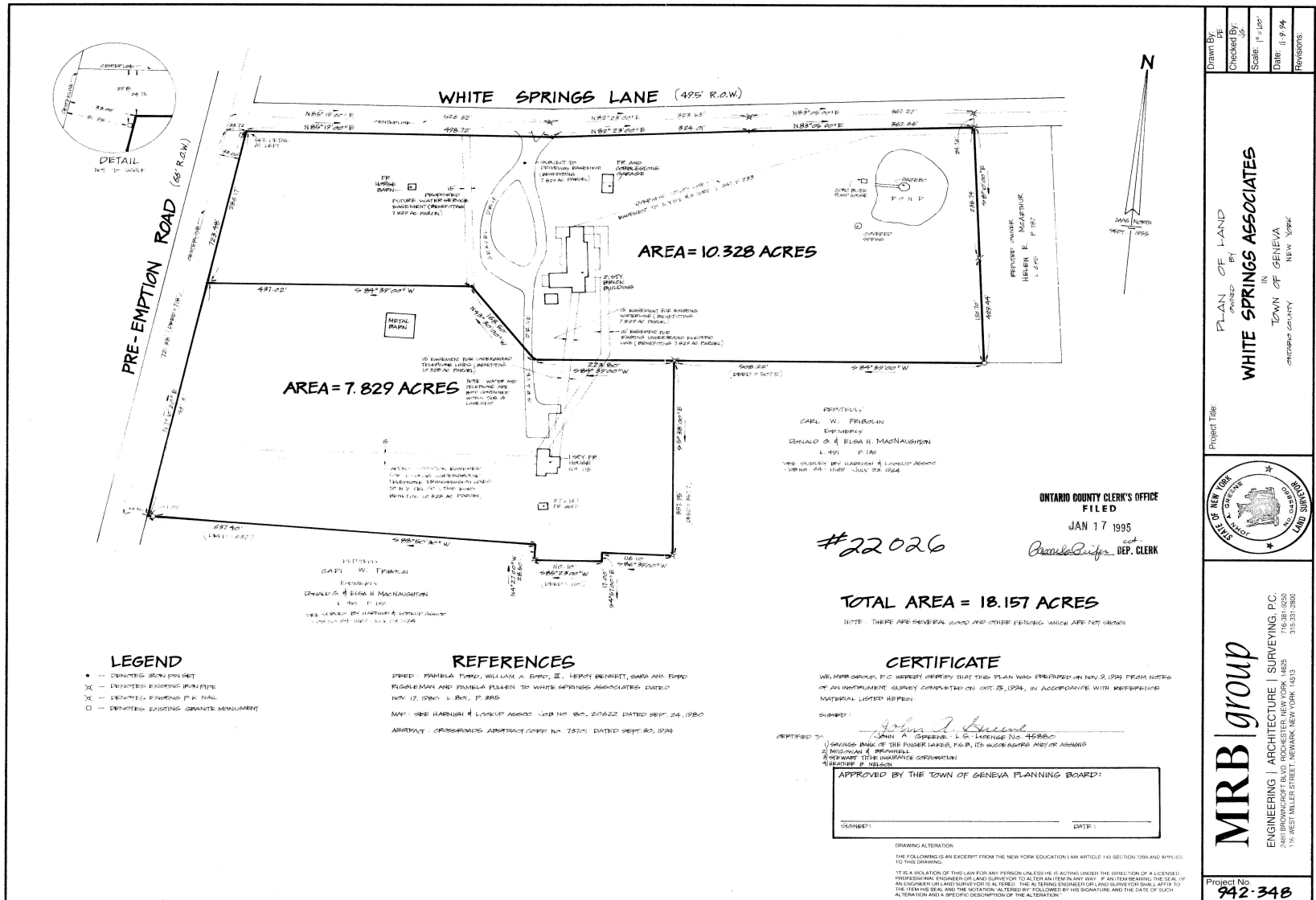


Figure 3. Area of archaeological excavation (1994 land map from the MRB group).



Figure 4: White Springs Manor with zones of excavation.

The different owners of the White Springs farm undertook fairly massive landscaping projects, but their reasons for doing so are unclear. Using landscape theory, including Leone's (2005) investigation of formal gardens in historic Annapolis, Maryland, and Yentsch's (1990) analysis of an orangery in the same city, amongst others, I hope to understand the social and economic factors which may have encouraged these periods of landscaping at White Springs.

Chapter 2 discusses landscape archaeology theory and briefly outlines the history of farming in the northeastern United States. Chapter 3 develops a historical chronology of Euroamerican occupation at White Springs, drawing from written histories, photographs, deed records, and agricultural schedules. Chapter 4 discusses different artifact classes and methods of dating, along with the distribution of these artifacts across the four zones of the site. Finally, chapter 5 outlines my conclusions and explore avenues for further research.

## **Chapter 2: Landscape Theory, Agriculture, and Formal Gardens**

Investigation of multi-component Euroamerican farm sites and excavations on large properties are not uncommon in archaeology. The body of literature on approaching and understanding farm sites has been growing steadily since the 1980s (Beaudry 2001; Heaton 2012; Smith 2012). Additions have also been made to the study of gardens as social and economic spaces (Baugher and De Cunzo 2002; Gleason and Miller 1994; Yamin and Metheny 1996; Kelso 1990; Brown and Samford 1990; Yentsch 1990; Leone 1990, 2005). Drawing on previous works, it is possible to understand the landscape modifications and the formal garden at White Springs as another example of such a space. When these modifications are examined within a broader archaeological, historical and economic framework, it is possible to understand more about the people who made White Springs their home. This chapter briefly discusses my methodology before discussing the history of agriculture in the northeastern United States. Finally, it outlines landscape theory from which the final analysis will be drawn.

### **Methodology**

Farms initially present a confusing picture to archaeologists who must deal with a plow-zone of disturbed earth and jumbled artifacts from different time periods and stratigraphic layers. This led archaeologists to generally avoid approaching farmsteads as viable sites until the 1980s when alternate approaches began to be proposed (Beaudry 2001:129), including remote sensing (Mascia 1994) and paleobotanical analysis (Ritchie 2010) to looking at so-called “disturbed” sites.

Though great strides have been made with regard to excavating and understanding farm sites, the general practice of farming and the analysis of the farm in its entirety are often still ignored (Beaudry 2001:129). However, advances in studying farmsteads have also been made (Mascia 1994; Baugher & Klein 2002). These include analyzing the farmland and all associated structures as one entity, and granting agency to farmers with regard to building choices, spacing

of structures, and management strategies (Beaudry 2001:129-30). I have made an effort in this thesis to identify farming as a social activity within a regional economic framework.

### **History of Agriculture in the Northeast**

Agriculture, as a commercial endeavor instead of small-scale subsistence efforts, began in the northeastern United States after 1700. By the start of the 19<sup>th</sup> century American farming had become geographically specialized and was operating in response to a market economy (Henretta 1973:23). An influx of immigrants in the 18<sup>th</sup> and 19<sup>th</sup> centuries, a practice of landed inheritance amongst the wealthy landowners in the American northeast, and the installation of southern-style plantations (complete with slave labor), provided a landless mass that went on to become the labor force which served many of the large farming enterprises of the 19<sup>th</sup> century (Henretta 1973:29). The industrial revolution in the early 19<sup>th</sup> century brought new innovations to the science of farming, allowing those with land to accrue wealth and raise their standard of living (Henretta 1973:35). Wealthy men were able to purchase land and organize farming efforts as a supervisor instead of a laborer. These so-called “gentlemen farmers” sometimes took active roles in the maintenance and operations of the business, though many were able to hire individuals to perform essentially all the functions necessary to the running of their enterprise. Certain crops were more economically viable than others, and it appears that the farmers at White Springs sought to take advantage of a number of economic opportunities. This versatility was more the result of attempts to adjust to changing markets and the economic environment than of ingenuity (Bidwell and Falconer 1925:131).

Horticulture, or the science of cultivating plants, became a popular and viable enterprise in New York State after the American Revolution. The timing, according to Hendrick (1933), is not accidental. The basic necessities of families and communities, those of growing fields and animal husbandry, must typically be met before a level of stability is reached which allows for the cultivation of less-essential flowers. The New York Horticultural Society was established on September 30, 1818, and was incorporated by the State legislature in 1822 (Hendrick 1933:384).

Commercial fruit farms began appearing in New York in the 1820s but did not increase in popularity until the 1860s. In the early to mid 1800s, theories about raw fruits and vegetables as causes for disease abounded and new theories stressing the nutritional benefits of fruits and vegetables did not enter mainstream consciousness until the 1860s (Tice 1953:22). This trend toward horticulture continued throughout the 20<sup>th</sup> century. At White Springs, this is reflected by the installation of a fruit farm and a shift away from traditional farming under the management of Alfred Lewis in the 1920s.

Bidwell and Falconer (1925) note competitive and oft-failing regional economies, and competition from coastal producers in the northeastern United States in the 18<sup>th</sup> and 19<sup>th</sup> centuries. Ford (2008) mentions additional competition from the Midwestern United States by the early to mid 19<sup>th</sup> century. With these competing factors, farmers were dealing primarily with small, regional markets rather than national or international ones. Farmers in the northeast were attempting to cope with a variety of pressures, both locally and more regionally, to which they responded in varying ways. One way of coping financially with these pressures is to limit production of certain crops or to modify the physical organization of farmsteads to maximize their efficiency (Ford 2008:61). A means of coping with pressures socially is to take control over the landscape through the creation of earthworks or gardens.

### **Landscape Theory**

Formal gardens were marks of wealth and status in that they represented a diversion from strictly subsistence activities and implied the existence of leisure time and disposable income. Formal gardens needed to be maintained and this work was typically performed by one or more hired gardeners whose main focus was the upkeep of the plot. As gardening became available to more and more middle-class families in the late 19<sup>th</sup> and early 20<sup>th</sup> centuries, the selection of plants and the ornamentation within the gardens became indicators of wealth and status in place of the mere presence of a formal garden (Leone 2005). There is also a social aspect to the presentation of power and the use of space on a large, visible farm like that at White Springs.

The individuals who owned the White Springs Farm were involved with the Geneva community through business transactions and social events. However, there is not necessarily a direct correlation between perceived wealth or power and a family's actual social and economic circumstances. Examples of this divide between reality and perception can be found at 18<sup>th</sup> century sites, such as William Paca's garden and the Calvery Orangery in Annapolis, Maryland; the garden at Bacon's Castle in Virginia; and many others.

At Paca's Garden, the 18<sup>th</sup> century formal garden was meant to present to the public an image of wealth and power. Interestingly, however, the formal garden became more and more elaborate as Paca lost more and more of his individual power, real or perceived (Leone 2005:67). Landscaping and the loss of power work in opposition: the wealthier one becomes, the less power they believe they hold and landscapes are one way to express ideologies of power that may not necessarily exist in reality (Leone 2005:82). Leone believed Paca's Garden was a function of Paca's decreasing perception of power (Leone 2005:63). The garden was built to convince others of Paca's standing in the social hierarchy by visually enforcing natural law and order. Additionally, Leone tracked the interactions between Paca and the people from which he bought his plants. His garden, then, served not only himself by implying wealth and power, but also the community as a point of social focus both visually and as a space to gather in and admire. This social function further enforces Paca's perceived position in the social hierarchy.

At the Calvery Orangery, the trees themselves and the surrounding manicured lot were installed as way for the Calvery family to promote their social standing by utilizing plants that were rare and exotic, and which visually represented a specific ideology of power and wealth to which the Calvery's ascribed (Yentsch 1990:170). Similarly, the garden at Bacon's Castle was both utilitarian and ornamental, laid out according to medieval tradition and including plants that served ideological and social purposes (Lucchetti 1990:39).

The formal garden at White Springs was planned just as carefully, with attention to position, size, and plants that were included. The garden sat to the south of the manor house and

appears clearly in photographs and in geophysical data collected by Gerard-Little (2011). Two photographs of the garden (Figure 5 and Figure 6) provide different views. Figure 5, taken in 1916 from the second story window of the house looking south shows a circular round of plantings, an arbor, large shrubs, and provides a view of two large rectangular planting area. Figure 6, taken standing in the garden and looking north toward the house, shows the same circular round of plantings, arbor, and row of plantings. Due to the number of similarities between the photographs, it appears that they were taken close together in time.

Photographs reveal other elements of the property: a spring-fed pond aesthetically augmented by a small gazebo, a pier, and decorative plantings sat on the east lawn (Figure 7). The manor house and grounds are clearly visible from the surrounding roads, and it is no surprise that the area surrounding the pond is so manicured. The formal garden was likely installed sometime during the early part of Alfred Lewis's time at White Springs between 1900 and 1916. Hyman Minsky (2008) amongst others, believed that instability is built into the system of capitalism: the rich get richer until they believe that failure is not an option. It seems likely that Lewis's situation was similar. Historical documentation reveals good agricultural yields, but good yields do not necessarily equate to financial stability. If, for the last decade or so of the 1940s when Alfred Lewis's operations in the region was slowly moving away from agriculture, he would likely have seen the impending decline. Though the garden was installed shortly after Lewis took control of the property, probably shortly after the new manor house was constructed in 1912, maintaining it, hosting community events, and utilizing the east and west lawn for purposes other than his predecessors, may have been ways in which he attempted to maintain his position in the Geneva social hierarchy.



Figure 5. Photograph, facing south, showing formal garden. Undated (GHS: White Springs, Box 3).



Figure 6. Photograph, facing north, showing formal garden. Undated (GHS: White Springs, Box 3).



Figure 7. Spring-fed pond on east lawn with gazebo and additional decoration. Undated (GHS: White Springs, Box 3).

Magnetometry revealed additional features that are not documented in photographs. An anomaly in the geophysics on the ridgetop matched the dimensions for a doubles tennis court exactly (Gerard-Little 2011:85). This clay court dated to a point before the cottage was built on the ridgetop some time after 1964 (Harnish and Lookup Assn. 1964). Geophysics also revealed a very clear “S” shaped anomaly on the west lawn, likely once a curvilinear path, which appears to wind in an east-west direction from the manor house throughout most of the length of the lawn. This may be evidence for a wilderness garden, and Leone (1984) notes that “romantic” or “wilderness” gardens were often placed where a formal garden existed as a means of counteracting the structure and rigidity of the formal garden.

Understanding the garden and landscaping efforts at White Springs within a context of competitive regional markets and constant uncertainties may help explain why these efforts were undertaken at particular times in the history of the site. The distribution of artifacts and the potential for dating each series of deposits will be discussed in chapter 4.

### **Chapter 3: The Euroamerican Occupation at White Springs**

Understanding the different periods of Euroamerican ownership is crucial to this analysis. Each individual owner of the farm modified the landscape to fit their particular needs. This chapter outlines the owners of the farm and those individuals leasing the surrounding properties in order to ascertain the historical conditions of each owner's occupation of the farm.

#### **History of Ownership and Land Use**

Conflicting charters drafted by King James I of England in 1620 and later by Charles II of England in 1662 granted the same portion of western New York State to both Massachusetts and New York (Faust 1921:253). These proprietary land claims were a cause of conflict until the matter was settled at a convention between these two states in 1786 at which time Massachusetts ceded all of the lands in controversy to New York (Faust 1921:253). In this agreement, New York retained its sovereignty, but Massachusetts gained preemption rights to buy any land occupied by the Native Americans and sell it (Eisenstadt et al 2005:1197). To pay off debts incurred during the Revolutionary War, Massachusetts sold its right to the lands occupied by the Seneca Nation in 1788 to the Phelps and Gorham Company (Eisenstadt et al 2005:1197). Phelps met with the Seneca Indians in the area and struck a controversial deal to buy the land. Phelps and Gorham later found themselves without the necessary funds to fulfill their obligations, and brought their case before the Massachusetts legislature. They were freed of their monetary obligations when the legislature annexed the territory, extinguishing all Native claims (Turner 1852:142). Disputes based on questionable treaties between Phelps and Gorham and both the Seneca Indians and Massachusetts continued, but all claims brought before the then-federal government were upheld in favor of Phelps and Gorham and their monetary obligations were dismissed by Massachusetts (Turner 1852:146). Shortly thereafter, Phelps and Gorham sold to white settlers for their own profit, and the towns of Geneva, Ontario, Canandaigua, and others were formally established by New York.

Research at the Geneva Historical Society uncovered information about the owners of the main farm and mansion at White Springs and deed records from the Ontario County Recorder's Office augmented the Geneva Historical Society records. The property in question contained hundreds of acres in a near-constant state of acquisition and sale. I have made an effort to synthesize these two archival sources as clearly as possible.

Documents at the Ontario County Recorder's Office reveal almost two hundred years of occupation and legal ownership. John Heslop, the original owner of the property, appears to have received his land as the result of the Phelps and Gorham purchase (Ontario County Recorder: 8-291). Heslop was the first in a line of visible and prominent owners, acting as the town clerk of Geneva. By 1804, the town of Geneva was comprised of at least 70 dwellings and was steadily growing (Milliken 1911:328). In 1802, John Rumney of Alexandria, Virginia, purchased 370 acres of land from Heslop. The next buyer appearing in deed records is John Nichols who built the original manor house in 1806. Along with his heirs, he held 367 acres of land in 1806 and later expanded his holdings to 1600 acres. Records are not available for all 1600 acres once the land begins to be divided through different sales.

The following account concerns those owners whose property included the manor house and includes the total landholdings of these individuals and associated buildings, and not just the land which is the basis of the archaeological investigations. Because the area of archaeological survey is quite small and is located very close to the manor house, the artifacts themselves do not provide a complete picture of owner activities. Therefore, these additional spaces are important to understanding the conditions in which each owner lived, and may help to explain why landscaping efforts near the house occurred. Understanding the private use of all owned farmland may help explain the choices made to the more publicly visible lands surrounding the manor house.

The original manor house was built by the Nichols family in 1806 (Figure 8) and appeared in the same form as its original construction when the Lees bought the property in 1817,

though it is first mentioned in the legal description as part of a deed recorded in 1833. The original transfer of 117 acres in 1817, which included the manor house, were later expanded by the Lees through a purchase of 350 acres in 1839 (see tables 1 through 3) (GHS: White Springs, Box 2).

Gideon Lee, mayor of New York City from 1833-1834, and his family held the property from 1817 until 1857. Census records from Ontario County, New York indicate that he married second wife Isabella Williamson in 1823 and they had four children: William, David, Gideon, and Charles (Biographical Directory of the U.S. Congress). Gideon was born in 1778 in Amherst, Massachusetts and enjoyed a career as a merchant before becoming a member of the New York State Assembly in 1822. He served one term as the mayor of New York from 1833-1834 and declined to run for reelection (Biographical Directory of the U.S. Congress). He did not leave politics completely and from 1835 to 1837 represented New York's 3<sup>rd</sup> district, which currently includes parts of Long Island, in the United States Congress (Biographical Directory of the U.S. Congress). Though he must have been away from White Springs often to fulfill his political duties, he nevertheless began farming and built a cobblestone ice-house, the first on the property. He made a profit by selling ice from the spring-fed pond (Geneva Gazette, 1874) along with other farm goods. He died in 1841, and his wife Isabella continued the farm and remained an active member of the Geneva community well after his death (GHS: White Springs, Box 2). Conover (1880) notes that before his death, Gideon Lee "commenced very extensive alterations, repairs and improvements on the farm" (Conover 1880:3). Among these improvements was grading in the adjoining lane and the west lawn, finished after his death in 1842 (Conover 1880:4).

Agricultural records from 1850 help illustrate what the Lees were doing with their property. The holdings for Isabella, William, and Gideon Jr. are illustrated in tables 4 through 7.



Figure 8: Sketch of the original 1806 manor house (GHS: White Springs, Box 3).

In total, the Lee family managed 292 acres of the White Springs Farm. Gideon was responsible for 75 acres of land; 30 of those were improved, 45 were not. He owned two horses, two cows, 100 sheep, and 4 swine at a total value of \$460. In a calendar year ending in June of 1850, he produced 100 bushels of wheat, 100 bushels of Indian corn, 240 pounds of wool, 20 bushels of Irish potatoes, 210 pounds of butter, and 60 tons of hay. He received \$30 from orchard produce and \$45 from slaughtering his animals. The total cash value of his portion of the farm was \$4,500 (US. Census Bureau 1850:921).

Isabella Lee was responsible for 42 acres of land. She owned five horses, 6 cows, and 8 swine at a total value of \$660. In the calendar year she produced 200 bushels of Indian corn, 80 bushels of Irish potatoes, 720 pounds of butter, and 20 tons of hay. She received \$100 from orchard produce, and \$75 from slaughtering animals. The total cash value of her portion of the farm was \$8,000 (US. Census Bureau 1850:921).

William Lee was responsible for 175 acres of land, and another 10 acres of unimproved land. He owned 2 horses, 13 cows, two oxen, 113 sheep, and 16 swine at a value of \$836. In the calendar year he produced 300 bushels of wheat, 200 bushels of Indian corn, 767 bushels of oats, 425 pounds of wool, 20 bushels of Irish potatoes, 860 bushels of barley, 1400 pounds of butter, and 65 tons of hay. He received \$70 from orchard produce and another \$280 for animals slaughtered. The total value of his farm was \$11,100 (US. Census Bureau 1850:921).

James Sheldon and his wife Jane bought roughly 265 acres of property from the Lee family in a series of deeds recorded in 1857 for \$37,500 (Ontario County Recorder, 111-507; 111-509; 111-511). Three deeds were drawn up, one each granting ownership from Isabella, David Williamson, and William Greighton to James and Jane Sheldon. It is unclear which of the Lee children owned the manor house. From these three deeds, we find that Isabella owned approximately 94 acres of the farm, David owned approximately 49 acres, and William owned 118 acres. In total, James and Jane came to own 261 acres of the White Springs Farm. What

became of the Lees remaining 31 acres is unclear through the chain of title, and census and agricultural records.

Sheldon owned the manor house and made the farm an exhibition farm, raising and selling Durham cattle. Catalogues of the cows for sale were available for the public, and the purebred cattle sold quite well. In September 1873, one cow, named the 8<sup>th</sup> Duchess of Geneva, sold for \$40,000 (GHS: White Springs, Box 3), roughly 80 times greater than the average yearly income for a North American family at that time (Derry 2003:26). Unfortunately, expanding agricultural markets in the west caused a recession in 1871 and Sheldon was forced to sell his exhibition farm. Records show that the mansion house burned to the ground in 1876. Sheldon sold the rest of his landholdings shortly after in 1877. Perhaps this tragic event, coupled with the recession, were too much for Sheldon to cope with financially.

It appears that multiple parties purchased portions of Sheldon's land after the exhibition farm closed. George W. Nichols, descendent of the original owner John Nichols, purchased 368 acres and began selling off portions (GHS: White Springs, Box 2). Later, William and Thomas Smith purchased an unknown acreage of the Lees' property 1877 for \$17,500 and it appears they were fairly entrepreneurial. For the first time in the history of the White Springs Farm, there is an industry schedule from 1870 that mention a cider mill owned by William Smith. The mill hired two workers and operated two months out of the year. In the same schedule, a T. Smith and Co. are mentioned, and the business appears to have been a nursery. It was a much larger operation than that of William's cider mill. He employed 24 workers and valued his products at \$26,000, well above William's income of \$1,000 (US Census Bureau 1880:219). William Smith is also recorded in 1880 as managing a gristmill which operated using a combination of steam and horsepower. It produced 1500 bushels of "other grains", 3,000 pounds of corn meal, and 81,000 pounds of animal feed, which are valued altogether at \$1,090 (US Census Bureau 1880:269). All businesses like the mill were conducted outside of the area which compromises the archaeological site.

Although the deed between William and Thomas Smith and Lewis was not available, Geneva Historical Society records note a sale of 260 acres in 1900 to Katherine B. Lewis (GHS: White Springs, Box 2). In the same year, Katherine Lewis transferred her land to her son Alfred Lewis. The ruins of the manor house remained and no replacement was built until 1912.

New building activity and production endeavors began after Katherine bought the land. She purchased the property as a birthday present for her then-21 year old son Alfred G. Lewis and built neighboring Bellwood Manor and farm for herself after giving Alfred White Springs (GHS: White Springs, Box 2). Katherine was an entrepreneur herself, breeding Shropshire sheep. She built a barn near Bellwood Manor to accommodate her sheep which burned in 1912. She replaced this with another larger and grander barn, which stood until 1930 when it too was destroyed by fire (Figure 9).

Alfred, like his mother, seemed to be well suited to the business of farming. He acquired surrounding farms and by 1921, White Springs had grown to 900 acres. Alfred built the still-standing Georgian-style colonial mansion on the foundations of the original manor house in 1912 and constructed various other buildings on the land including coach barns, a manager's house, a coach house, and several large stock and produce barns. Geophysics reveals the location of a 20<sup>th</sup> century barn on the west lawn near the manor house, but the additional houses and barns were built outside the boundaries of this archaeological study and no map of his total landholdings is available.

Alfred raised the largest herd of Guernsey cattle in the world, attributing their care to two hired Englishmen (GHS: White Springs, Box 3). Lewis quickly constructed a residence for the head farm manager across the lane from the Manor house in 1903. He put up four other residences, including a boardinghouse for 10 workers and clearly took advantage of seasonal field laborers. He also founded the successful White Springs Dairy (see figure 10).



Figure 9. Katherine Lewis' Shropshire Sheep and second barn (GHS: White Springs, Box 3).

The dairy produced its first milk in 1905 and Alfred registered a trademark for the dairy in 1908. Milliken (1911) notes that by 1905, Lewis had acquired 600 acres of land, “all in one piece with the exception of seventy-five acres of woodland” (Milliken 1911:447).



Figure 10. White Springs dairy trade mark (GHS: White Springs, Box 2).

The dairy's motto, "purum et bonum" (pure and good) was an important message. Health concerns about the pasteurization process and sanitation would have been strong enough to derail Alfred's business had he not been careful. Advertisements in local newspapers emphasized use of the most modern and sanitary buildings and equipment. In 1906 alone, Lewis had 800 pamphlets created, placed advertisements in the Geneva Daily Times, listed the business in the town directory, and bought advertising through the local Smith Opera House. It appears that the marketing worked and his business grew: by 1920 the dairy was producing both pasteurized and unpasteurized milk, cream, butter, buttermilk, skim milk, and cottage cheese (GHS: White Springs Dairy Ledgers, Box 3). In 1905 alone, the Dairy produced two thousand quarts of milk per day and employed 35 workers year-round (Milliken 1911:447).

Lewis ran the company as the president, hiring J. Murray Means as the treasurer and manager and Edward Cook as vice president. In the first decade of the 1900s, with the success of the business, Lewis bought an additional piece of land between Castle Street and Milton Street near the center of town for \$10,000 with the purpose of building a new dairy building (GHS: White Springs, Box 2). However, a cyclone in 1912 caused considerable damage to the farm, leveling the main group of dairy buildings and probably killing some of the animals, effectively ending the dairy era at White Springs (see Figure 11).

Instead of rebuilding, Lewis decided to begin to sell his profitable Guernsey cattle to buy more land and seek new opportunities (Finger Lakes Times 1981). By 1920, the cattle business had completely ended. Moving on to new endeavors, Lewis raised poultry between the years of 1912 and 1935 (Figure 12). The poultry business was left under the direction of manager Leslie Peterson and at its height had over 5,000 chickens laying eggs (GHS: White Springs, Box 3). In 1940, Lewis built a home on the land for then-poultry manager Parlett, a cottage for head gardener Mr. Millerd, and established a fruit farm.



Figure 11. Cow barn unroofed after 1912 cyclone. From Library of Congress.

By this point, the poultry business had run its course and the fruit farm was the next in a series of Lewis' business ventures.



Figure 12. Poultry at White Springs farm (GHS: White Springs, box 2).

At its largest, the fruit farm covered 11,000 acres, some of which may have been rented to others by Lewis, and produced 2.5 million pounds of food (GHS: White Springs, Box 3). The farm grew peaches, apples, and most notably, cherries. At its peak, the White Springs Farm produced 300,000 pears and 850-900 tons of cherries--10 percent of all cherries in New York State (GHS: White Springs, Box 3). Lewis might have attributed part of his success to his incredible community involvement. He held barn dances (Figure 13), housed a riding academy (Figure 14), and held a summer cherry-picking camp for young women.



Figure 13. 1914 barn dance hosted by Alfred Lewis (GHS: White Springs, Box 3).

The property remained in the hands of the Lewis family until 1949. By this time, the fruit-farming industry was beginning to change. Large labor forces were not as readily available and farmers began to realize that in order to keep up with other fruit-producing areas of the United States, a move toward mechanization would be necessary (Shepardson et al. 1970:2). Despite his previous success as a fruit farmer, Lewis was an intelligent businessman and likely foresaw the changes to come.



Figure 14. Riding Academy building at White Springs (GHS: White Springs, Box 3)

In 1949, Lewis sold 300 acres to Donald McNaughton (GHS: White Springs, Box 3). Two years following in 1951, he sold 18.74 acres and the manor house to Sarah Mandigo for the purposes of conducting the Margaret Ayre Nursing Home. An article from the Geneva Daily Times from October 24, 1951 mentions the grand opening of the Margaret Ayre nursing home, operating for “chronic cases, convalescents, and elderly patients” (Geneva Daily Times 1951:10). It specifically mentions the mansion house and its location just off of the Pre-Emption Road. Very little information is available about the nursing home, including how long it was in operation for, but it was closed by 1967. Another article from the Geneva Daily Times about the shortage of beds in long-term care facilities mentions new, more stringent standards put into force by the State Health Department. Apparently the Margaret Ayre Nursing Home failed to meet the new standards and was closed down (Geneva Daily Times 1967). It appears they remained closed for some time, as an article in 1969 by the Geneva Daily Times announcing the opening of a large-scale nursing home makes mention of all the operating nursing homes, and Margaret Ayre is not among them (Geneva Daily Times 1969:9).

Deed records show the sale of the property in 1975, pursuant to Ms. Mandigo's will, to Pamela Ford (Ontario County Recorder 1975:512-349), and another reference to the Margaret Ayre Nursing Home appears in a Finger Lakes Times article from 1980. According to the article, Pamela Ford had been operating the Nursing Home since 1972, three years before she acquired the property in 1975. This article mentions Ford's 1980 acceptance of a purchase offer from the White Springs Associates for the mansion house, cottage, and 18 acres of land (Finger Lakes Times 1980:7). New standards imposed by New York State requiring the installation of sprinkler systems appears to have placed a financial stress on Ford and likely influenced her decision to sell, and the author states that other requirements had to be met before the sale would be approved by the Department of Social Services. What these required alterations were is unclear, though it appears that the Margaret Ayre Nursing Home struggled to keep up with new regulations throughout the entirety of its operation. Finally, the 1980 article mentions that the White Springs Association intended to keep the property functioning as a proprietary home for the elderly, but no published sources are available which verify whether or not this occurred.

In December, 1994, the White Springs Associates sold almost 8 acres of land to Heather Nelson, and in May 1998, they sold the remaining 11 acres and the manor house to Duane Reeder. Nelson's purchase included the small cottage located south of the manor house and a metal barn near the northern edge of her property. Reeder's purchase included the manor house, grand driveway, spring-fed pond and gazebo on the east lawn, a small horse barn and a larger metal barn on the west lawn (both since dismantled) and the majority of the open space surrounding the manor (see Figure 3). The Georgian manor now operates as a bed and breakfast hotel.

Date of Deed	Grantor	Grantee	Consideration	Acreage	Lot/Block	Filing Ref
5-19-1817	Freligh, John & Mary	Lee, William	unknown	2	Unknown	Unknown
1-30-1857	Lee, William G	Sheldon, James D	\$50	118 17/23	Unknown	111-511
1-30-1857	Lee, David W	Sheldon, James D	\$10,000	49 8/9	Unknown	111-509
1-30-1957	Lee, Isabella	Sheldon, James D	\$10,000	95 24/25	Unknown	111-507
5-29-1877	Sheldon, James D & Jane M	Smith, Thomas & Willliam	\$17,500	Unknown	Unknown	162-302
7-5-1900	Lewis, Katherine B	Lewis, Alfred G	\$1.00	260 15/79	Unknown	317-135

Table 1. Chain of title from Freligh to Lewis.

Date of Deed	Grantor	Grantee	Consideration	Acreage	Lot/Block	Filing Reg
8-5-1910	Lewis, Alfred G	City of Geneva	Via public auction	1 47/50	Unknown	275-308
Unknown	Lewis, Agnes B et al (exrs. for Alfred Lewis)	Ward, Gladys D	\$3,500	Unknown	Unknown	493-187
4-25-1950	Lewis, Agnes B et al (exrs. for Alfred Lewis)	MacNaughton, Donald G & Elsa H	\$67,000: via will	18.74	Unknown	491-136

Table 2. Chain of title from Lewis to Lewis.

Date of Deed	Grantor	Grantee	Consideration	Acreage	Lot/Block	Filing Ref
8-14-1951	Lewis, Agnes B et al (exrs for Alfred Lewis)	Mandigo, Sarah	\$47,000	18.74	Unknown	512-349
11-8-1975	Kopald, Abraham & Wise, Nellie (exrs. for S. Mandigo)	Ford, Pamela et al	Pursuant to will	18.74	Unknown	760-575
11-17-1980	Ford, Pamela et al	White Springs Assocs	\$1.00	18.74	Unknown	801-385
12-28-1994	White Springs Assocs	Nelson, Heather	\$1.00	7.928	Unknown	949-633
5-1-1998	White Springs Assocs	Reeder, Duane R	\$1.00	10.812	Unknown	994-631

Table 3. Chain of title from Lewis to Reeder.

Owner	Year	Cash Value	Improved Acres	Unimproved Acres	Income: Orchard	Income: Forest	Income: Nurseries
The Lees	1850	\$23,600	292	Unknown	\$200	0	0
James Sheldon	1860	\$25,000	300	0	\$250	0	0
James Sheldon	1870	\$75,000	300	Unknown	\$200	0	0
T & W Smith	1880	\$50,000	400	100	\$500	0	\$28,000

Table 4. Lee to Smith: acreage and cash value.

Owner	Year	Horses	Milch Cows	Other Cows	Oxen	Sheep	Swine	Chickens	Value	Gain from Slaughter
The Lees	1850	9	21	0	2	213	28	0	\$1,956	\$400
James Sheldon	1860	15	30	50	0	5	7	0	\$10,000	\$325
James Sheldon	1870	12	10	75	0	10	0	0	\$60,000	\$200
T & W Smith	1880	15	3	1	0	650	0	50	Unknown	Unknown

Table 5. Lee to Smith: animals owned and cash values.

Owner	Year	Wool (lbs)	Eggs	Butter (lbs)	Cheese	Milk (gal)	Hay (tons)	Honey	Wax
The Lees	1850	2,065	0	930	0	0	145	0	0
James Sheldon	1860	570	0	600	0	0	175	0	0
James Sheldon	1870	350	0	500	0	0	350	0	0
T & W Smith	1880	840	100	0	0	0	0	0	0

Table 6. Lee to Smith: animal products.

Owner	Year	Wheat	Oats	Indian Corn	Irish Potatoes	Barley	Buckwheat	Grass	Clover
The Lees	1850	400	1047	300	40	860	0	0	0
James Sheldon	1860	500	700	450	100	700	0	0	0
James Sheldon	1870	350	1800	0	250	300	0	0	0
T & W Smith	1880	2200	70	1500	500	0	0	0	0

Table 7. Lee to Smith: crops harvested (in bushels).

## Slavery

Slavery at White Springs is not easy to address. As John Nichols and his brother-in law left Virginia with his extended family in the first years of the 19<sup>th</sup> century, they brought with them at least 70 slaves (Delle 2013:5). In a letter, John Nichols voiced his intent to establish a southern-style plantation in the north using slave labor (Delle 2013:5). Nichols' extended relatives, the Rose family, built Rose Hill Mansion to the east of White Springs across Seneca Lake (Figure 15). The slave quarters discussed below fall outside the boundaries of the 18.74 acres that are the focus of this analysis and no artifacts have been found that clearly indicate the presence of slaves on those 18.74 acres. However, slavery was a documented part of life at White Springs in the 1800s, and the economic repercussions of abolitionism may have contributed to the choices that owners of the manor house made.

According to U.S. Census records from 1810, the Rose family held 37 slaves. The remainder of the surviving slaves in 1810 are likely to have been held by the Nichols family at White Springs. Dr. James Delle, currently of Kutztown University, has studied slavery at the Rose Hill plantation and believes that White Springs closely mirrored Rose Hill in this regard. According to Delle, a house located nearly a mile away from the White Springs manor shares architectural and stylistic similarities to the slave quarters at Rose Hill. Additionally, gravestones purportedly from an African burial ground form a walkway on the property of the house near White Springs (James Delle: 2013, pers. comm), lending credibility to the hypothesis that these were indeed slave quarters.

If Nichols intended to establish a Southern-style plantation on his large property, the small house noted above must not have been the only slave quarters. Acres of fields stretch between the manor house and the alleged quarters, and these slaves were perhaps responsible for field labor. House slaves and those responsible for tasks occurring closer to the mansion house must have been housed closer to the manor itself. Unfortunately, structures near the manor are no longer standing, and it is impossible to know precisely where additional slave quarters may have



Figure 15: Location of Rose Hill Mansion and White Springs Manor. From Google Maps.

been. Although New York began a gradual abolition of slavery in 1799, it was by no means a quick or clear-cut process. New York's law freed the children of slaves born after July 4, 1799 at the time of their birth, but maintained that these children remain as servants to the legal owner of their parents until male children turned 28 and female children turned 25 (New York State Legislature 1799:(62)1).

Slaves that were born before this point were not freed, and were instead considered indentured servants. Though the title may have changed, the position of an indentured servant was essentially identical to that of a slave (New York State Legislature 1799:(62)1). Adult slaves under Nichols' command may have been at White Springs until Nichols sold the property. However, slavery was rarely profitable in the north in the same ways it was in the south, due more to economic conditions than moral or religious objections (Bidwell and Falconer 1925:118).

General agriculture pursued in the north using a variety of crops grown for a narrowly defined market failed to yield profits as it had in the south. Nichols would likely have been unwilling or unable to purchase additional slaves, and those persons he brought with him to New York may have been freed or may have been kept as indentured servants after the abolition of slavery to serve a variety of tasks. What happened to them after Nichols sold the property is uncertain, but it does not appear that any following owners employed slave labor, perhaps because all New York State slaves were freed on July 4, 1827 (Eisenstadt et al 2005:4). What happened to the additional slave quarters is uncertain, and without further archaeology covering more of the property immediately surrounding the manor house, there is little we can know about these people.

## **Discussion**

From these records, an interesting question about gender and farming arises. While the specific men's and women's activities on the 19<sup>th</sup> century farm is outside the scope of this particular project, it may be noted without drawing any bold conclusions that Isabella Lee operated in a different capacity than her male counterparts. Isabella Lee also played an active hand in the management of her family's farm. She grew only corn and potatoes, while the men grew the entire range of crops. She did not own any oxen or sheep, but that appears to be the only difference in her management of the animals. Perhaps the Women's Movement of the 1840s is the cause of her boldness, but whether this may be a simple division of labor or an indication of gender differentiation is unclear at this time.

Slavery is also an interesting issue to be explored. It is unclear to what extent slavery occurred at the property, but it is certain that slaves were at the property at some point in White Springs' timeline. By the time the Lees are at the farm, they had servants, not slaves. Though the slaves were surely freed in compliance with the New York State Law abolishing slavery in 1827, if not the 13<sup>th</sup> Amendment to the Constitution which abolished slavery in 1865, the Lees kept a house staff in keeping with expectations of a family in their high social position.

The many changes in ownership of the property and its division into smaller parcels through time make interpretation of use difficult. It is unclear how precisely the land was divided, as the records do not appear to show that one owner cared for the orchard, while another cared for the animals, and yet another grew produce for sale. Certain observations, however, can still be made. There was a clear intensification of sheep farming and wool harvesting in 1850 by the Lee family. The cider mill and flour mill owned and operated by William and Thomas Smith were perhaps also in response to changing market and buyer demands. It should be noted that 1880 was the first decade for which industrial schedules were available, so although this was the first documented reference, both mills may have been operating earlier. Though the mills were not within the area examined archaeologically, they were an interesting business venture that shows the range of economic avenues being explored. What is clear is that the farm, in all of its manifestations, was quite prolific in the 19<sup>th</sup> and early 20<sup>th</sup> centuries.

## **Chapter 4: Artifact Analysis**

The goal of this artifactual analysis is to identify the various types of materials recovered at White Springs and discuss their implications for dating and interpreting the different parts of the site. In this chapter, I discuss different material classes found at White Springs, identify dating techniques for diagnostic artifacts, and begin to explore the total amount and the distribution of these artifacts. The artifacts discussed are window glass, bottle glass, nails, ceramics, barbed wire, pipe stems, and slag. Artifact totals were compiled from all field seasons conducted from 2007 to 2012 and all areas in which archaeological excavation occurred. Because the Seneca occupation does not overlap with the time period for which this thesis is concerned, the large number of Seneca-era artifacts recovered during excavations are not discussed in this chapter. Artifact distribution across the site will be discussed at the end of this chapter, along with how these distributions indicate different periods of landscape modification.

### **Window Glass**

Window glass can be dated in a number of ways including by thickness, color, and the presence or absence of manufacturing byproducts such as bubbles. Early window glass that was free-blown or spun from a rod has a telltale circle of raised glass where the rod was broken off from the sheet and can be an indication of date. Unfortunately, all of the fragments in this sample are quite small and none exhibit such obvious details. I therefore chose thickness as a relative dating technique.

The thickness of window glass gradually increased throughout the 19<sup>th</sup> century. Using digital calipers, measurements of all the window glass recovered from White Springs test units were taken. I then applied two different approaches: Roenke's (1978) method of calculating the mode, and Moir's (1982) method of calculating the mean, choosing these two approaches out of the many available because of the large sample size with which I had to work. Roenke's model (Table 8) provides dates from 1810 through 1915 based on flat-glass thicknesses of 1.397 mm-2.667 mm (Weiland 2009).

0.055 in. (1.397 mm)	1810–1825
0.055 in. (1.397 mm)	1820–1835
0.045 in. (1.143 mm)	1830–1840
0.045–0.055 in. (1.43 mm)	1835–1845
0.065 in. (1.651 mm)	1845–1855
0.075 in. (1.905 mm)	1850–1865
0.085 in. (2.159 mm)	1855–1885
0.095 in. (2.413 mm)	1870–1900
0.105 in. (2.667 mm)	1900–1915

Table 8. Roenke's table of glass thicknesses and corresponding manufacturing dates.

White Springs glass fragments varied in thickness from 0.9 mm-3.0 mm. I have included those all fragments (Table 9), but have excluded those outside of Moir's provided date range from my calculations as outliers. Furthermore, those fragments in the White Springs sample that do not match the thicknesses provided by Roenke were rounded down to the next available value with the assumption that the natural processes of decay and patination could negatively, but not positively, affect the thickness of the shards. Roenke's method provided me with the following dates:

Number of Fragments	Thickness (in mm)	Manufacturing Date	Percentage of Sample
69	< 1.2	Pre 1810?	10.5%
138	1.2- 1.3	1810-1825	21%
13	1.4	1830-1845	1.9%
109	1.5- 1.6	1845-1855	16.5%
133	1.7- 1.9	1850-1865	20.2%
86	2.0- 2.1	1855-1885	13%
66	2.2- 2.4	1870-1900	10%
19	2.5- 2.6	1900-1915	2.9%
24	>2.7 mm	Modern	3.7%

Table 9. Flat glass fragments.

To check the appropriateness of this analysis, I used the following equation developed by Moir (1982):

$$86.22(\text{TH}) + 1712.7$$

where TH represents glass thickness (in .01 mm).

Applying a mean thickness of 1.69 mm (derived excluding outliers) produced a date of 1857.64. When the outliers were included, the date was reduced to 1855.03. This seems sensible because the historical information indicates that the mid 1800s was a profitable time for the farm and is likely the period in which a number of additional buildings were constructed.

The flat glass from White Springs is interesting in that it appears in a variety of colors. Clear and aquamarine glass appear in the highest quantities, with light blue, gray and light green glass also represented in the sample. These colors were achieved by additions of chemicals to the basic recipe of sand, soda ash, and limestone. Based on the colors represented, these were likely iron, copper, and manganese. Whether the colored glass is from stained glass is uncertain. All photographs available of White Springs buildings are in black and white, and as such do not indicate whether windows patterned with lead separations held colored glass. Because lead has also been recovered at the site, it is possible that the colored glass comes from such windows. Alternately they may be fragments of bottles with flat, square sides.

### **Bottle Glass**

Ledgers from the White Springs Dairy Company record purchases of bottles from the Lockport Glass Company, which produced glass from its factory roughly 110 miles northeast of Geneva, New York (GHS: White Springs, Box 3). This glass works produced glass from 1900 through 1946 (Dunn 1971:7). Lockport also made bottles for medicinal products; Mason jars for fruit; and beer and soda bottles (Dunn 1971:17). It seems likely that at least some of the glassware found at White Springs derived from this glass company. For example, glass that was received broken after shipment was typically thrown out with the rest of household trash, and finding glass in mixed contexts is not unusual. The Lockport factory produced glass in blues, greens, yellow-greens, olive-greens, blue-greens, and ambers (Dunn 1971:5). However, not all glass recovered was from milk bottles, and not all can be attributed to the Lockport Glass Company.

Bottle glass appears in a wide range of colors and manufacturing transitioned from free-blown to machine-made methods in the early 1900s. Pontil-marks and other scars from manual glass-blowing leave tell-tale indications. Unfortunately, the majority of the bottle glass in the White Springs sample is too small to bear such marks and most fragments lack other defining decorative features. Color and the presence or absence of marks such as bubbles and pontil-marks have thus been used as diagnostic features. It is important to remember that machinery to produce glass bottles was introduced in 1903, and paper cartons replaced milk bottles in 1942 (GHS: White Springs, Box 2). Cutting in more elaborate forms began in the nineteenth century on English and Irish glassware and continued after the pressed “cut” glass which began to be produced in the United States around 1827 (Noel Hume 1969:193). It is probable that a large portion of these bottle glass fragments are from glasses, decanters, vases, cut-glass boxes, or other similar objects. However, dome-shaped bell glass was produced in England and America throughout the 19<sup>th</sup> century and was used to house seedlings (Noel Hume 1969:226). Because White Springs was a working farm, bell glass should not be ruled out as a possible origin for some of the fragments identified as bottle glass.

Of the 702 bottle glass fragments recovered, only a small portion are in any way diagnostic. These include bottles with seams, modern labels, applied coloring labeling, pontil-marks, or bubbles. Bottle fragments recovered from TU 49 and TU 19 showed clear signs of applied coloring labeling, dating these bottles to 1934 or later (Lindsey 2013:2). Both these fragments are clear. Seams, an indication of mold-made or machine-made bottles, appear in 20 TUs and on glass in colors of aquamarine, brown, purple, light green, midnight blue, light blue, and clear. Bottle glass was being produced with molds as early as 1750, and the molds continued to evolve throughout the 18<sup>th</sup> and 19<sup>th</sup> centuries (Baugher-Perlin 1982:262-4). Different molds produced seams along the sides of the bottle, near the neck, at the lip of the bottle, or a combination of places. Because the fragments in this sample are so small, there is not enough visible information to draw conclusions from the seams themselves.

Bubbles also appear in glass from seven different test units. Of these seven, five are clear and the other two are aquamarine and opaque white in color. Bubbles appear in both mouth-blown and machine-made glass, though the frequency decreases once machinery is introduced due to the application of increasingly refined methods. Typically, very small bubbles are an indication of imperfections in machine-made glass, while larger bubbles are a product of mouth-blown glass. Unfortunately, assigning dates to different bubble sizes is not an exact science. All those that appear in this sample are quite small, and their infrequency within the larger sample likely reflects manufacturing imperfections. Finally, bottle necks displaying external threads are an indication that a screw-cap was used to seal the bottle. These appeared on toiletry and perfume bottles in the mid 1870s and continued throughout the 20<sup>th</sup> century. They were both mouth-blown and machine made, more concentric, perfect rings typically indicate machine manufacture. The two in this sample were clear and pink in color.

Color may be a better indicator of age, though the dates are imprecise. Opaque white glass, frequently called milk glass, was typically produced from around 1870 through 1920 (Lindsey 2013:2). Aquamarine was incredibly common as a “clear” glass before clear true glass became easier to produce, and was made from the late 19<sup>th</sup> century through the 1920s (Lindsey 2013:2). True blues were frequently used between the 1840s and the early 1900s. Greens, green-blues, and ambers occur so frequently throughout the 19<sup>th</sup> and 20<sup>th</sup> century that they cannot be used as diagnostic tools.

### **European-made Smoking Pipes**

European manufacturers decreased the size of the bore of their ball-clay pipes by about 1/64 inch every 30 to 50 years. Typically, older pipes will have a larger bore-hole than younger ones. Harrington (1954) proposed a classification system by which manufacturing dates can be applied using standard drill bits. Although Harrington acknowledged the wide range of variation and cautioned others to use the system only on larger samples, it was applied by Deetz (1996), Noel Hume (1969) and others working at early colonial sites. Twenty-six pipe stem fragments

were recovered at White Springs during the course of excavations and these have been tentatively dated using the drill-bit method (Table 10). Two of these fragments were too small to size, and four were made of red clay. The red clay pipes may have been locally manufactured and Harrington's method cannot be applied to them. Of the 20 remaining, the distribution was as follows:

Bore Size	5/64	6/64	7/64	8/64
Corr. Mfg. Date	1720-1750	1680-1720	1650-1680	1620-1650
Number Found	6	9	4	1

Table 10. Pipe stem bore sizes and artifact totals.

Using Harrison's method, the majority of these stems can be dated pre-Manor and are likely to be Seneca artifacts (Jordan 2008).

An additionally frustrating limitation is that Harrington's system extends only to 1800. Others including Binford (1962), Hanson (1969), and Heighton and Deegan (1971) have attempted to improve dating techniques using historical chronologies and various mathematical equations. The result of the majority of these studies is that pipe bowl shapes and sizes are a much better indicator of date than stem bore-hole size and, when checked against historical chronologies, can provide much more reliable manufacturing dates (Mallios 2005). In the case of White Springs, of the 20 European pipe bowl fragments in the sample, all are too small and lack any defining characteristics that might indicate manufacturing age. Subtle changes in bowl length, shape, size, and foot provide dates within 5 years of manufacture. Typically however, the bowl of the pipe is much less likely to remain intact in the archaeological record because they are likely to break after disposal. This was certainly the case at White Springs and so the presence of pipe fragments can tell us nothing more than the fact that European pipes were brought to the site.

## **Nails**

Nails provide another opportunity for dating deposits at historical sites. Visser (1997) documents the rapid technological advancements that took place between the 18<sup>th</sup> and 20<sup>th</sup> centuries. All nails were hand-made until the introduction of production machinery in the last

decade of the 18<sup>th</sup> century. Hand-wrought nails, dating before circa 1800, were hammered on all four sides and the head of the nail was added after the nail body had already been created. Cut nails were produced by machinery between circa 1790 and 1900 (Noel Hume 1969:254). Earlier nails dating between roughly 1790-1820 display a more rounded head and a square body that transitions to a circular form near the head (Noel Hume 1969:254). Later cut nails dating between roughly 1810-1900 have a softened square head and a uniformly square body. In 1850, steel wire nails were produced in France (Miller 2000:50), and by the early 1850s these techniques had been brought to the United States (Noel Hume 1969:254). However, wire nails did not become readily available until after 1885 (Miller 2000:50). These nails were produced in the same way that modern nails are and are indistinguishable.

At White Springs, many hundreds of iron artifacts were recovered. Although most were corroded to some extent, among these were 226 identifiable nails (Table 11). Thirty were hand-wrought, 136 were cut, and 60 were wire.

Type	TUs	STs	Vineyard	Total
Hand wrought	27	0	3	30
Cut Nails	112	4	20	136
Wire	60	0	0	60
Totals	199	4	23	226

Table 11: Nail totals by location.

From this information, the hand-wrought nails can be tentatively dated to the Seneca occupation at White Springs. The 136 cut nails cover a large time period, but date to the early years of the farm. The 60 wire nails date to around the time of the Lewis occupation and can potentially be quite recent.

### **Ceramics**

The high number of 19<sup>th</sup> and early 20<sup>th</sup> century ceramic fragments from White Springs can be attributed to the occupants of the two manor houses which stood on the site. The first house, built by Virginia lawyer John Nichols, was a large, colonial-style building that sat on a

portion of his 367 acres. The manor house was furnished in 1806 and stood until a fire destroyed it in 1876. A second manor house was built on the same site around 1912. Within this seventy-year period, the occupants of the house utilized many different types and styles of ceramics for a number of different uses. Although the ceramics can be tentatively dated to the time of manufacture, it is difficult to know precisely when they were used. Wares that show evidence of burning can be tentatively attributed to the first manor house. It appears that the wealth of the landowners allowed them to purchase more expensive types of ceramics, such as porcelain and the finely decorated hand-painted and transfer-printed designs. In addition, fragments from a sizeable amount of red earthenware vessels were recovered, indicating that these cheaper, utilitarian vessels were also in use at the manor.

The exact stylistic and functional details of most of the ceramics in this assemblage remain elusive, as nearly all fragments were very small and many of them have been eroded over time. The use of this site as a working farm and garden for nearly 150 years has obscured or destroyed much information. Constant plowing disturbed the natural stratigraphy and undoubtedly damaged and fractured what, at the time of its disposal, might have been larger fragments. Additionally, years in the ground have taken their toll on the ceramic fragments, stripping away glaze and eroding designs that might otherwise have been useful for diagnostic analysis. However, out of the 803 fragments collected during Cornell fieldwork, roughly 50 white earthenware fragments were of particular interest and of potential diagnostic value with regard to style. Additionally, porcelain, redware, whiteware, delftware, and yellowware of various types were represented in this assemblage. Because many of the ceramics were covered from test units of mixed Seneca and Euroamerican contexts, some wares may possibly have been brought to White Springs by Senecas. Certain materials also recovered at other Seneca sites, like Jackfield-type wares and unglazed redwares, suggest this possibility (Jordan 2008).

Eight hundred three ceramic fragments were collected in total (Table 12). Of those, 665 were from TUs 1-83; 26 were recovered in STs 1-60; and 112 were recovered during surface

collection in the vineyard. The vast majority of ceramics were recovered from the surface or from the upper two levels of the excavation units, at a depth which falls directly in the plow-zone. Fortunately, dateable ceramics show particular spatial patterns and can tell much about the socio-economic class of the user. Using these more interesting pieces, it is possible to provide a date range for the use of each type, and potentially provide information about the wealth and connections of the owner.

Type	TUs	STs	Vineyard	Total
Unglazed Redware	234	20	6	260
Glazed Redware	39	1	0	40
Painted Redware	11	0	0	11
Yellowware	14	0	0	14
Undecorated Whiteware	216	4	91	325
Creamware	33	0	2	35
Pearlware	15	0	2	17
Spongeware	1	0	0	1
Transfer Print	21	0	2	23
Hand Painted	10	1	1	12
Flow Blue	5	0	0	5
Edgeware	6	0	0	6
Burned Whiteware	24	0	0	24
Porcelain	21	0	2	23
Jackfield Type	1	0	0	1
Delftware	3	0	1	4
Stoneware	3	0	1	4
Buff-bodied Earthenware	2	0	1	3
Drainage Tiles	6	0	3	9
Totals:	665	26	112	803

Table 12. Ceramic categories and total sherd counts.

Twenty-three porcelain fragments were recovered from seventeen different units and the vineyard. The majority of these fragments were too small to provide useful information, though decoration was still visible on a small number of fragments. First produced in China in the 15<sup>th</sup> and 16<sup>th</sup> centuries, this type of ceramic entered the European market as an export item from China in the 17<sup>th</sup> century. By 1750, European manufacturers had begun producing their own porcelain and by around 1790, the manufacturing process had been perfected, and a type of porcelain called bone china was being produced and exported to North American markets (Brown 1982:1). This type of porcelain was difficult to manufacture well and was consequently expensive, making it a

luxury good. One fragment from TU 32 still has a visible blue china print design visible. The fragment is too small to make out more than a simple flower design. It is likely that this piece represents an example of bone china, as a post-1800 date is likely, and the fragment displays the thin walls indicative of bone china produced during this time period.

A few examples of polychrome porcelain were also identified in this assemblage. These multi-colored designs were produced in China from about 1662 to 1722, and in England from 1750 onward (Brown 1982:1). One fragment from TU 1 features a green painted leaf design, while another from TU 26 exhibits a green and red painted design. Finally, a third from TU 34 also exhibits a green painted leaf or tree design. It is possible that porcelain imported before 1722 could have been brought up to New York by the early manor owners during their move to the area in the early 1800s, but it is impossible to say with certainty whether this is the case or if these samples came from English manufacturers.

Fourteen pieces of yellowware were identified within the sample. These all appear to have been glazed, though only partial glazing remains on a few of the fragments. All share a distinctive yellow-tan coloring that is lighter than typical Rockingham ware, and lacks any design or decoration. Yellowware was an earthenware product manufactured between 1827 and 1922 in America (Brown 1982:4). It typically represents a cheaper, more easily produced product than something like porcelain, and is indicative of basic household or utilitarian uses due to its plain nature.

One small fragment of Jackfield-type ware was identified from TU 55, from which a mixture of Euroamerican and Seneca artifacts were recovered. This piece exhibits the dark red clay and shiny black glaze that is distinctive to its style. It is of particular interest because Jackfield-type ware was produced in England between 1745 and 1790, and American reproductions that were made in the 19<sup>th</sup> century lacked the deep red-purple clay, placing its time of manufacture before the building of the manor house (Noel Hume 1969:123). It is possible that the piece was acquired before the move from Virginia to New York, and the fact that only one

small piece was found indicates that it was somewhat of an anomaly, and may represent one remaining piece from a long-held set. The vessel forms of Jackfield-type ware were almost exclusively tea sets and so its inclusion in the refuse assemblage may point to some level of use in social settings where the owner was entertaining (Noel Hume 1969:123). However, Jackfield-type ware was also recovered at the Seneca site of Townley-Read and was available at frontier posts (Jordan 2008:146) and so it is possible that this material was introduced by the Senecas to White Springs.

Redware was present in large quantities in the assemblage, representing roughly one-third of the entire ceramic sample, and can be split into different functional categories. Drainage tiles, flowerpots, and other utilitarian wares both glazed and unglazed were made out of red earthenware clay. One hundred thirty fragments have been tentatively identified as flowerpots based on a number of criteria. These appear either thin-walled in typical flower-pot red coloring, or are darker in color with thicker, coarser walls. These are typically unglazed and undecorated, though some fragments exhibit basic incising details in the form of straight lines near the rim or base of the piece. Additionally, the few rim fragments that were recovered are of typical flowerpot style with a large, thicker band of clay at the top which forms the lip of the vessel, and thinner walls throughout the rest of the vessel. These flowerpots were easily made, inexpensive, and fracture fairly easily, so their prevalence at the site is not surprising given the size of the house and the likelihood of their near constant use in decorating the exterior space. It is certainly possible that some of these redware sherds are fragments of Seneca-era cooking vessels, though they would have been European-made and introduced by trade.

Nine fragments of drainage tile were present. These redware pieces were coarse and thick-walled and are identifiable by their shape and coloring. Though the tiles are difficult to date with precision, they obviously represent the manor house period and are of potential interest with regard to their use in modifying the landscape. These sherds were recovered on both the ridgetop as well as in the vineyard. These tiles would have been available for purchase in New York after

1838, when John Johnston of Geneva, New York, promoted drainage tiles for farm fields (Baughner 2001:26).

The majority of the redware pieces were small and did not exhibit any particular decoration. They have been identified as redware ceramic and not brick by their size, shape, and composition. Those redware pieces that were identified as such were very smooth and compact, were too thin to be brick, or had a visible curve or bend. However, it should be noted that some portion of what was labeled as ‘brick’ may in fact be redware, but is either too small or too degraded to be identified as such. Those pieces that could not be confidently called redware were not included in this analysis. Redware pieces were typically made with locally available clay and fired at low temperatures, and as such, was done easily throughout many parts of the American northeast. These wares would likely be utilitarian, used for storage or perhaps baking and cooking. Finally, three fragments were slipped, one red, while the others were slipped a yellowish-green color. Slipping points to their use as a container of one sort or another.

Many different styles of whiteware and creamware were identified from the ceramic assemblage (Table 13). These range from mass-produced designs to hand-painted wares and date from the early to mid 1800s (Table 14). The wares in this category typically have a clear lead glaze which was applied after the pattern was printed and before the piece was fired.

Type	Number of Sherds
Flow Blue	5
Hand Painted	12
Blue Transfer Print	23
Pearlware	17
Creamware	35
Edgeware	6
Spongeware	1
Undecorated or Burned	349
Total	448

Table 13. Breakdown of whiteware ceramics by count.

Type	Production Date From:	Production Date To:
Delftware	1600s	1800s
Jackfield Type Ware	1740	1790
Annularware	1785	1840
Hand Painted Pearlware	1795	1830
Pearlware	1795	1830
Creamware	1785	1830
Edgeware	1800	1830
Porcelain	1800	Present
Blue Transfer Print	1817	1900
Hand Painted Whiteware	1820	Present
Yellowware	1827	1922
Spongeware	1830	1871
Flow Blue	1844	1860

Table 14. Ceramic typology and manufacturing dates.

Josiah Wedgwood can be credited for perfecting whiteware production, including the production of creamware and pearlware pieces. When he began production on his own in 1759, he perfected a green-glazed creamware that was not very popular (Noel Hume 1969:125). He turned his attention to perfecting creamwares and from 1765 to 1770 began experimenting with an even whiter-bodied ceramic (Noel Hume 1969:128). Though he did not produce these whiter-bodied pieces in great quantity, other potters followed his lead and began producing similar wares of their own. Pearlware, however, was popular in almost every form until roughly 1820 when it began to lose favor in the face of new semi-porcelain and harder whitewares (Noel Hume 1969:131).

Blue-transfer print designs are the most common among the decorated whiteware fragments available for analysis, accounting for 23 of the 70 diagnostically useful fragments. This blue-transfer print design was commonly produced from 1830 to 1860 (Brown 1982:6). Unlike hand-painted wares of the same time period, these pieces could be mass-produced much more easily by having an artist render one copy of a design and then using it as a template for all the pieces in a particular set. Transfer-printed wares can be most easily dated by identifying the pattern that was

chosen. Unfortunately, none of the fragments from White Springs are large enough for the pattern to be identified. Another possible dating method is by color of the print. Dark and medium blue colored transfer-printed wares were produced between roughly 1817 and 1835 (Samford 1997). Because of the ease of manufacture, they would have been relatively inexpensive to acquire.

Five fragments with a flow-blue style were identified as well. These pieces were produced between 1844 and 1860 and have a distinctive dark blue over-inked appearance (Brown 1982:6). One fragment from TU 60 has an identifiable flower design, while the other two are too small to positively identify any decorative features.

Both blue and green edgeware were identified in the assemblage. Edgeware was produced between 1780 and 1860 on creamwares by Josiah Wedgewood (Hunter and Miller 1994:443). The blue edgeware from TU 56 has a scalloped rim and judging from the size and decoration of the sherd is almost certainly from a plate. This type of blue scalloped edgeware was produced between 1800 and 1830 (Hunter and Miller 1994:443). The green edgeware from TU 82 exhibits similar characteristics and can also be dated to 1800-1830. These types of creamwares were inexpensive in comparison to other colored wares and were produced in great quantities throughout the early 1800s (Noel Hume 1969:131).

Annularware is typically identified by a banded design, or rings of color, running around the body of the piece. It was produced in England and the United States between 1785 and 1840 and typically took the form of bowls, mugs, and jugs (Noel Hume 1969:131). The coloring was usually earthy, muted colors in green, blue, brown, black, red, orange, and sometimes muted yellow. These wares were slipped in bands of varying widths and are dated based on their application to either whiteware, creamware, or pearlware. The annularware in this assemblage is taken from units 56, 64, 65, 66, and 71. All four fragments from each of these five units exhibit the telltale blue-tinted glaze of pearlware and can be tentatively dated more specifically between 1790 and 1820 (Noel Hume 1969:131). As all but unit 56 are located on the east lawn of the

property, the use dates of annularware may be used to date some of the other materials found in these units and from around the rest of the site.

Four of the whiteware fragments were identified as spongeware. One was a purple-red color found in TU 67, while the other found in TU 5 had blue coloring. This sponge-decorated whiteware was produced between 1830 and 1871 (Brown 1982:6). It was originally manufactured in Glasgow, Scotland for marketing as inexpensive utilitarian wares, and production eventually spread to Staffordshire, England before finally spreading to North America (Brown 1982:6). The chrome red and pink coloring became common by about 1830 in England (Brown 1982:6) and so the spongeware in this assemblage may be confidently dated to post-1830. The fragments in this assemblage are small and lack a maker's mark or other diagnostic features, and so it is impossible to know from where these wares were made. However, regardless of their place of manufacture, this style represents a functional, inexpensive choice by the owner.

Hand-painted wares were more costly due to the labor necessary to produce each piece. The individual vessels were painted one at a time, and thus could not be as easily or as quickly produced as the transfer-printed pieces. These pieces were produced as either creamware or pearlware, depending on date and place of manufacture. The design was painted either over or underneath the glaze, and both methods conferred different advantages. Painting done over the glaze typically wore off faster, but allowed for the possibility of wider color usage, as the colors were not absorbed into the glaze (Noel Hume 1969:128). Painting done before the ware was glazed meant that the design would survive longer, though it might appear less crisp. The most common color on the sherds from White Springs is blue. Hand-painted sherds from units 52 and 64 are solely blue, while a sherd from unit 65 has both yellow and blue, and a sherd from unit 66 has both green and blue. The design on the fragment from unit 52 appears to have been done over the glaze, as it has almost completely worn away while clear glaze is clearly visible around the pattern. Overglazed wares would have been more expensive, as they required a second firing to fix the colors and were common in the last quarter of the 18<sup>th</sup> century (Noel Hume 1969:128).

The remaining hand-painted wares from units 64, 65 and 66 are all underglazed, as the design is clearly visible under a clear glaze. This underglazing became popular by the early 19<sup>th</sup> century (Noel Hume 1969:128). Polychrome wares like these were produced most commonly between 1795 and 1830 (Noel Hume 1969:128).

Delftware is the last, and perhaps most interesting, ceramic class. Delftware was originally produced by the Dutch in the early 17<sup>th</sup> century. It was a very popular style and Dutch potters began to bring the style to Britain after 1749 (Noel Hume 1969:108). Delftware vessels took the form of mugs, jugs, candlesticks, vases, chamber pots, and drug pots in the 17<sup>th</sup> century (Noel Hume 1969:109). By the 18<sup>th</sup> century however, Chinese porcelain was in direct competition and Wedgewood's ceramics surpassed the delftware producers. As a consequence, the delftware potteries began to close. It is not surprising that only 4 delftware fragments were recovered at White Springs, and it is likely that they were brought to the property by one of its first owners, or by the Senecas.

The range of ceramics in this assemblage encompasses a wide variety of types, both expensive and inexpensive, which speak to the array of activities occurring at this manor house. Utilitarian vessels, like those made of yellowware or redware, were likely locally produced and cheaply made and acquired. These would most likely have been used as storage containers or cooking or baking vessels, and pertain to the everyday functioning of the household.

The more expensive objects, like the finely decorated and possibly imported whiteware, creamware, and pearlware, speak to a desire for popular fashion on a modest budget. The variety of different styles encompassed show the change in popular style through time and the acquisition of these pieces by the owners of the manor house. Finally, the porcelain pieces and the Jackfield-type ware (if it dates to the Euroamerican occupation) indicate that the occupants of the manor house were able to acquire wares of the upper class, and could afford at least a small sample of these pieces that were almost certainly used as tea sets and serving pieces while entertaining guests.

The wide range of production dates for most of these ceramic types makes the time of use difficult to assess. Landscape modifications and the possibility for extended use of these vessels throughout decades further complicates analysis. The only certain conclusions come from the original manufacturing date of each type. Those produced in the 1700s, like the Jackfield type ware and some annularware, may have arrived with John Nichols or John Rumney in 1802. Early porcelain, edgeware, and hand painted whiteware may have also traveled with him and his wife from Virginia to New York. Those styles that did not begin production until later, such as the blue transfer printed pieces and spongewares, could not have been purchased or brought to the property before the Lee family came to own the land in 1817. For the owner of a profitable farm, none of these ceramic types would be outside his purchasing power.

The delftware is an interesting find, as it dates much earlier than the other ceramics in the sample. Though redware and stoneware were being produced in New York and surrounding states in the early 1800s, earlier finer whitewares were likely imported from England. Yellowwares would have been available at around the same time: an early pottery established in Dutchess County, New York opened in 1797 and produced yellowwares, and more factories opened in the mid 1800s (Eisenstadt et al 2005:302). Post 1871, whitewares would have been available much more locally. Syracuse China, Buffalo Pottery, Chittenango Pottery, and William Boch and Brothers all operated in New York after 1871 (Eisenstadt et al 2005: 302).

### **Barbed Wire**

Styles of barbed wire, like many other material types, changed throughout time. These styles are recorded in U.S patent records and can be dated based on the date the patent was granted. The style is easy to match to patent images by noting the number of wires, their curvature, the number of barbs, and how they are wrapped around the wire or wires. The barbed wire recovered from White Springs is particularly interesting, as it can provide a more specific time during which the land near the manor house was being used to graze animals.

Pieces of barbed wire fence were recovered from ST 3 and 11 and informal metal detector testing on the west lawn, and from TUs 9, 11, 20, and 23 on the ridgetop. All of the barbed wire pieces match exactly a type of wire patented by M.C. Shinn on March 1, 1881 (Figure 16) (United States Patent and Trademark Office). Variations of this original patent exist, including the oval-strand variation found at White Springs. This variation is composed of two strands of wire twisted together, with a four-point wire barb. One of the points is secured by being tucked underneath another twisting point (Figure 17). This feature is distinctive of Shinn's barbed wire variations and is easy to conclusively identify (Clifton 1970:55).

The metal detector revealed a linear distribution of this barbed wire across the western portion of the west lawn, and excavations on the ridgetop revealed another linear distribution there. These linear presentations imply that the fences either collapsed or were intentionally dismantled and buried where they once stood. Because this fencing was used only for animal enclosures, it seems unlikely that these animals would have been on the lawn contemporaneously with the manor house. Instead, the enclosure, and likely the metal barn, probably stood at some point before the second manor house was built in 1912. Because the agricultural schedules for the Smiths list a number of animals, it is possible they were responsible for the barn and enclosure.

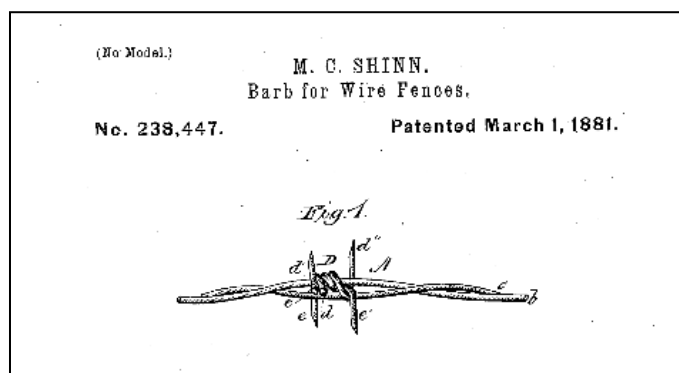


Figure 16. MC Shinn's patented wire. From US Patent and Trademark Office.

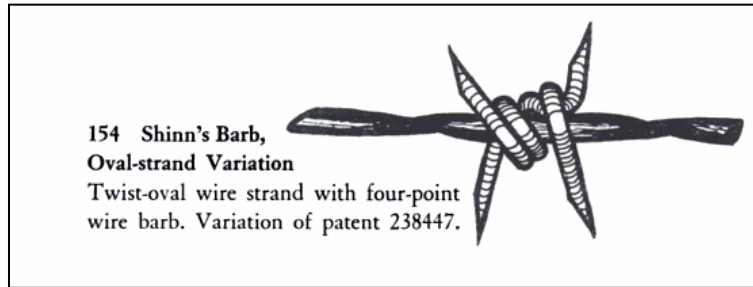


Figure 17. Shinn's bared wire. From Clifton (1970).

## Slag

In this investigation, the main goal was to look at slag recovered from White Springs and attempt to catalogue it with the aim of assigning it to either the Seneca (circa 1688-1715) or the Euroamerican occupation (roughly 1788-present) at the site. Smiths were likely present during the Seneca Era, so this distinction is an important one. TUs 11 and 33 were chosen as representative units that were not associated with any features of any sort, while TUs 39 and 40 were chosen as representative units associated with Euroamerican features. All four of these contexts were chosen because they are sufficiently isolated from any identified Seneca features or areas of known natural or cultural disturbance. The assemblage from these units should present a benchmark for the identification of Euroamerican era slag.

One hope in studying slag from these different units was to identify the type of fuel used in production, as this would potentially allow for a placement in time. Light (1987:659) points out that the presence of coal is indicative of a Euroamerican occupation, as coal did not replace charcoal until some time in the 19<sup>th</sup> century. An additional hope was to perhaps identify the type of forge and possibly the materials being worked. Sandy slag is indicative of a forge lined with sand, and the slag is a coalescence of metal run-off and this sandy lining (Light 1987:662). Though glassy slag looks quite different than sandy slag, it is not as simple to determine the type of forge that was used to produce it.

Unfortunately, the analysis of forge type and materials did not progress much farther than this initial model. The shape of the sandy slag was not helpful, as the majority was too small to

have the characteristic shape indicative of a bowl furnace (Light 1987:662). However, much of the glassy slag was dotted with metal droplets, which is indicative of smithing in a furnace and is further indicative of a 19<sup>th</sup> century occupation. Both charcoal and coal were recovered in every one of the four units investigated, which unfortunately makes the identification of fuel type complicated. Though all of the slag has been weighed, the amount of each types of slag in the units was determined by a visual count, as glassy slag is much more dense than sandy slag and a judgment based on weight can be deceptive.

By far, the most useful tool for dating slag proved to be the presence or absence of coal. In the initial analysis of slag from TUs 11, 33, 39, and 40, the presence of coal or coal cinder was carefully searched for. In unit 11, there was slightly more sandy slag than glassy slag. A number of the pieces of sandy slag had what appeared to be charcoal embedded in them. Similarly, coal cinder was embedded in a number of the glassy pieces. The other artifacts associated with unit 11 are not telling of either the Seneca or the Euroamerican occupation. The slag found in unit 13 was overwhelmingly glassy, though there was some sandy slag recovered. Very few pieces of the glassy slag appeared to have coal cinder embedded, but nothing was obviously visible in the sandy slag. Here as well as in unit 11, the rest of the artifacts recovered from the unit appear to be of a mixed temporal content.

Units 39 and 40 were associated with Euroamerican post-mold features, and the vast majority of slag found in each of these areas was glassy. There is evidence of coal cinder in some of the glassy slag in both of these units, but nothing diagnostic in the sandy slag. Unlike units 11 and 13 where the artifacts were temporally ambiguous, those objects recovered from units 39 and 40 were almost completely Euroamerican.

Because the analysis thus far was not particularly telling, TU 6 was chosen for comparison. This unit is associated with a Seneca-era pit feature and included a large amount of slag. Visually there was a near-equal amount of both types of slag in this unit, and some coal cinder in the glassy slag was identified. The majority of slag was found within the first 31

centimeters of digging and is therefore from soil recovered from the disturbed plow zone. Level 3 (31-40 cm) yielded small amounts of slag and is likely deep enough to have avoided much disturbance. Level 4 of this same unit (40-49 cm) has no slag and no Euroamerican artifacts, which might indicate that these lower levels are an undisturbed Seneca-era occupation, and that all the slag is Euroamerican in origin.

Three more units with large amounts of slag were chosen for additional comparison. These TUs (9, 17, and 20) are associated with large Seneca-era pit features and the majority of slag recovered in each is glassy. Slag recovered from TU 17 and 20, like that of TU 6, is largely from the disturbed plow zone. For these units, the majority of slag recovered was glassy, and many of these pieces had embedded coal cinder. Very little sandy slag was recovered, and it included nothing diagnostically discernable. TU 9, unlike the other units included in this analysis, appears to be largely undisturbed after the plow zone. However, the majority of slag found in this unit was from the first level (13-28 cmbd) and is not necessarily indicative of either occupation. The remaining slag recovered in levels 2 through 5 (29-50 cmbd) was almost solely glassy. Coal cinder was identified in glassy slag from each of the units, though there was nothing obvious in the small amount of sandy slag recovered.

In comparing Seneca-era features, Euroamerican contexts, and ambiguous areas, the hope was that a clear differentiation in slag type, formation, or fuel choice might emerge.

Compounding the complexities of dating the slag is the knowledge that the landscape was dramatically changed throughout the history of the site. The use of the land by the Euroamericans as a farm and the grading of the lawn that was undertaken when the manor house was built have distorted the natural stratigraphy. Therefore, slag recovered from the plow zone of each unit is likely mixed, and may have been moved some distance away from the point of original deposit. Finding coal cinder in the glassy slag indicates a 19<sup>th</sup> century occupation, but there is certainly a sizable amount of sandy slag to take into consideration. It is likely that some

of this sandy slag is representative of the Seneca-era occupation, though this is impossible to prove conclusively with a simple visual examination.

### **Spatial Distribution**

Although there are visually obvious modifications to both the east and west lawn, the location of the shovel tests and tests units did not always fall within these obvious features because the archaeological dig focused on the Seneca occupation and not the Euroamerican one. Therefore, a lack of artifactual evidence may not necessarily indicate that modifications did not occur near or around these areas. Additionally, I was unable to learn when formalized garbage collection began in Geneva, so a dearth of deposits from the 20<sup>th</sup> century may not indicate that certain material classes were not being used.

### **East Lawn**

Because of the sporadic nature of the artifact finds on the west lawn, the east lawn is by far the better option for attempting to date the different deposits. Shovel tests 49-59 have the most Euroamerican-era material. Large amounts of brick (approximately 471 grams), were found collectively in shovel tests 49-56. A substantial amount of mortar (approximately 127 grams), was also found collectively in the same shovel tests. This appears to most likely be building debris. However, the materials do not appear to be burned, so it is unclear whether or not these deposits were the remains of the first ruined mansion. The ceramics are more useful because they can be dated based on style. TUs 63-67, 71, 73, and 82-83 are units were opened on the east lawn. These units contained 235 ceramic fragments.

TUs 63, 67, and 73 are clustered together directly to the east of the manor house in the center of the second terrace (Figure 18). TU 63 contained nine skeet fragments. TU 67 contained four skeet fragments, along with undecorated whiteware and one piece of purple spongeware. All four of these units contained a great deal of plaster. TU 73 had only 1 piece of undecorated whiteware. The east lawn is more secluded from view than the west lawn, and it was also the site of the spring-fed pond and gazebo associated with Alfred Lewis. It was the largest open space

immediately surrounding the manor house and would have been a beautiful spot for recreational shooting to take place. While the spongeware dates to between 1830 and 1871, the remainder of the whiteware sherds were undecorated and not diagnostic.

TUs 54, 65, and 83 are clustered together underneath a large tree at the southern edge of the same terrace. TU 54 contained one piece of unglazed red earthenware. TU 65 was much more productive and contained 43 fragments. The majority of these were also red earthenware, some glazed and some unglazed, which likely represent the remains of broken flowerpots.

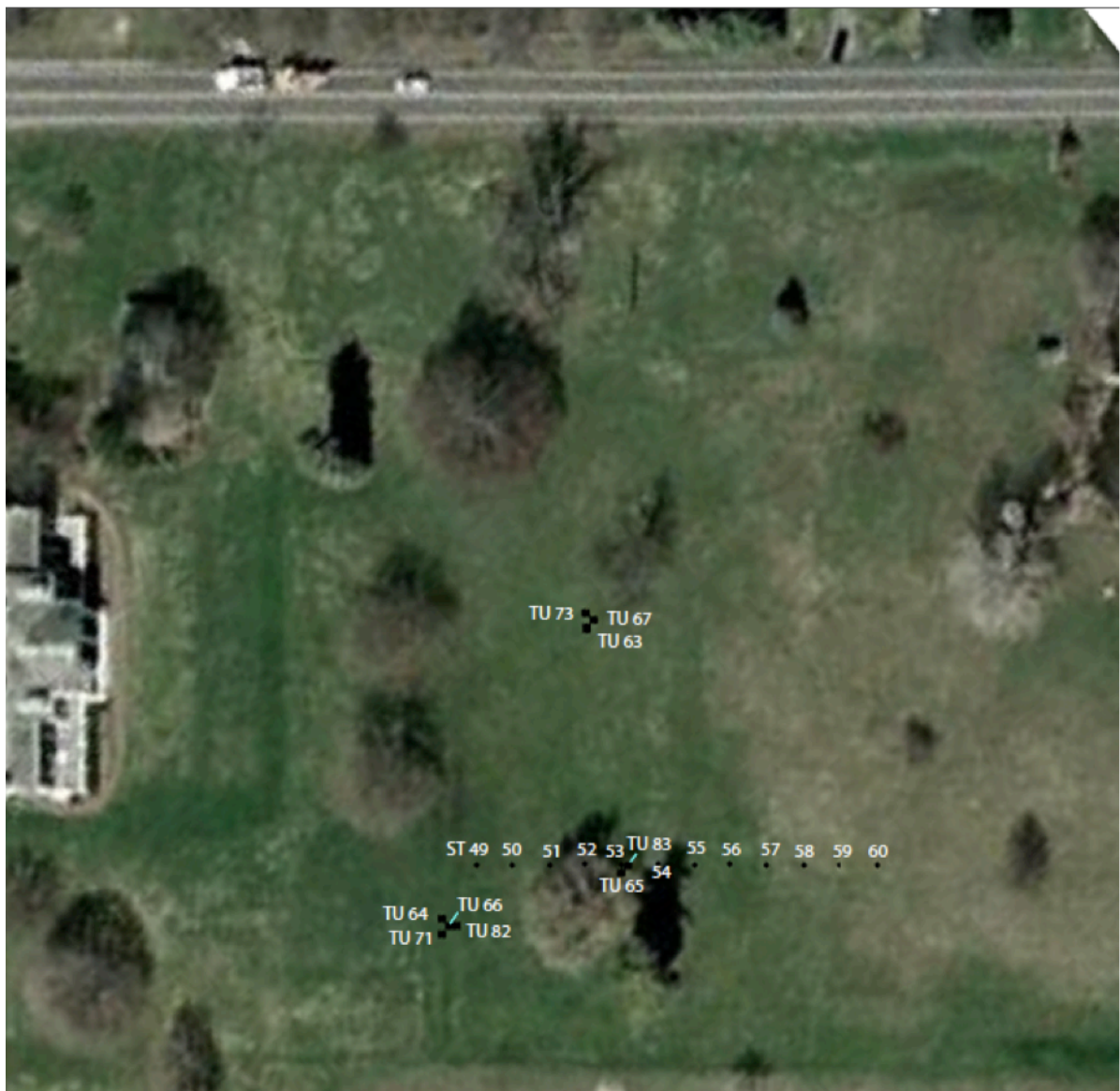


Figure 18: East lawn with ST and TU labels. Image used courtesy of Kurt Jordan.

In addition to the redware there was one blue-transfer printed sherd, one hand painted sherd, two yellow and red banded pieces of annularware, and some unglazed yellow earthenware and glazed whiteware. The median date for production of all these differing types of diagnostic ceramics is the mid 1800s, which dates them before the fire that destroyed the original manor house. This dates the deposit to a similar time as the one above.

The last grouping of TUs on the lawn contains the remaining TUs 64, 66, 71, and 82. TU 64 contained 43 fragments and an array of diagnostic types, including transfer print, annularware, flow blue, and handpainted fragments. Along with these are undecorated whiteware and some creamware. TU 66 contained 29 fragments, mostly undecorated whitewares, along with one hand painted fragment and red and yellow banded annularware. Interestingly, a number of these fragments show evidence of being burned. TU 71 contained 26 fragments, including two hand-painted sherds, annularware, and undecorated whiteware. TU 82 contained 10 fragments, including 1 pearlware sherd, one green edgware sherd, and 1 hand-painted sherd. Fragments in TU 71 and 82 also show evidence of being burned. The plaster is an interesting find in these units. It is clearly material from inside the house, but it does not appear burned and there is very little other burned material to suggest it is the result of the fire. Kurt Jordan suggests that this may be the result of interior remodeling (2013, pers. comm). The other burned artifacts may have been burned in a different event, or may in fact be from the 1876 house fire.

Shovel tests 49-60 run in ascending order from the west to east beginning near the center of the second artificial rise. They begin close to TUs 64, 66, 71, and 82, and continue linearly just to the north of TUs 54, 65, and 83. Only 2 pieces of Euroamerican bottle glass were found, and 30 pieces of ceramics were recovered in this shovel test line. The majority of these were undecorated whitewares. More interestingly, contained large amounts of brick (470.96 grams) and mortar (126.94 grams). This large amount of building debris is unusual considering only 12 nails were found in the line. This could be because of pre-sorting before dumping, where the more dangerous nails were removed from the debris and discarded elsewhere. The nails may also

be absent not because they were moved elsewhere, but because they were re-used. A smith was in operation at White Springs and could have melted down these nails to create new ones. The brick and mortar do not show evidence of burning, but their proximity to the burned ceramics in the southernmost TUs suggests these deposits are unrelated.

STs 49-60 are on the second terrace itself and have a much smaller and temporally tighter sample. The only diagnostic ceramic is one hand painted whiteware sherd which dates any time after 1820. The flat glass has a mean thickness of 1.7mm, providing a date of roughly 1859 (Table 15). The ceramic could have been used until well after 1830, so it is not necessarily odd that the glass dates to a later period.

Thickness	Amount	Date
1.1mm	1	Pre 1810
1.2mm	6	1810-1825
1.3mm	7	1810-1825
1.4mm	4	1830-1845
1.5mm	2	1845-1855
1.6mm	1	1845-1855

Table 15. Flat glass from east lawn STs.

The mean date for the ceramics and glass is between 1830 and 1860, when the Lees were living in the manor house. The 265 ceramics indicate that household trash was being deposited on the lawn, and that some was likely used in the creation of the terraces (Table 16). The large amount of brick and mortar in the STs and TUs point to interior remodeling efforts.

Type	Amount in TUs	Amount in STs	Mean Date
Unglazed redware	78	12	Unknown
Glazed redware	16	0	Unknown
Blue transfer-print	3	0	1817-1900
Hand-painted whiteware	8	1	1820-present
Flow Blue	1	0	1844-1860
Annularware	1	0	1785-1840
Undecorated whiteware	71	1	1820-present
Burned whiteware	16	0	Unknown
Creamware	14	0	1795-1830
Edgeware	1	0	1800-1830
Pearlware	3	0	1795-1830
Yellow earthenware	5	0	1827-1922

Table 16. Ceramic deposits from east lawn TUs.

## West Lawn

This lawn has an interesting history that the archaeology may not be able to fully represent. The Lees graded the west lawn in 1842, and the geophysics revealed a curvilinear path that they likely installed (Conover 1880:4). The function of this lawn changed when Alfred Lewis transformed the property from that of a leisure area, as the wilderness garden suggests, to a more utilitarian area as the window glass and industrial deposits suggest.

Three shovel test lines were installed running east to west at the south, center, and north sections of the lawn (Figure 19). Apart from some flat glass, no domestic artifacts were recovered from any of the shovel tests. In STs 13-24 in the southernmost line, the only relevant Euroamerican artifacts recovered were less than a gram of mortar. In STs 37-48 in the next line to the north, 7 nails and two pieces of iron, 22 grams of mortar, brick, and 2 pieces of Euroamerican glass were recovered. In STs 25-36, 5 pieces of flat glass were recovered, along with 36 grams of brick, approximately 3.5 grams of mortar, and an iron pulley wheel. Finally, in STs 2-10 to the north, 1 piece of flat glass was recovered, along with 9 pieces of barbed wire, 1 nail, 1 fence staple, and roofing felt. Virtually no ceramics or household debris were recovered in

the TUs to the west of the northernmost line of STs. Unlike the east lawn, there are no terraces on the west lawn. Conover notes that this lawn was graded by the Lees (Conover 1880:4).



Figure 19. West lawn with ST and TU labels. Image used courtesy of Kurt Jordan.

The barbed wire indicates that animals were likely kept on the lawn after 1881. The other industrial debris support the theory that the lawn had a more utilitarian purpose than the east after

1881. There is a rectangular depression on the lawn that is visible to the naked eye where a horse lawn. barn once sat.

Though no ceramics, flat glass, or bottle glass was recovered in any of the six TUs, flat glass and bottle glass was recovered in 5 of the shovel tests. Using Moir's (1982) equation, the flat glass dates to around 1920 (see table 17). This date seems reasonable when taken with the barbed wire on the west lawn. Patented in 1881, it would have been available for purchase shortly after.

ST	Glass Color	Glass Thickness	Mean Date
29	Clear	2.4mm	1919-1920
29	Clear	2.4mm	1919-1920
30	Clear with white paint	2.4mm	1919-1920
30	Clear with white paint	2.4mm	1919-1920

Table 17. Flat glass from west lawn STs.

The almost complete lack of any household trash indicates that this lawn served a much different purpose from the east lawn. The utilitarian objects found make it likely that the flat glass recovered was once installed in the horse barn or other farm structure instead of the manor house. The barbed wire indicates that animals were kept on the lawn and it seems likely that they enclosed a grazing area for animals that were housed on the lawn during Lewis' time at White Springs. The west lawn became a more industrial space used as part of the farm operations, in opposition to the east lawn which was a more public area acceptable for social functions.

### **Ridgetop**

The ridgetop to the south of the manor house is another area of interest because this is the only area in which a large number of excavation units were placed (Figure 20 and Figure 4). These units are located on the top of the ridge bordering the sloping vineyard to the south of the east lawn. During the course of these excavations, Euroamerican features such as possible planting pits and post holes were discovered. These features were recorded with a total station by their northing and easting coordinates. These coordinates have been matched up to the base map,

and the location of these features will be referred to by their units, instead of by their coordinates. Planting pits and postholes are identified by soil stains that occur when the organic material decomposes in place, making the soil darker than what surrounds it. They are distinguished from each other based on depth, composition, and location, and associated artifacts.

Euroamerican postholes are fairly numerous, appearing in TU 18, 23, 24, 26, 37, 39, 42, and 48. Artifacts recovered from these features include ceramics, glass, cinder, slag, brick, and Seneca-era materials that became mixed at some point during the post's installation or decomposition. Post mold 23, located in TU 49, produced a high quantity of Euroamerican artifacts. The ceramics pulled from the unit include whiteware, pearlware, creamware, and a blue-transfer printed sherd. Amber bottle glass along with clear, aqua, and light green flat glass measuring 1-2mm each were also recovered. The possible date of these artifactual deposits will be discussed later in this chapter.

Possible planting pits were also discovered in TU 23, 36, and possibly 24. It is interesting to note that some of these post holes occur in units that align in a linear pattern. TU 18, 36, and 37 are linear and stretch a good length in a north-south direction. These are likely evidence of a row of trees that stood on the ridgetop in the 20<sup>th</sup> century. The posts in TU 42 and 48 are also aligned in a linear fashion in a northeast-southwest direction, but cover a much shorter distance than the previous line. It is unclear at this time if these two posts are from an associated structure.

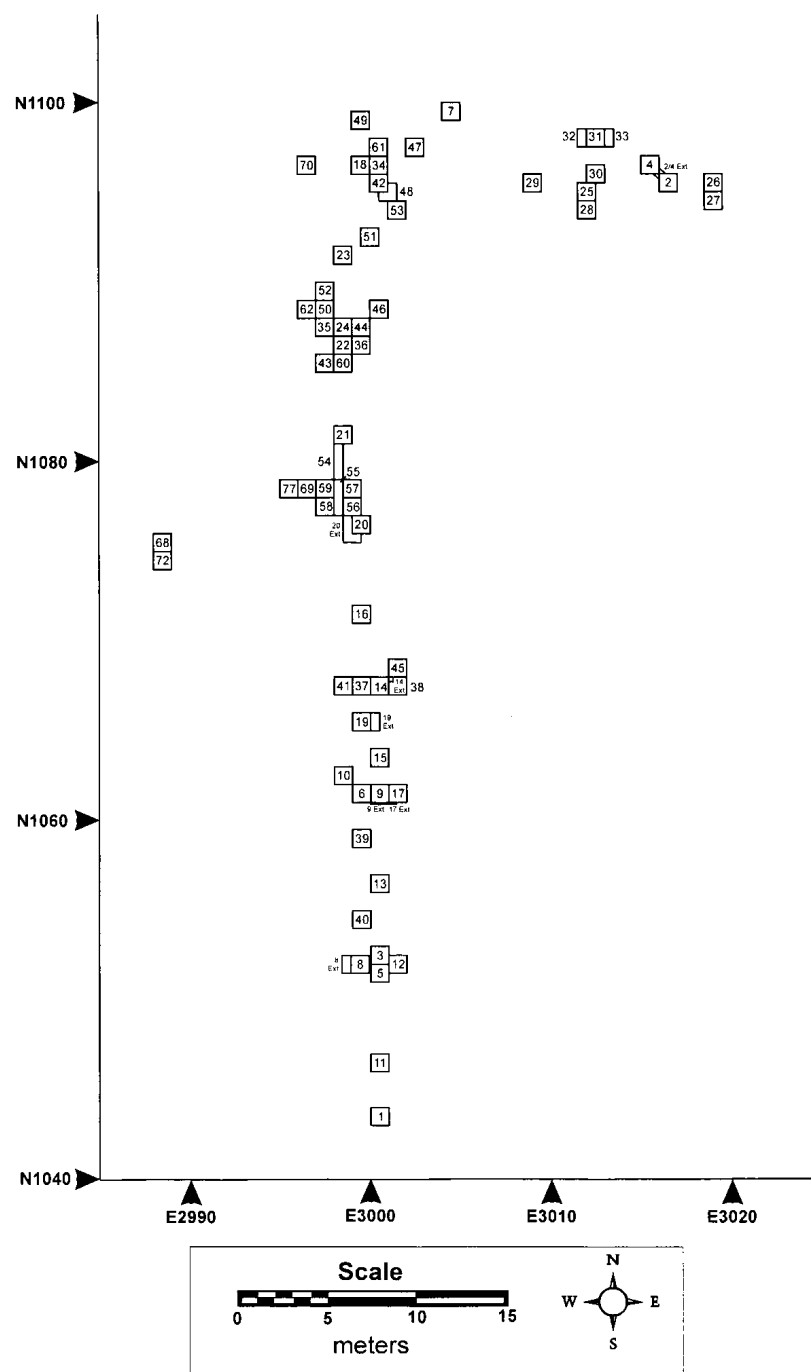


Figure 20. Ridgetop base map. Image used courtesy of Kurt Jordan.

A different feature, identified as a Euroamerican drainage ditch, was uncovered in TU 27. TU 26, directly north of TU 27, also appears to contain some sort of ditch feature. This is perhaps the most interesting feature of the group: the fill layer uncovered first may be a part of a farm road existing north of the excavated area, but the fill extended at least 46 cm below the plowzone (Jordan 2010). The fill included Seneca-era artifacts, and so this provides a very clear and obvious example of Euroamerican landscape modification.

A large assemblage of ceramics was found along the ridgetop (see table 18). The ceramics provide a mean date of approximately 1830, and the flat glass provides a mean date of approximately 1828 (table 19), at which time the Lees were living in the manor.

Type	Amount	Date
Undecorated	219	Unknown
Glazed redware	21	Unknown
Creamware	10	1795-1830
Edgeware	1	1800-1830
Pearlware	2	1795-1830
Transfer-print	13	1817-1900
Yellowware	14	1827-1922

Table 18. Ridgetop ceramic totals.

Thickness	Amount	Date
1.1	68	Pre-1810
1.2/1.3	125	1810-1825
1.4	9	1830-1845
1.5/1.6	106	1845-1855

Table 19. Ridgetop flat glass totals.

The majority of the nails (209) were recovered from these TUs as well. Though hand wrought, cut nails, and wire nails were all recovered, more than half were cut. Cut nails date between 1790-1900 and fit nicely within the time period set by the other artifact classes. Two hundred nine nails is significant- these may be remains of the fire, but there is not enough burned material

to support this and these are more likely indicative of some type of interior remodeling, exterior maintenance, or construction.

The deposits date to the 1830s and like those on the east lawn, can be attributed to the Lee family. The ditch feature, planting pits and postholes are evidence of landscaping efforts on the property, and the row of trees that once stood may have been planted during this time. These features point to obvious landscaping improvement efforts.

### **Vineyard**

Artifacts were collected in the vineyard through pedestrian surface collection. The vineyard rows were walked individually and artifacts recovered were recorded based on their location in rows labeled m1 through m23, with m1 being the northernmost row near the ridgetop and m23 being the downslope to the east. The following table lists Euroamerican artifacts recovered, by row (see tables 20 and table 21). Red and orange brick, ceramic, iron, pipe stems and bowls, mortar, slag, flat glass, and bottle glass were all recovered in high amounts.

Pedestrian survey was undertaken over a number of different seasons, and artifacts were not always collected. When possible human remains, likely from disturbed Seneca graves, were noticed, artifacts in the vineyard rows were noted but not removed<sup>1</sup>. The counts in table (#) are in grams, but are not complete. Count sheets from which this information was taken record finds either in grams (if collected) or in pieces (if observed). The “+” denotes additional un-weighed artifacts.

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<sup>1</sup> On the recommendation of the Seneca Nation representatives, areas which were likely to include burials were not excavated during this project. Probable human remains on the vineyard surface were noted but not collected to minimize further disturbance to these remains.

Row	Ceramic	Pipe	Flat Glass	Bottle Glass	Iron	Other
M1	6 pieces	0	17 pieces	0	0	0
M2	1 piece	1 piece	6 pieces	4 pieces	1 machine cut nail	0
M3	3 pieces	2 pieces	1 piece	3 pieces	0	0
M4	2 pieces	0	3 pieces	4 pieces	0	0
M5	0	0	1 piece	1 piece	0	0
M6	3 pieces	0	1 piece	2 pieces	0	0
M7	7 pieces	0	1 piece	2 pieces	0	0
M8	5 pieces	0	0	0	1 nail	0
M9	8 pieces	2 pieces	0	5 pieces	0	0
M10	5 pieces	2 pieces	1 piece	3 pieces	1 unidentifiable	0
M11	2 pieces	1 piece	1 piece	2 pieces	1 unidentifiable	musketball
M12	1 piece	1 piece	6 pieces	0	0	modern material
M13	4 pieces	1 piece	0	2 pieces	2 nails	0
M14	0	5 pieces	0	0	3 unidentifiable	Iron trigger guard
M15	2 pieces	0	0	1 piece	0	0
M16	3 pieces	0	0	3 pieces	0	0
M17	0	0	1 piece	0	1 nail	0
M18	3 pieces	0	0	0	0	0
M19	3 pieces	0	0	0	0	0
M20	1 piece	0	0	1 piece	0	0
M21	10 pieces	0	1 piece	3 pieces	3 nails	0
M22	16 pieces	0	1 piece	2 pieces	0	musketball
M23	17 pieces	0	1 piece	3 pieces	1 nail	0

Table 20. Vineyard totals by category: household artifacts.

Row	Red Brick (g)	Orange Brick (g)	Mortar (g)	Glassy Slag (g)	Sandy Slag (g)
M1	58.28	68.12	22.83	10.31	0
M2	1.13	10.92	20.98	25.77	5.25
M3	3.77	46.17	23.22	10.35	10.39
M4	1.03	23.74+	1.03	2.98	0
M5	29.02	9.77	4.01	19.09	0
M6	1.02	17.66+	observed	7.92+	0
M7	0	.37+	0	observed	observed
M8	.42	210.02	5.40	1.40	1.53
M9	0	28.27	53.12	6.38	observed
M10	5.35	23.46	36.41	3.01	2.31
M11	16.21	19.65	1.10	1.09	1.50
M12	6.00	12.96	2.11	1.45	observed
M13	0	57.18+	9.65	8.05	3.26
M14	0	40.78	.61	4.65+	0
M15	0	3.01	.23	0	0
M16	2.76	23.81	.18	0	0
M17	0	14.88	0	0	29.29
M18	0	3.05	0	0	0
M19	0	11.94	0	.44+	0
M20	18.73	0	.52+	0	9.27
M21	0	1.35	0	0	0
M22	35.26	67.48	24	0	0
M23	27.97	19.53	0	0	0
Totals	713.49+	206.95+	183.59+	99.28+	62.8+

Table 21. Vineyard totals by category: industrial by weight.

Based on the row totals, it seems that brick and mortar are much more prevalent in rows m19 through m23 than they are in the rest of the rows, and ceramics are much more prevalent in rows m22 and m23 than anywhere else in the vineyard. This is perhaps because a larger portion of brick, mortar, and ceramic waste was deposited farther away from the house; however it may also be the result of the tilling of the soil in the vineyard and the natural processes of erosion and gravity.

Specifically, the ceramics in the sample can be dated. Out of 112 identified, 28 of these are diagnostically valuable (see table 22). The ceramics from the vineyard suggest a mean date of around 1830, which indicates use during the Lees time at White Springs.

Transfer print	1	1817-1900
Pearlware	2	1795-1830
Whiteware	10	1817-present
Redware	5	Unknown
Creamware	2	1795-1830
Drainage tile	3	Unknown
Delftware	1	Unknown
Blue Transfer print	1	1817-1900
Porcelain	1	1800-current
Salt-glazed stoneware	1	Unknown
Hand painted	1	1795-1830

Table 22. Vineyard ceramic totals.

The proximity of the vineyard to the east lawn and the ridgetop make this unsurprising. The vineyard was not installed until 2003, and the Lees apparently utilized large portions of the land to the east of the house. The mortar and brick were found in fairly large quantities like on the ridgetop and indicate that the Lees probably used the ridgetop, vineyard, and east lawn as one continuous space. Of particular interest is a pipe bowl fragment observed and photographed (but not recovered) during pedestrian survey of the vineyard in 2008 (Figure 21). Pipe bowls like these were common after 1730 and became more elaborate in the decades following up through

the middle of the 19<sup>th</sup> century (Noel Hume 1969:306). Although this particular bowl fragment can not be attributed to one particular individual, it is nevertheless an interesting find.



Figure 21. European pipe bowl fragment. Imaged used courtesy of Kurt Jordan.

## Discussion

By dividing the analysis into four spatial zones (east lawn, west lawn, ridgetop, and vineyard), it is possible to assess the assemblages in each location separately. It appears that there are at least three distinct periods of deposition in these zones. Ceramics and glass date the ridgetop and vineyard to approximately 1830, the east lawn to approximately 1850-1860, and the west lawn to approximately 1920. These dates are by no means exact because they do not consider the life-use of the artifacts. Additionally, though artifacts in the terracing on the east lawn date to the mid to late 1800s, additional landscaping work performed in the 20th century may not have included any household deposits due to new garbage disposal practices. However, this does indicate depositions at different times, and one would expect to find more modern artifacts alongside those recovered if they were used later. If these depositions on the east lawn, ridgetop, and vineyard date to between 1830 and 1860, that places them within the time the Lees were on the property. The later deposition on the west lawn dates to the time of Lewis, and

because of the very few domestic artifacts and the large amount of utilitarian items like flat glass and iron, appears to be much more of an industrial deposit than the household trash on the east lawn and ridgetop, which may be the result of remodeling.

The skeet shooting pigeon fragments should also be addressed. They are homogenously very dark gray in color and are likely made from early type of plastic, such as Bakelite, which began to be used after 1909 (Sherene Baugher, 2013: pers. comm). Their presence is interesting, as pigeons made of clay were not developed until 1883 (Clay Pigeon Shooting). Plastic was probably a later material choice, reflecting use after 1909. Black pigeons tended to be “worth” a different amount of points in the art of shooting than their red/orange counter-parts (Clay Pigeon Shooting). The creation of all black pigeons may have been a matter of making a target either easier to see, if shot against the sky, or more difficult to hit, if shot against the tree lines of the property. These pigeons were found on the east lawn, ridgetop, and vineyard. If the fragments are indeed bakelite, they were probably shot during the Lewis tenure. Alfred Lewis was a wealthy and prominent family in Geneva who hosted many social events and activities at the farm, and skeet shooting may certainly have been one such activity.

It seems apparent that at least a portion of the landscaping on the east lawn was achieved through the deposition of refuse materials to create the artificial rises. Though we were unable to perform shovel testing or put in any test units on the first rise due to its proximity to the manor, I suspect this dramatic rise is a result of similar deposition.

## **Chapter 5: Conclusions and Future Research Directions**

At a glance, the White Springs property exudes a sense of permanence and stability: the Georgian manor, spring-fed pond, expansive lawns, elegant terracing, and the formal garden speak of wealth and disposable income. Historical documentation, on the other hand, chronicles a farm which suffered through natural disasters, economic hardship, early deaths, and whose primary function changed nearly every decade. Instead of permanence and stability, it appears that the owners of the White Springs Farm frequently struggled through periods of uncertainty and failure. The causes of these problem were likely varied and manifold. Farming itself is certainly no economically safe endeavor. Uncontrollable changes in environmental conditions and local markets, to name just a few factors, are sometimes the difference between success and failure.

Into the early 20<sup>th</sup> century, more than a third of all Americans lived on a farm (Lobao and Meyer 2001:104). Farming was the focal point for economic theorists like Marx, Weber, and Lenin because they believed that changes in agriculture reflected capitalist expansion (Lobao and Meyer 2001:105). Though Marx and others based their analyses on owner-tenant relationships (Marx 1973), their basic principle holds: land is fixed capital, but improvements to the land need constant upkeep. This capital is frequently neglected in favor of production using non-durable capital because of unexpected market conditions (Perelman 1975: 701). Maintaining the land as capital is not the only difficulty for farmers. The American economy of the mid-nineteenth through mid-twentieth centuries was particularly volatile.

The artifacts reveal almost no evidence for earlier owners, and it is with the Lees that things begin to pick up archaeologically. Although the Lees sought to improve both the manor house and the landscape, it is unclear whether this was a result of stressful times at White Springs. Their farming efforts were apparently successful and brought in quite a sum in profits (see tables 4 through 7). The impact of gradual emancipation in New York State and Gideon Lee's untimely death would have created periods of stress for the family, but Isabella and her

children appeared to have successfully adjusted economically to Gideon's death, and there are no recorded disasters or economic crises during their time at the manor. As a public Figure, Gideon Lee would have been very visible in his community, likely holding community events at the manor house. His wife was also involved in community affairs and continued even after Gideon's death until the family left the property in 1857. Their improvements to the land in the form of drainage ditches and plantings on the ridgetop, and the terracing and grading, seem to reflect a desire for a visually aesthetic space for their own comfort as much as their community's, and not the result of other economic or social pressures.

The arrival of the Civil War in 1861 undoubtedly brought about changes to White Springs. James Sheldon was the primary owner of the farm for the entire war. While much of upstate New York was supplying grain for the war effort, Sheldon was in at the height of his Durham cattle breeding program. While this appears to be his primary endeavor, his farm did produce larger quantities of wheat, oats, corn, and potatoes than the Lees a decade previous. Perhaps the intensive farming effort was an adaptive strategy to attempt to counteract the recession. Sheldon held the farm through the end of the war but after a fire destroyed the house in 1876, he was apparently unable or unwilling to rebuild.

In the first decade of the twentieth century, the government created the Country-Life Commission. Fears of mass-migration away from the rural environment, coupled with economic hardships and political unrest in the country led then President Theodore Roosevelt to enact the Commission in 1908 (Lobao and Meyer 2001:105). Lewis was in possession of the farm by 1900, and appears to have flourished. While the Commission sought to promote a sustainable American agricultural base, it targeted smaller farms occupied by the less wealthy (Country Life Commission 1908).

Following shortly after was the Great Depression of 1929. Lewis was still the major landholder at White Springs and saw the farm through the end of the Depression. Congress passed a bill in May of 1933 that paid commodity farmers producing things like wheat, dairy

products, and corn to leave portions of their fields fallow to reduce agricultural surplus and raise the value of existing products. Agricultural schedules from that period are not available electronically, and because participation was voluntary, it is unclear whether Lewis took advantage of these subsidies. Between 1940 and 1980, the number of farms declined by more than half and the farm population declined tenfold (Lobao and Meyer 2001:109). Kennedy, Lobao, and Goe (1989) and Goodman and Watts (1994) argue that government programs effectively ended the period of small-scale American agricultural production because federal programs helped to raise productivity, integrate farms into a global, rather than local or national market, and promoted lower-cost food. Displacement from farming, Lobao and Meyer (2001:401) argue, is actually an indicator of the system's success whereby some farmers outperformed others on a technological and productive scale. Essentially, most farmers were eventually pushed from the landscape, and those large farms that remained were forced to rely more and more on subsidiary programs and governmental assistance (Lobao and Meyer 2001:118). Perhaps the period crises leading up to 1950 set Lewis up to become one of these victims of success.

Large-scale national changes in farming would necessarily impact local economies and practices. What we see at White Springs is continuous change in business operations at the farm. The primary function changed with each new owner in response, perhaps, to personal choice and training or in response to changing local markets. The Lewis family was wealthy, as evidenced by Katherine's building of a second manor home and other houses for her employees. Alfred Lewis lived in the household with his wife and children and interestingly, four servants. It is obvious that by the time Alfred Lewis took possession of the land in 1900, the dairy and the manor once again became a very visible part of the Geneva community. He advertised at the community theatre and placed newspaper ads about the dairy. In addition, there are photographs of events Lewis hosted for the community, including barn dances, a horse-riding academy, an historical reenactment of the Sullivan-Clinton campaign, and a cherry-picking summer camp for

children. It seems likely that his wife Agnes, as a wealthy and well-known member of the community, would have hosted her own social events in the form of afternoon tea or formal dinners.

When the dairy business ended, potentially as a result of the 1912 cyclone and the land was converted to fruit production, the endeavor was hugely successful. Lewis likely established the fruit farm with his stored capital and kept his ties with the community by involving them in the harvests, dances, and historical reenactments. Though records indicate that the farm was a success, by 1950 Lewis sold off all of his land and moved away. Alfred would have been in his seventies by this time, but none of his children remained involved. A mass move away from farming in the 1940s may have pushed the children to pursue other business opportunities, or it may have been an individual choice. After World War II, Geneva became known as the “boiler city”. With the focus moving away from agricultural produce to industrial efforts, Lewis and his children left the farm.

### **Avenues for Future Research**

The question of gender-specific roles on early 19<sup>th</sup> century farms is still unanswered. The women at White Springs provide some information about the different roles females occupied, but there is not nearly enough information to draw any conclusions. Documentary research about other large farms from this time period may help us to better understand the lifestyles of women owners and workers, and about the lives of slaves on northern farms.

With regard to the specific periods of landscape modification, exploration of the large terrace closest to the manor house on the east lawn would be the first step in understanding the creation of the dramatic slopes that punctuate the landscape. It is likely that this terrace was created by depositing fill, which likely included artifacts, and unearthing some of these artifact classes may help us to understand the life of the manor house and its occupants. Testing near the northern edge of the east lawn would also be helpful in determining the extent of the modifications. I believe it would be very possible to identify the location of where debris from the

house fire was deposited. Further testing around both lawns may also help contribute to the archaeological literature regarding disturbed historic sites. Despite White Springs' history as a farm, I believe I have successfully been able to date different deposits from around the site and attribute them to different periods of use. With a larger archaeological sample even more information could be usefully drawn from the data.

## **Discussion**

The original focus of this analysis was to understand the multiple historic phases of occupation at White Springs through material culture uncovered over the course of the Cornell University-Ithaca College excavations. Although a great many of the diagnostic artifacts (ceramics, glass, nails) were either extremely small or extremely corroded, by looking at the artifact distribution in different zones of the property (east lawn, west lawn, ridgetop, and vineyard), I was able to date different deposits. By coupling these dates with historical documentation in the form of census records, deed records, agricultural schedules, and archival records, I was able to attribute different periods of landscape modification to different owners. Taken together within a context of an ever-changing local and regional economy, the artifacts and the landscaping identify different types of land use (industrial on the west lawn and social on the east lawn), the timing of different landscaping activities, and potential reasons for why each period of landscaping was undertaken.

Almost no evidence of the Lees' predecessors was found within the boundaries of the archaeological excavations. This is perhaps because Gideon Lee's extensive modifications seriously disturbed or completely destroyed earlier deposits, or perhaps household debris from these early owners is on an unexcavated portion of the property. The ridgetop, vineyard, and east lawn deposits date to between 1828 and 1860, making these modifications a product of the Lees' time at White Springs. Conover (1880:4) notes some of these activities, including grading in the west lawn and adjoining lane, and the artifacts support his claims. Although documentation regarding the Lees community involvement is not available, as public figures it is likely that they

entertained and hosted events at their farm. The terracing on the east lawn enhances the sense of space and helps to visually break up the expansive lawn and may have created a vantage from which the next owner Alfred Lewis undertook skeet shooting and other range activities. The curvilinear path on the west lawn may have been installed by the Lees, as by the time Lewis owned the property, there were two barns on the west lawn. This, in addition to the terracing and grading, may have been attempts at further enhancing their land. The artifacts on the east lawn date to the 1850s or 1860s. If the plaster on the east lawn is indeed the result of remodeling, it shows the Lee's, particularly Isabella Lee's desire, to keep up appearances inside the house as well as outside it. This is unsurprising considering how involved and visible the Lees were in and to the Geneva community.

Dumping on the ridgetop may have been undertaken as a means of leveling the ground, and holds artifactual evidence of some manner of remodeling or renovation. The Lees would have had the financial resources available to remodel the original 1806 manor to their taste. The debris would have needed to be deposited somewhere on site, and uneven ground near the house would have been a logical location.

Vineyard deposits date even earlier to the 1830s and can tentatively be associated with the Lees. Although previous owners like the Smiths or even Rumney may have played a role, the large deposits of brick and mortar point toward remodeling. Additionally, the number and quality of ceramics recovered point toward wealthier occupants with disposable income.

Between the time the original manor house was destroyed by fire in 1876 to the time it was rebuilt in 1912, there were a series of entrepreneurial ventures undertaken off-site. William Smith operated a cider mill, gristmill, and nursery, perhaps in response to the economic pressures and expanding agricultural markets that were a cause of stress for James Sheldon in the previous decades.

The industrial depositions on the west lawn date to approximately 1920, and can be attributed to Alfred Lewis' time at White Springs. The barbed wire on the west lawn likely

predates Alfred Lewis and was probably used by James Sheldon during his time at White Springs between 1857 and 1876. The spot on which the formal garden and tennis court sat are currently covered over by a paved driveway and a small cottage but there is photographic evidence of a formal garden on the property by 1916. This, along with any other landscaping efforts, was done in an attempt to provide a picture of wealth and solidity in the face of difficult circumstances like the cyclone. The formal garden visually represented the natural order and hierarchy Lewis wished to depict, and the tennis court became a social space in which to interact with other members of the community.

No owner had as tumultuous a tenure as Alfred Lewis. He began by raising Guernsey cattle and branched into the dairy industry. After his losses due to the cyclone in 1912, he sold his cattle and began raising poultry. Roughly a decade later, he turned to fruit farming. When the market began to change and farming became increasingly less profitable, he ceased all of his operations and sold the land. It is possible that the formal garden appeared in different iterations as he responded to various difficulties, but the cottage and driveway preclude further testing and no additional photographs of the garden are available.

The approaches I have taken to studying the White Springs Farm have yielded some interesting conclusions and contributed to the historical narrative of the property. Dating different artifact classes revealed different periods of modification of the spaces surrounding the manor house, and a look at the economic climate during each period informed the possible reasons behind modifications. It appears that the early landscaping by the Lees was done to improve the functionality of the lawn and was performed for aesthetic reasons. Filling low spots with household debris to level uneven land, smoothing the west lawn, and terracing the east lawn provided a more useful and aesthetically pleasing space. These do not coincide with any identifiable periods of economic or social stress.

Later modifications undertaken by Alfred Lewis, including the formal garden and the tennis court, were much more ostentatious displays of Lewis' wealth and power and coincide

with periods of greater economic stress. These were not functional changes like those made by the Lees to improve their comfort, but were instead aesthetic. Alfred Lewis was an intrepid businessman and was able to keep his farm by adapting continuously to changing economic circumstances; however, he undoubtedly felt the effects of the Great Depression and the changing economic markets of the 20<sup>th</sup> century in some way. In times of financial stress one would expect to see a reduction in superfluous spending. Instead, expensive alterations like the upkeep of the formal garden and tennis court were made, possibly in an attempt to maintain the illusion of wealth during difficult economic times. In addition, the designation of public space (the ridgetop and east lawn) versus more private space (the west lawn) by Lewis may have been a means of coping with external pressures by reorganizing his land-use practices. His utilization of the west lawn for more industrial purposes instead of as leisure space may further indicate a response to these external pressures.

Theorists Leone (1984, 1990) and Yentsch (1990) argue that landscape modifications may increase during times of social or economic stress and that these modifications reflect a desire to promote an image of wealth and stability that may be lacking in reality. At White Springs, it appears that each of the periods of landscaping coincided with a stressful event of either a personal, social, or economic manner. There is almost no archaeological evidence for the owners of the manor house pre-1817 and large-scale modifications do not begin until the Lees buy the property. The creation of a wilderness garden and the grading and terracing of the property by the Lees in the 1800s coincided with the gradual emancipation of slaves in New York state, and the property was maintained and perhaps further altered after Gideon Lee's death in 1841. The installation of the formal garden and tennis court by Alfred Lewis in the early 1900s coincided with a devastating cyclone, changing economic markets, and a shift away from agriculture in New York State.

The owners of the White Springs Manor were wealthy, and all of these alterations obviously reflect their wealth and status and are aesthetic choices. To what specific extent they

reflect Lee or Lewis' anxieties is unclear, but the dearth of evidence from Nichols' or Rumney's time at White Springs may reflect a much more stable economic or social period than that of the Lee and Lewis. While a comparison of other large farm sites of this period may help to more clearly define the reasons behind landscaping efforts, at White Springs there appears to be a correlation between external pressures and landscape modification. Though the manor house and landscape imply wealth and stability, the extensive landscaping ideologically conceals the uncertainties of the rich in capitalism.

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