EXAMINATION OF A DISTURBED GRAVE AT THE SIGHTLER CEMETERY, LEXINGTON COUNTY, S.C.

Chicora Research Contribution 540

EXAMINATION OF A DISTURBED GRAVE AT THE SIGHTLER CEMETERY, LEXINGTON COUNTY, S.C.

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CHICORA RESEARCH CONTRIBUTION 540

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MANAGEMENT SUMMARY

On May 5, 2011 the Lexington County Sheriff's Department was notified by visitors to the Sightler Cemetery that a grave in this small family cemetery off State Pond Road in eastern Lexington County had been disturbed. The grave was opened, filled with water, and a skull was on the ground nearby. Both the Sheriff's Department and Coroner responded; after examining the situation a decision was made to contact Chicora Foundation.

Chicora Foundation personnel responded immediately. The skull was identified as that of an elderly white male of European ancestry. Nearby were fragments of a wood casket. There was also an open grave that apparently included a concrete vault holding a large quantity of water.

Visible in the grave were the remains of a single individual. The torso exhibited heavy saponification or the development of adipocere and was floating face down in the vault. Lower arms, lower legs, hands, and feet, were not present.

A decision was made to recover the remains, ensuring that all of the remains in the open grave were attributable to this one body. This would help ensure that that only crime involved was that of grave tampering or desecration (S.C. Code of Laws, Section 16-17-600 et seq., destruction or desecration of human remains). It would also determine if any remains had been stolen and help ensure that the body could be appropriately reburied. We also hoped that the excavation of the remains might help identify the individual since no grave stone was present. Of course, any removal using forensic archaeological techniques provides the opportunity to collect data on a variety of bioanthropological and mortuary related topics.

The grave produced a corroded white metal plate; after conservation treatment this plate identified the burial as that of Frank H. Sightler. The burial container was a cloth covered pine wood double couch or split lid casket set in a concrete vault with bitumen lining. The casket had long bar handles and the bed was filled with excelsior that had been preserved by water intrusion. Other artifacts present in the grave included buttons and a safety pin. A plastic trocar button was also recovered.

Only one set of remains were recovered from the open grave and it does not appear that any remains had been stolen. The skull does reveal sun bleaching, suggesting that the disturbance took place some months prior to the discovery. An effort was made using a variety of on-line genealogical forums and bulletin boards to identify members of the Sightler family that might be able have visited the cemetery and be able to help create a time-line for the disturbance. None came forward.

The death certificate for Frank H. Sightler was identified, revealing that Mr. Sightler died on April 10, 1953 at the age of 77. This is consistent with the skeletal remains. Age was evaluated using cranial suture closures, pubic symphyseal face morphology, and phase changes in the sternal rib. These are consistent with other age-related degenerative conditions that were visible. Sex was also consistent with a visual examination of the pelvis. Finally, the racial identification on the death certificate is consistent with visual indicators on the skull.

Metric and non-metric measurements and observations were obtained from the bones available, although these were limited by the degree of saponification. The cemetery was recorded as archaeological site 38LX609 at the S.C. Institute of Archaeology and Anthropology. The Lexington County Sheriff's Department Incident Number is 11020302.

At the conclusion of the study the remains were reinterred by the Lexington County coroner.

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Introduction

On May 5, 2011 the Lexington County Sheriff's Department received a call from a couple visiting the Sightler Cemetery that they had found a skull sitting on top of an excavated grave. The responding officer was Matthew McGraw; eventually he was joined by MD Laintz with the Sheriff's Department; Lt. Eric Russell, Region 2 Assistant Commander with the Sheriff's Department; and Lexington County Deputy Coroners Randy Martin and Laura Gould.

Chicora Foundation was notified of the find by Lt. Russell, who requested that we also respond. Nicole Southerland, Debi Hacker, and Michael Trinkley arrived at the cemetery about 3:30pm.

Figure 1. Location of Sightler Cemetery in Lexington County, South Carolina.

The Scene

The cemetery is situated about 1,300 feet south of State Pond Road (S-1697) in southeastern Lexington County, about a mile east of Gaston (Figure 1). Access to the cemetery is by way of several woods roads off State Pond Road and there is no direct, or convenient, means of accessing the cemetery. The cemetery itself is situated on the south edge of Savany Hunt Creek on a sandy south-facing slope (Figure 2). A central UTM coordinate is 493444E 3745084N (NAD27 datum). The property TMS is 009000-03-018 and is owned by Dorothy Gaskins, who acquired the 62.44 acre tract in 1992.

The area is heavily wooded in hardwoods with a relatively dense understory of herbaceous plants. The topography in the immediate cemetery area was level. The cemetery was not readily visible in the woods. Soils in this immediate area are primarily Blaney sands on 2 to 10% slopes. These soils are found on summits, shoulders, and backslopes and are composed of marine and fluviomarine deposits. Sands typically extend to about 2 feet; below this are sandy clay loams. Nevertheless, the soils are well drained and exhibit no flooding or ponding. The water table is at least 6 feet below the surface.

Upon our arrival at the scene we found a human skull sitting on top of a portion of a toppled monument. Nearby was an open hole with spoil primarily to the north. Spoil, however, was difficult to discern and was covered by leaves. Still partially present in the hole were portions of a wooden casket lid. Leaves freshly dredged out of the hole were present on the side of the hole. We were told by Lt. Russell that the leaves and casket fragments had been removed from the hole in order to better examine the scene.

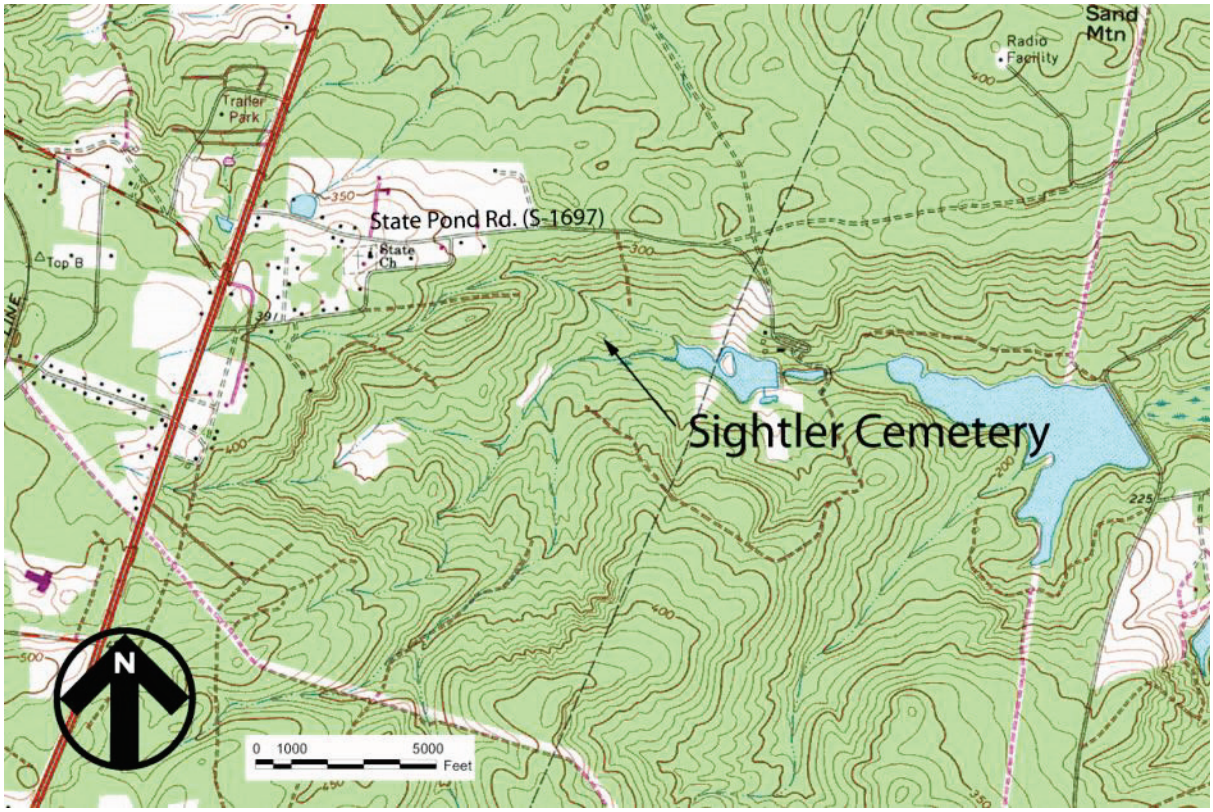

Figure 2. Vicinity of Sightler Cemetery (base map is USGS Gaston).

In the hole we observed what appeared to be human remains that were heavily saponified or covered in adipocere floating in a brown to black water. Measurements indicated that the water was about a foot in depth and additional examination suggested that the water was being retained by the grave. The human remains appeared to be floating face down and Lt. Russell indicated that the body had been displaced as they were removing some of the casket wood from the grave.

We identified a number of burial depressions around the hole that produced the remains. The cemetery, described in more detail below, extended to the south as one distinct row and several additional graves to the west. The open grave appears to be at the northern end of the cemetery. All of the gravestones had been toppled and in several cases there was some displacement of the various monument parts. While at least some of the evidenced disturbance is almost certainly vandalism rather than simply natural deterioration, is it possible to ascertain if the damage was done at the same time the grave was disturbed. No gravestone was visible at the open grave. Subsequent probing in an effort to find a monument was unsuccessful.

The open hole and water level were about 2 feet below the surrounding grade. Access to the grave measured about 2 feet by 1 foot. Closer inspection revealed that at the water level was concrete with an internal wire mesh support.

An initial examination of the skull revealed that it was morphologically consistent with a male of European ancestry and advanced age. Portions of the bone appeared sun bleached, consistent with the skull having been out of the grave for at least 6 months, perhaps longer given the dense overstory.

The remains present in the water revealed

Figure 3. Sightler Cemetery as it was found during this investigation. View is from the northern access route looking to the south.

the distal ends of both femurs. These bones were still brown, likely the result of the dense adipocere. Their color was quite different from that of the skull.

After brief discussions with Deputy Coroners Martin and Gould, it was decided that it would be prudent to ensure that the skull on the back dirt belonged to the body present in the grave, that all of the remains were present, and that only one individual was represented. To accomplish this it would be necessary to remove the remains, drain the grave, and recover what other remains might be present in the grave as well as any associated hardware or other mortuary artifacts. The coroner would retain custody of the remains until such time as they could be reburied.

Methods

The casket parts were stacked out of the way and the opening into the grave was expanded by cutting exposed reinforcement wires, allowing damaged concrete to be removed. This succeeded in expanding the opening and allowing the remains to be removed from the grave and placed in a body bag.

The water in the grave was manually bailed. This exposed the sides of the casket, as well as revealing that a manufactured concrete vault was holding the water.

A decision was made to cause as little additional damage to the vault as possible in order to allow the remains to be reburied using the existing vault. As a result, no effort was made to fully expose the vault or remove the lid. While this created less than ideal circumstances for excavation, it did minimize damage to the grave.

As additional remains were identified and removed from the grave, it became apparent that

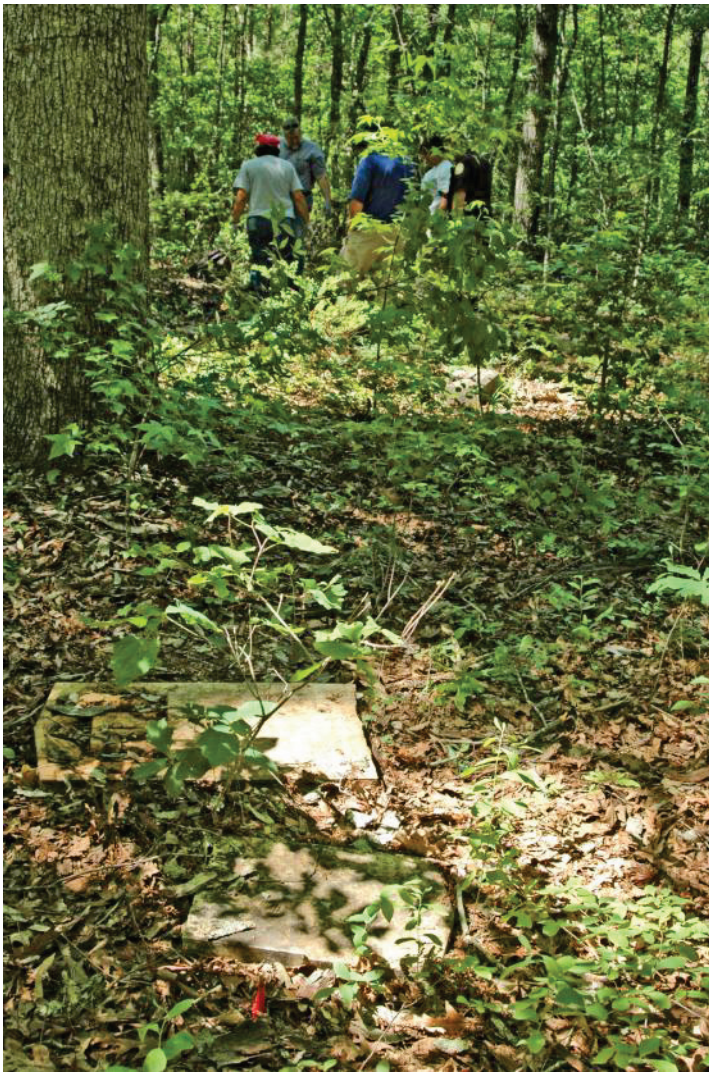

Figure 4. Cemetery looking north to the open grave from the southern edge of the site showing the dense vegetation.

it would be necessary to screen the soil that had accumulated in the vault in order to recover clothing and mortuary remains, as well as be certain that no human remains were left. Work ceased at the grave site about 6:30pm with the removal of the remains from the site.

One item recovered during these initial investigations was a coffin plate that was only partially legible. Chicora Foundation took custody of this item in order to conduct additional treatments in the hope that it would be legible and identify the individual.

The grave was flagged off for the night. Work was resumed the following day by Lexington County Deputy Coroner Laura Gould, and Chicora staff Debi Hacker and Nicole Southerland. Work removed all materials in the vault, with the exception of the casket still in place.

Subsequent work was conducted at the coroner's office. This included cutting away sufficient adipocere to allow access to the pubic symphyseal face morphology and the sternal ribs, both of which were used for dating the age of the individual at death. Measurements of the skull were made, as well as those bones that were accessible.

The white metal casket plate was subjected to electrolytic reduction in a bath of sodium carbonate solution in currents no greater than 5 volts for a period of 4 hours. This was sufficient, with mild brushing, to remove visible corrosion and allow the plate to be read. It was soaked in deionized water for an additional 4 hours before being photographed and returned to the Lexington County coroner for reburial.

The Sightler Cemetery

There are at least three Sightler Cemeteries; one is the subject of this report and is located south of State Pond Road, a second is located about 3.8 miles to the north at the end of Appleton Court, and the third is the Craft-Pound-Sightler Cemetery off Fallaw Road. Additional Sightlers are buried at the First Baptist Church Cemetery, in Gaston, South Carolina, about 2.9 miles southwest of the cemetery off State Pond Road. The cemetery off Fallaw Road has suffered extensive vandalism in the recent past, including the theft of the fence surrounding the cemetery, damage to stones, and an effort to dig into at least one grave.

Table 1.
Stones Reputedly Recorded in the Sightler Cemetery as of 2001

Name	Born	Died
Craft, Charlotte Maye	June 15, 1880	November 7, 1961
Craft, Clarence Christian	September 28, 1880	May 25, 1935
Craft, David Elmore	September 8, 1846	April 29, 1922
Craft, John W.	July 25, 1868	July 14, 1894
Craft, Mary Louisa	May 31, 1840	May 3, 1910
Fallaw, Eugene S.	July 29, 1904	July 29, 1904
Fallaw, Henry W.	August 8, 1914	December 17, 1939
Fallaw, J.G.	March 23, 1861	April 5, 1925
Fallaw, Mary C.	October 23, 1871	September 27, 1944
Pound, Christian W.	April 3, 1852	October 8, 1896
Pound, Christianna Joanna	October 25, 1825	January 7, 1897
Pound, Daniel J.	July 15, 1819	June 22, 1894
Pound, Lavinia Sightler	September 29, 1871	January 7, 1917
Pound, Rufus E.	July 28, 1854	June 30, 1927
Richter, Christian F.	February 21, 1833	June 26, 1862
Richter, Eva M	September 9, 1798	November 1, 1872
Richter, John	February 25, 1819	November 14, 1896
Sharpe, Martha Mims	March 16, 1823	July 4, 1894
Sightler, Frank Holback		April 10, 1953
Sightler, S.M.	Mary 25, 1832	March 21, 1898
Sitler, Henry	December ?, 1760	June 3, 1832
Sitler, Margaret	April 1, 1771	October 13, 1856

A decade ago the Sightler Cemetery off State Pond Road was visited by Ms. Sandra R. Pound and a total of 23 stones were recorded (Table 1).[1] Names included Sightler (which during the eighteenth century was spelled Sitler), Craft, Fallaw, Pound, and Richter. While these families did intermarry, most of these are individuals not buried in the Sightler Cemetery off State Pond Road, perhaps reflecting a mixture of several different cemetery lists. Regardless, Table 1 does not reflect stones present in the Sightler Cemetery in so far as we can determine. Table 2 provides a list of those graves actually marked and identifiable in the cemetery today.

Of the eight stones present, only four are also found on the 2001 list. The bulk of the stones form a single north-south line. At the far southern end is the patriarch of the family, Henry Sitler and his wife, Margaret. The damaged grave, that of Frank H. Sightler is found at the northern edge of the cemetery and appears to be the most recent (Figure 5). While a stone was reported for this grave in 2001, nothing could be found during this study. All of the stones present in the cemetery today are directly related to the Sightler family, representing four generations (Figure 6).

Relatively little is known about Frank Sightler and while numerous inquiries have been made to various individuals posting on-line about the Sightler family we have been unsuccessful in having anyone identify themselves as a direct descendent. We have not, however, taken the next step of making cold calls to the over 20 Sightlers listed in Lexington, Gaston, Swansea, and Pelion.

Table 2.
Stones Recorded in the Sightler Cemetery as of 2011

Name	Born	Died
McGrew, Jane L.	July 20, 1804	March 18, 1886
Sightler, Annie E.	January 4, 1873	August 28, 1896
Sightler, Joseph	April 28, 1801	September 14, 1857
Sightler, Katie B.	December 19, 1879	August 1, 1896
Sightler, S.M.	May 25, 1832	March 21, 1898
Sightler, Septamus B.	August 16, 1845	June 16, 1862
Sitler, Henry	December ?, 1760	June 3, 1832
Sitler, Margaret	April 1, 1771	October 13, 1856

Frank's father, Socrates M. Sightler (1832-1908) was a farmer in the area who traveled to Columbia during the Civil War to enlist as a private in Captain A.R. Taylor's Calvary Company, which eventually became Company B,

[1] In an email dated August 24, 2021, Ms. Pound states that she did not visit the cemetery and is not associated with this list. A decade after the fact it is not possible for us to reconstruct the original source and we apologize for any errors on our part.

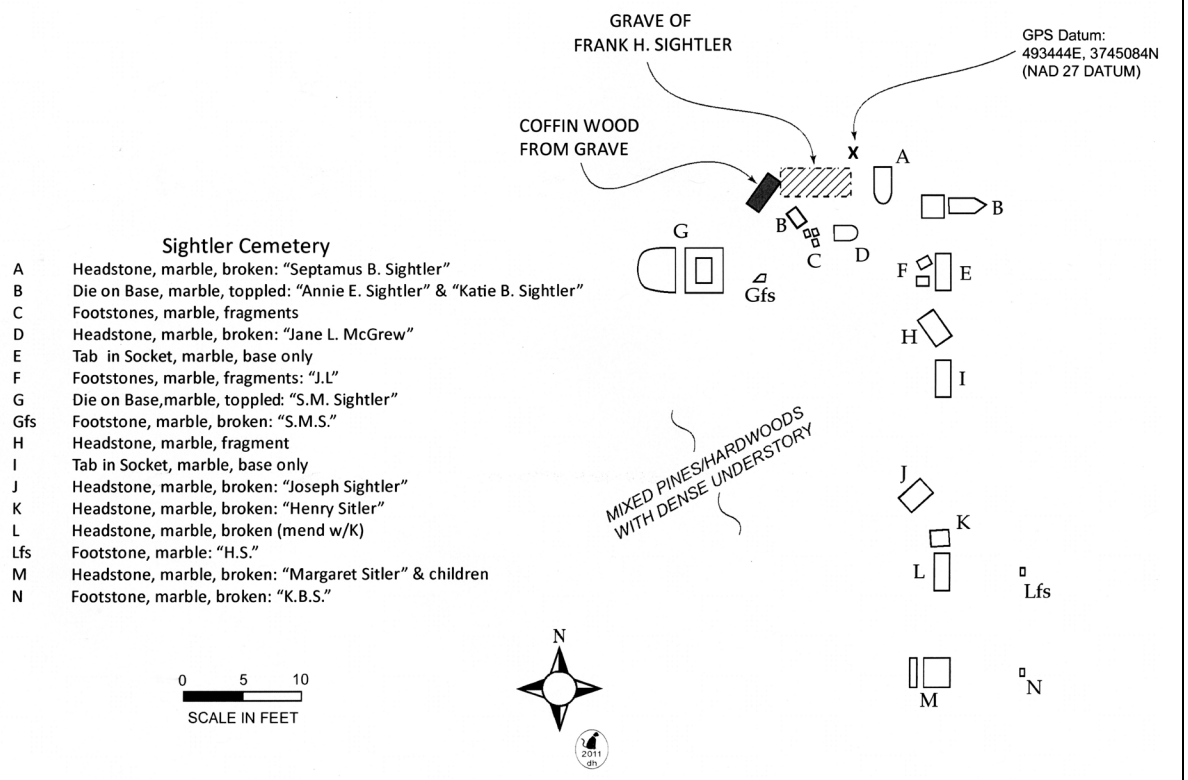

Figure 5. Plan of the Sightler Cemetery.

Cavalry Battalion, Holcombe Legion South Carolina Volunteers and even later simply as the 7th Regiment South Carolina Cavalry. When discharged in 1865, Sightler had advanced to a 4th Sergeant, but was on foot (http://trees.ancestry.com/tree/19185592/person/767525081?pgNum=1). After his death in 1908, his widow, Emmaline Sightler, applied for a widow's pension on October 16, 1919 (S.C. Department of Archives and History, S126088, item 7878).

Frank was born in 1876 and the 1900 census lists him as 25 years old and single. He was labor on his father's farm in the Platt Springs region of Lexington County. By the time of the 1910 census Frank was listed as 34 and was living with his 40 year old brother, William, and his 65 year old mother, Emmaline, on their Platt Springs farm.

In 1918 Frank registered for the World War I draft and was reported as living at Route 3 in Gaston with his mother, Emma (FHL Roll Number 1877673). He listed his occupation as "farmer," and was reported as having a medium build and medium height. He was not "obviously physically disqualified," suggesting no significant injuries at the time.

The 1920 census continues to list Frank in the Platt Springs area, working a farm and supporting his mother, by this time 74 years old. Also still in the household was his 48 year old brother, Willie E.

By 1830 Frank Sightler and his family drop off the census rolls and the next document we have identified for Frank is his April 10, 1953 death certificate (Lexington County 53-005146). Frank had been living at the Lake Side Rest Home. His death is listed as a cerebral hemorrhage and he was buried at the "Sightler Family Cem. Near

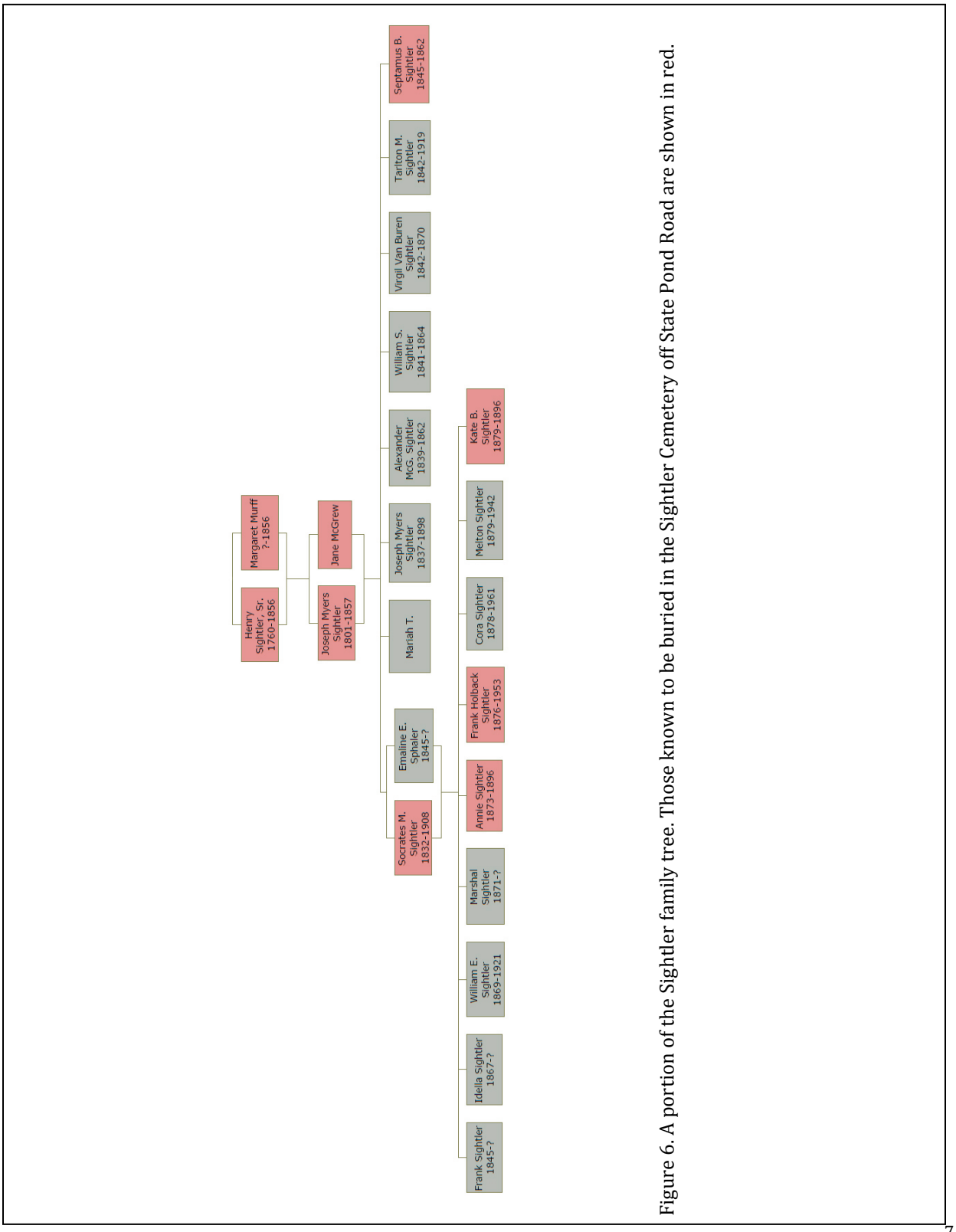

Figure 6. A portion of the Sightler family tree. Those known to be buried in the Sightler Cemetery off State Pond Road are shown in red.

West Columbia, S.C." by the J.R. Thomson Funeral Home.

Frank's brother, William E. (Willie E.) Sightler died on February 4, 1921 and Frank was the informant for the death certificate (Lexington County 2433). William was buried at the "Sightler Church Yard." Since there is no Sightler Church in Lexington, this may have been the same cemetery that Frank was buried in 32 years later.

The cemetery was not identified on any of the historic maps consulted, including the 1946 Edmund 15' topographic map or the 1922 Lexington County Soil Survey.

Goals

The goals of this work are limited and a substantial portion of these were accomplished during the field investigation. For example, it was critical to determine if the remains present on the surface outside the grave likely belonged to those still in the grave. It was important to determine if additional remains had been removed from the grave and were no longer present in the cemetery. And it was critical to determine that no additional remains were present other than those thought to have come from the disturbed grave.

It was also important to identify the remains, if possible, since that would assist in ensuring that the remains in the grave and those that had been robbed were the same individual.

Identification of the remains would also assist law enforcement and/or the coroner notify family members. Thus the investigation incorporated bioanthropological studies, historical and genealogical research, and archaeological examination of the artifactual remains present in the grave.

Cultural Remains

In this section we will briefly describe the cultural remains associated with the burial, including the casket, its hardware, and its associated textiles, including clothing items found in the grave. After documentation, all items were returned to the Lexington County Coroner for reburial.

Since the grave has been dated, this information takes on special significance in helping to document mortuary behaviors in rural South Carolina during the twentieth century.

The Casket

Recovered Remains

Careful inspection of the casket remains from the Sightler grave reveal that while it was a plain model with virtually no embellishments (no ogee lid shape, rounded corners, or octagonal shape), what in the trade was often called a vertical square (i.e., vertical sides and a square end), it was nevertheless of quartersawn oak.

The lid exhibited tongue and groove connections with finishing nails used to connect the individual sections. The interior of the lid was reinforced with pine cross pieces that would have been hidden by the interior lining. Present was the head panel, likely removed to gain access to the head or skull. This head panel exhibits a crown and distinct pie or fishtail.

The casket was a half couch design, meaning that half of the casket can be opened to allow viewing from the chest up. One broken side panel showed a cut for a rectangular body or panel catch or latch to secure the lid.

The wood had laid in the water for too long for any finish to be clearly visible, but the absence of peeling or remnant color suggests that the casket may have had a hand-rubbed finish.

The interior measurements for the casket include 2'1" in width, 6'8" in length, and approximately 1'1" in depth. Since only a small area was open, the length measurement is less accurate than the width and depth.

Comparisons

One authority noted, as early as 1913,

> the coffin is almost out of use in the form in which it once was common, and its place has been taken by the casket. The cheap article is sometimes called a coffin, though it may not have the well known "coffin shape" (Wolfe 1913:29)

Thus, the distinction between the coffin and casket is that the former is hexagonal in shape (sometimes call a "toe-pincher"), while the casket is rectangular.

A similar publication from Virginia remarked that in the first quarter of the twentieth century "nearly all caskets are cloth covered" and this permitted the use of inexpensive woods, such as poplar and chestnut (Simmons 1912b:62). Similar observations were made by the industry in North Carolina (Helphenstine 1923:70) and Pennsylvania where it was claimed that chestnut was the "most used" because it was especially durable, light weight, and inexpensive (Simmons 1912a:83).

By the second half of the twentieth century manufacturers had developed a wide range of both wood and metallic caskets. Although cloth covered caskets were still produced, they

Figure 7. Casket details. Top photo shows the half couch lid; middle photo shows joinery techniques; bottom photo shows the cut for the lid catch.

were a minority in most catalogs. For example, the 1952 Boyertown Burial Casket Co. catalog illustrated two solid mahogany caskets, six solid oak caskets, eight hardwood styles, six steel caskets, and two fabric covered hardwoods. Thus, the fabric covered styles represented only 8% of the total line.

The cloth covered caskets were also by far the least expensive casket available. The average wholesale price in the 1952 Boyertown catalog was $43.50 (in comparison, the average cost of an oak casket was $89.14). Just 26 years earlier, a 1938 Boyertown catalog reveals that the average price for cloth covered caskets was $70.88 (in comparison, the cost of a quartersawn oak casket averaged $102.23). While oak decreased by 15%, cloth covered caskets declined in price by 61%. In addition, in 1938 the cloth covered caskets represented 11% of the Boyertown line.

Nevertheless, local funeral directors observe that until recently they continued to sell a few cloth covered caskets, typically to those with very conservative tastes or to those desirous of an inexpensive model (Landis Price, personal communication 2010).

A similar casket in the Boyertown line is shown as Figure 8. This model, 4251½, had a dull satin finish with a rayon interior. The wholesale cost in 1952 was $66.00 – representing the least expensive oak casket in that catalog.

Most standard square end caskets with vertical sides were between 6’0” to 6’6” in length and 20 to 22” in width. Square end caskets were the same length at the top and bottom. Exterior dimensions were generally 6 to 8” additional. Extra widths were offered, including 23 and 25” (often referred to as first extra size and second extra size).

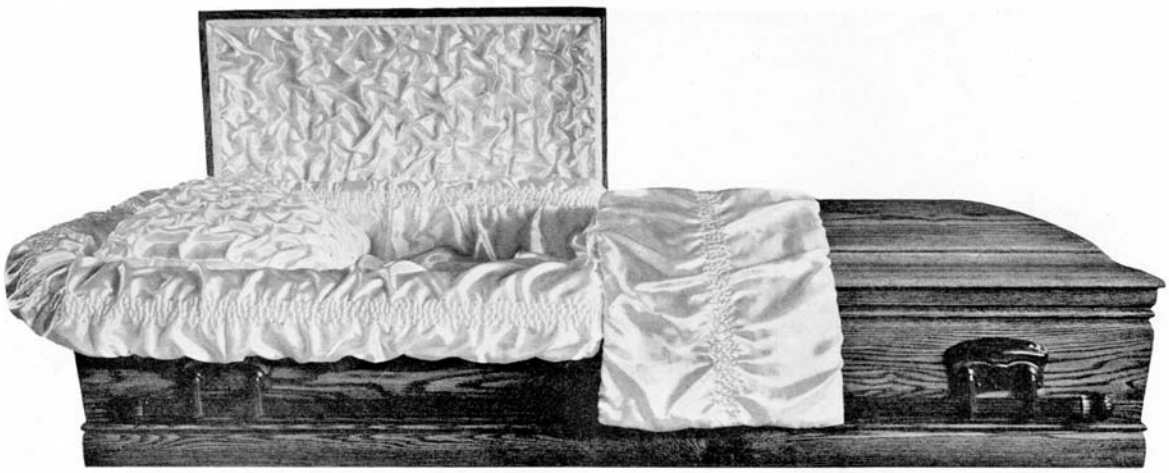

Figure 8. Boyertown 4251½ Solid Oak, Dull Satin Finish, Rayon Interior. This is similar to the one recovered at Sightler Cemetery.

Thus, the recovered casket appears to be either an extra size or perhaps the measurements were inaccurate because of the limited opening. It is also important to note that each manufacturer used slightly different standard measurements.

Casket Hardware

Recovered Remains

Unfortunately it was impossible to access the casket handles, although it was possible to determine that they were long bar handles (also called extension bars). These handles typically consist of three lugs spaced evenly along the length of the casket. One or two arms on each lug attach it to a bar that runs the length of the casket.

A casket plate was recovered loose from the fill. Made of white metal, it was badly corroded from the water in the grave. Minimal electrolysis removed the corrosion, revealing the inscription, "Frank H. Sightler" on a polished silver finish plate measuring 8" in length by 4⅛" in width. On the reverse of the plate was the molded lettering "PHILA 41" which is likely a mold or catalog number. The plate originally attached to the lid of the casket using four brass tacks in the corners of the plate. The plate was slightly curved and edges were beveled.

Many of the smaller metal items were badly corroded, but it was possible to identify at least one rectangular panel catch and one rectangular panel fastener. Other metal fragments were likely associated with hinges, but no details could be determined.

Better preserved was a metal support with screw eye that would have been used to hold open the casket lid.

Comparisons

Long or extension bar handles occur in catalogs at least as early as 1877, but they don't account for more than half of the hardware offered until about 1925 and they don't dominate catalogs and offerings until the 1950s (Trinkley and Hacker 2007). Consequently, their presence are consistent with the 1953 date.

Generally by this time funeral homes were purchasing caskets with hardware, although the option existed to obtain caskets without hardware so they could be upgraded or made less costly. The average price for these handles, based on the 1956 Victor Casket Hardware Price List

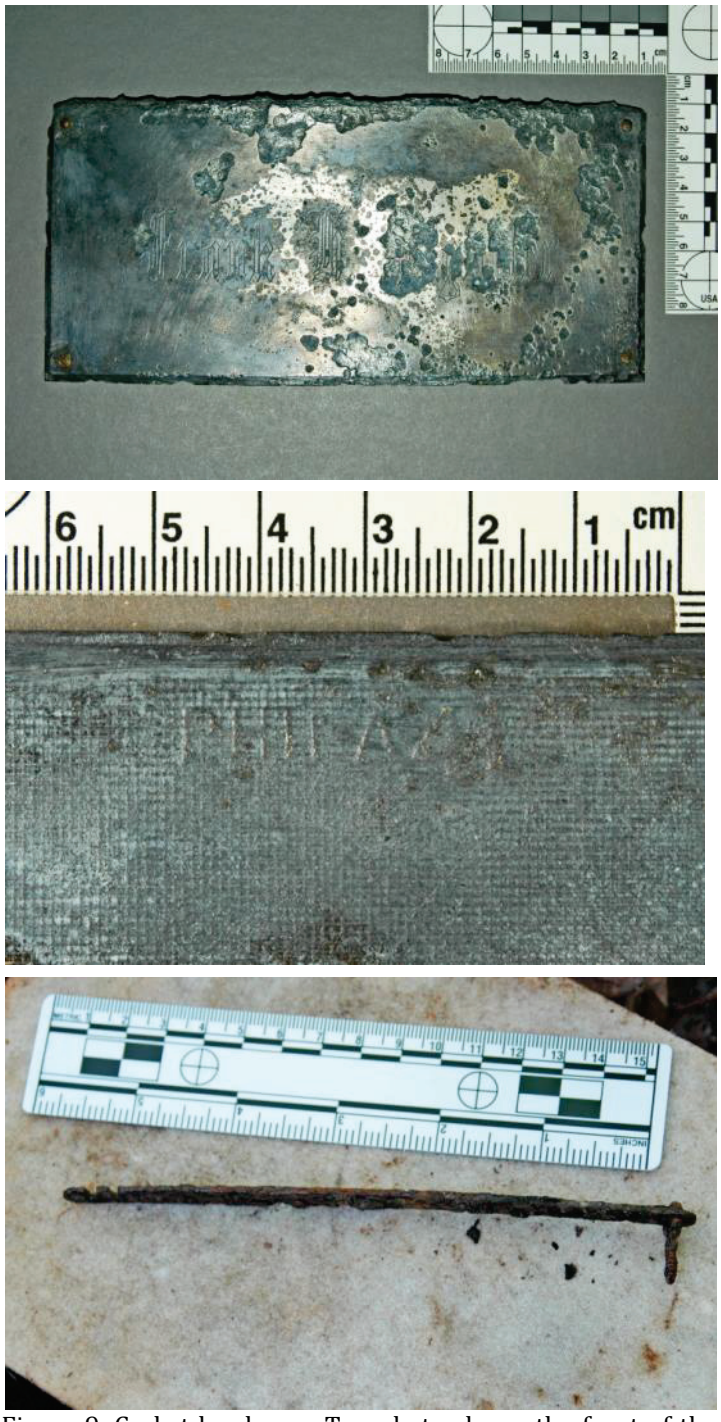

Figure 9. Casket hardware. Top photo shows the front of the plate; middle photo shows a close-up of the stamp on the reverse of the plate; and the bottom photo shows the support and screw eye.

was only $4.54 a set wholesale, so the cost was not a major factor in the total expenditure.

The practice of engraving a metal plate with the name of the deceased, and often the date of death, began in the first half of the nineteenth century and probably peaked in the last quarter of the century. Gradually, engraved plates were replaced by plates with pre-engraved, stamped, or cast lettering, such as "Father," "Our Darling," or similar phrases. Coffin plates, however, continued to be sold well into the twentieth century. For example, the 1956 Victor Casket Hardware Co. catalog lists 12 styles made of antimonial lead, zinc, and steel. Stamped inscriptions included "At Rest," "Gone to Rest," "Rest in Peace," "In God's Care," "Father," and "Mother." Also available, however, were two plain plates suitable for engraving. These plain plates were sold for 37¢ each.

There seems to have been a difference between casket hardware such as handles and plates and what was known as "casket shell hardware," which included such items as latches, hinges, supports, and fasteners. One manufacturer of shell hardware from the 1930s through the 1960s was the Weber-Knapp Co. of Jamestown, New York. Figure 10 shows several examples of hardware matching items recovered from the Sightler grave. These are consistent with a mid-century date.

The Vault

Recovered Remains

The burial used a concrete vault lined with asphalt and reinforced with metal wire. The interior surface of the asphalt coating in the vault had a textured silver coating. The vault measured about 7'7" in length, 2'6" in

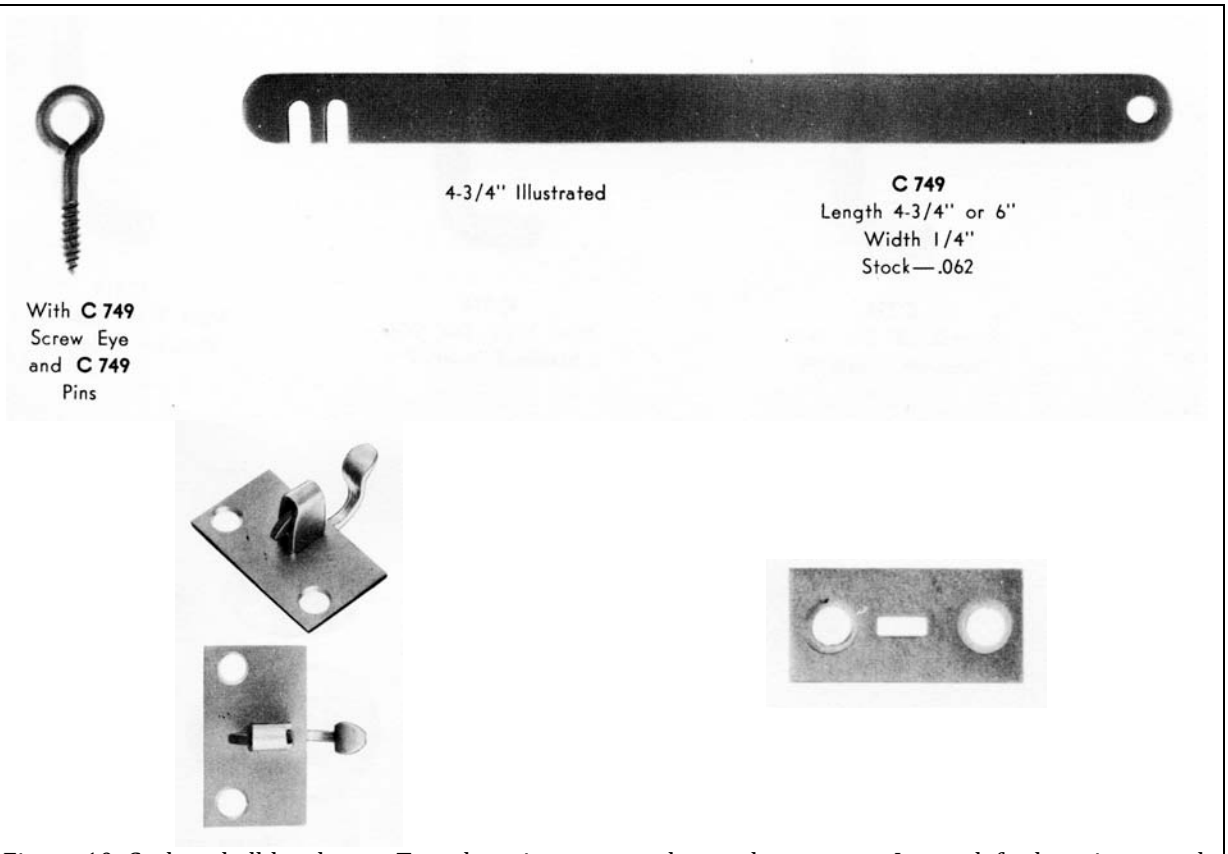

Figure 10. Casket shell hardware. Top photo is a support bar and screw eye. Lower left photo is a panel catch. Lower right photo is a panel fastener.

width, and about 2'2" in height. It was possible to determine that the vault had been sealed using liquid asphalt; it was not possible to determine if this seal had been compromised, although the portion visible appeared to be sound.

Comparisons

This was very likely a Wilbert Vault as this company is known for their asphalt lined vaults that were patented in 1930 but reportedly available as early as the 1920s (Earl Brutsche, personal communication 2011). The asphalt lining was created first in a mold lined with castor oil and then the concrete vault was built around the asphalt. The textured asphalt surface consisted of metallic flakes in a bronzing liquid. The vaults, with a tongue and groove lid and body connection, were sealed using a liquid asphalt or bitumen. By the early 1960s the company had switched to plastic lined vaults, still in use today (http://www.wilbertonline.com/about/history/lined/).

The Columbia Wilbert Vault Co. in Cayce, South Carolina was established in 1941 and was the likely supplier of this vault. The size is consistent with Wilbert vaults provided today and identified as a size 30A (90x30x26") and is slightly longer than the standard size 30 (which is 88"). It is suitable for an oversized casket.

Fabrics

Recovered Remains

The only fabric recovered is a large mass of a brown knitted nylon material. This material is likely clothing, probably some type of shirt. No other fabrics, either from clothing or from the casket, were recovered.

Figure 11. Vault from Sightler Cemetery. Top photo shows a portion of the concrete lid with wire reinforcing mesh and asphalt lining. Bottom photo shows the side of the vault including the sealed lid.

Clothing Items

Recovered Remains

In addition to the fabric, the grave produced seven black plastic 4-hole buttons, ½" in diameter. In the absence of a zipper, these were likely pants buttons. Also present was one black plastic 4-hole button ⅝" in diameter. The purpose of this button is uncertain.

There was one metal snap with adhering cotton fabric. This was likely a snap for cotton boxer underwear.

A single white porcelain 4-hole button, ⅜" in diameter, was also recovered. Its function is unknown.

A collar stay was also recovered. Its function is uncertain since only one was present and not only were stays very much out of date by the 1950s, but the knit shirt would not have used stays.

A final clothing item is a corroded 1⅛" brass safety pin. Given the condition of the grave it was not possible to determine its use, although it seems likely that it was used to mend clothing.

Comparisons

The assemblage is consistent with the burial of a very elderly male with limited financial resources. There is no evidence that any special clothing was used for the burial and the presence of potentially mismatched buttons and a safety pin suggest that whatever clothing the individual owned was used. No evidence was found of any shoe hardware or remains, suggesting that none were present. No belt buckle was present. Nor were any jewelry or personal items present, although perhaps the collar stay

Figure 12. Clothing items recovered from the burial. On the left are the two sizes of black plastic buttons and the safety pin. On the right is the underwear snap, porcelain button, and collar stay.

might be considered in this category since it otherwise serves no clear purpose.

There are an incredible number of patents issued on safety pins. The one present from this grave is essentially "modern," being very similar to the W.W. Brown model patented in 1906 (Patent 818,998). It is clearly a 20th century pin and is consistent in age with the burial.

Other Items

Recovered Remains

There are several additional items that don't fit neatly into the previous categories.

The grave produced a large quantity of excelsior (also sometimes called wood wool). While caskets today typically use cotton, polyethylene foam, or spun polyester, historically both shredded paper and excelsior were used to fill the casket mattress. Excelsior casket pads are still produced today for religions that require complete decomposition of the burial receptacle.

Another common item found in burials of embalmed individuals is a trocar button. The trocar is a twentieth century device designed to plug holes in the body to prevent leakage of both embalming and bodily fluids. They were used to plug the hole where the trocar was inserted to drain blood and then fill the body with embalming fluid. Initially of rubber, they replaced the old method of using absorbent material or sutures. In 1945 Arthur V. Cullen submitted a patent application and in 1948 was granted a patent (2,437,381) for the trocar button found in the grave (Figure 14). This was a white plastic device with screw thread to hold it in place. The two holes in the cover allowed the button to be inserted and also removed, since at some point after the first injection it was necessary for the incision to be opened for release of accumulated

Figure 13. Excelsior recovered from within the casket.

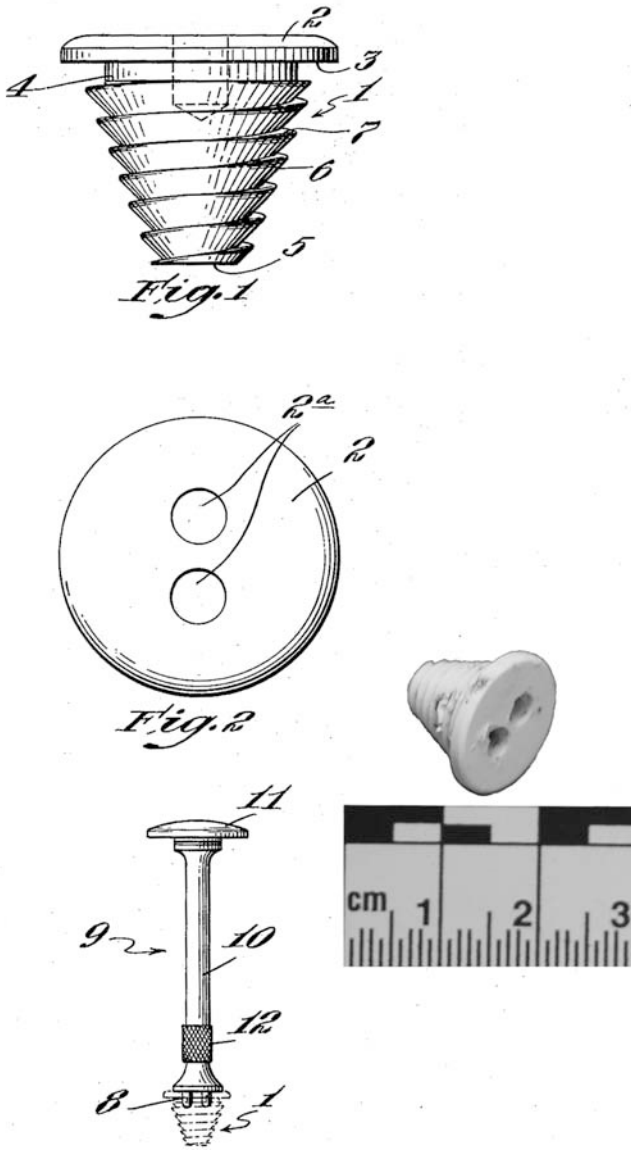

Figure 14. Patent for the Cullen trocar button and the button recovered from the Sightler burial.

gases or the introduction of more embalming fluid.

A final item recovered from the grave was a single lead shot, 8.5 mm in diameter. This is the standard 00 buckshot. It is not possible to attribute this item to the body in the grave since we observed several plastic shotgun shells in the immediate cemetery vicinity. This is an item that might simply have entered the vault during or after it was opened.

Human Remains

The Remains

Cranial

Overall, the remains were found to be in good, stable condition, due to the presence of water in the grave and the development of adipocere. The skull was dry, with some deterioration on the base of the occipital. The torso, which included both humeri, left radius, and both femurs, was coated with a thick layer of adipocere; the adipocere also served to preserve the lower portions of the lungs, and likely other internal organs (Figure 15). The remainder of the bones were located by screening the water and fill in the grave.

The cranium was found resting on a nearby tombstone, and was a light grayish brown in color (Figure 16). Evidence of adipocere was found on the occipital and temporal lobes. The base of the occipital lobe had deteriorated in two areas, probable due to its contact with the tombstone (Figure 17).

The brow ridge was moderate, with a general rounded appearance to the frontal and parietal bones. The external occipital protuberance and mastoid process were of moderate size. These characteristics conform with the identification of Frank Sightler, a male of European descent.

The lambdoidal sutures were only slightly obliterated, while the coronal sutures were only about 30% obliterated. There were two depressed, porous areas on the left and right posterior of the parietal, and an overall lumpy appearance to the parietal, due to biparietal thinning, typical of an older person (Mann & Hunt 1990: 50, Ubelaker 1998: 88) (Figure 18). The interpalatine suture of the maxilla was obliterated. The only arthritic lipping was on the right occipital condyle. All teeth were lost at least 10 years ante-mortem, as evidenced by the totally resorbed bone of the maxilla. These characteristics conform with the knowledge that Frank Sightler died at the age of 77 years (Lexington County Death Certificate 53-005146).

There was evidence of massive trauma to the right side of the forehead and face, which had healed at least 10 years ante-mortem. The line of a healed linear fracture begins on the left side of the right frontal bone, extending down into the right eye orbit, across to the right nasal bone, and down from the eye orbit through the maxilla (Figure 19). The boney edges of the fracture on the frontal bone, although healed, had never come together, leaving a gap approximately 20 mm long and 1-2 mm wide directly above the eye orbit (Figure 20). The damaged portion of the maxilla is depressed and considerably smaller than the corresponding area on the left maxilla.

The mandible was recovered during the screening of the water and fill in the grave. All teeth had been lost at least 10 years ante-mortem, with the alveolar process resorbed. The trauma of the cranium continues into the right body of the mandible, which appears to have been fractured superior to inferior; overgrowth of bone covers the fractured area, and a portion of the inferior edge of the body is missing (Figure 21).

Cranial measurements were taken and are available in Table 3. These were evaluated by FORDISC 3.0 for probable ancestry (the program determines ancestry through discriminant function analysis of the cranial measurements) and the results are provided in Table 4. The closest match is that of a white male; differences from the mean are most likely the result of the

Table 3.
Cranial Measurements, in mm.

Maximum cranial length	191
Maxium cranial breadth	145
Bizogomatic breadth	139
Basion-Bregma height	134
Maxillo-Alveolar breadth	57
Maxillo-Alveolar length	48
Upper facial height	71
Minimum frontal breadth	115
Nasal height	56
Nasal breadth	20
Orbital breadth	41
Orbital height	32
Chin height	31
Bigonial breadth	44
Bicondylar breadth	126
Minimum ramus breadth	25
Mandibular angle	122
Maximum ramus height	67
Mandibular length	60

facial injuries that produced some anomalous measurements.

Table 4.
Comparison of Measurements to FORDISC 3.0 Group Means

Measurement	Case	Asian Males	Black Males	White Males
Basion-Bregma height	134	131.3	138.0	142.2
Maximum cranial length	191	181.3	186.6	188.1
Maxillo-Alveolar breadth	57	66.2	66.6	61.6
Maxillo-Alveolar length	48	55.1	57.9	53.5
Nasal breadth	20	26.1	25.8	23.5
Nasal height	56	54.3	52.2	52.8
Orbital breadth	41	42.8	40.3	40.8
Orbital height	32	35.1	25.0	33.5
Upper facial height	71	74.0	72.9	71.2
Minimum frontal breadth	115	98.1	96.4	97.5
Maxium cranial breadth	145	141.8	135.5	141.0
Bizogomatic breadth	139	143.4	130.8	130.0

Post-Cranial

The torso was examined in the lab of the Lexington County Coroner's Office. Because of the copious amount of adipocere (22.2 to 41.4 mm in thickness) covering the bones, and the decision to disturb the remains as little as possible, only a few observations could be made. Some lung tissue was extant, but not examined (Figure 22).

The superior portion of the left and right humeri showed marked ridges and grooves for muscle attachment. The right radius also indicated marked musculature (White and Folkens 2000: 184, 189)

The sternal ends of the exposed ribs are Phase 8 of the Iscan, Loth, and Wright series, exhibiting thin walls, irregular edges and long, bony projections, known as the "crab-claw" effect (Figure 23). Phase 8 indicates an age of 65 years or older (Ubelaker 1998:89-90). The pubic symphysis was pitted, porous, and irregular, placing it in Phase VI of the Suchey-Brooks system, with an age range of 34-86 years (Brooks and Suchey 1990). The anterior faces of the patellae have vertical striations of bony growth, indicative of an age of over 60 years and the presence of osteoarthritis (Mann and Hunt 1990: 196).

The glenoid cavity of the left and right scapula evidenced mild arthritic lipping. The left tibia had a burnished inferior fibular articular surface, moderate lipping of medial malleolus, and lateral and medial condyles, all indicative of osteoarthritis, often the result of rigorous use (White and Folkens 2000: 398-399).

Only four long bones were available for measurement of maximum length: left femur, left tibia, right humerus, and left radius. Using the Trotter and Glesser Maximum Stature Tables (Bass 1995:27), the expected stature is shown in Table 5. These calculations provided a range of 166.2–172.2 cm for the maximum stature, or approximately 5'4" to 5'7".

Adipocere

While there is still considerable forensic research being conducted regarding adipocere, the essential processes resulting in its formation are agreed to include hydrolysis and hydrogenation (Fiedler and Graw 2003; Forbes

Table 5.
Stature Measurements

Location	Measurement (in mm)	Stature Estimate (in cm)	Reduction for Age [-.06(77-30 cm)] or 2.82 cm
Left femur	475	174-175	171.2-172.2
Left tibia	378	173-174	170.2-171.2
Right humerus	323	170	167.2
Left radius	240	169-170	166.2-167.2

2008:210; Ubelaker and Zarenko 2011:168-169). Triglycerides are converted to free fatty acids by hydrolysis; then the neutral fats will liquefy and diffuse into the surrounding tissue. Bacteria, especially the anaerobic *Clostridia*, release enzymes that convert the unsaturated fatty acids to saturated fatty acids, primarily myristic, palmitic, and sterric acids. The entire body can be involved, including portions with minimal fat content, as a result of the translocation of liquefied fat and eventual diffusion into the tissue. Fresh adipocere has a soft, wet, paste-like appearance. As it ages it becomes dry and brittle or crumbly, usually taking on a white or gray soapy appearance.

The formation of adipocere is favored by anaerobic environments with sufficient moisture; studies have, however, shown that adipocere can form using the moisture within the body's own issues (Forbes et al. 2005a:25). Its formation is also favored by the presence of clothing, which can absorb and retain moisture (Forbes et al. 2005b:45). Variations in temperature between 72 and 104°F have no impact on formation (Forbes et al. 2005a:33). The rate of formation can vary from weeks to months (Forbes et al. 2005b:45). A survey by Kumar and his colleagues found adipocere formed on bodies immersed in water in as little as 3 days to as long as 5 years (Kumar et al. 2009:476). A literature search reveals considerable variation in the time required for formation among individuals deposited within the same general environment (Ubelaker and Zarenko 2011:169-170).

While adipocere has been noted to survive for very long periods, it is not an end product. Decomposition of adipocere will occur when certain aerobic and bacterial conditions are met (Forbes et al. 2005b:45). There is good evidence, however, that adipocere is very resilient, resisting decay that even accompanies fluctuating ground water levels and intermittent periods of exposure to both aerobic and anaerobic bacteria (Fiedler et al. 2009).

Thus, while the research demonstrates that moisture and an oxygen depleted environment would have been necessary for the formation of the adipocere observed, it does not reveal whether the adipocere formed during burial in the closed vault or after the vault was damaged and water entered. The skeletal remains, themselves, provide this answer.

Since the skull, which was likely removed from the grave at the time of its damage, exhibited adipocere, it is likely that the conversion process occurred while the vault was intact. With the removal of the skull and its exposure to weathering and aerobic bacteria such as *Bacillus*, *Cellulomonas*, and *Nocardia*, the adipocere began the process of decay. The remainder of the body, partially submerged in warm water, either continued adipocere formation or remained as it was found.

Summary

In conclusion, the skeleton indicates that these are likely the remains of an adult male of European descent, between the ages of 65 and 86 years, 5'4" to 5'7" in height, who suffered arthritis due to rigorous work. According to his death certificate, Frank H. Sightler was a white male, retired farmer, who died at the age of 77. According to his WWI draft registration, he was a man of average height and build. There is, unfortunately, no historic evidence of his traumatic injury, which did not heal properly, and undoubtedly changed the appearance of his face. An attempt to identify relatives who might have some knowledge of the injury was unsuccessful.

Figure 15. Posterior view of the remains showing the large amount of adipocere.

Figure 16. Skull and radius on nearby tombstone.

Figure 17. Close-up of cranium, distal view; note deterioration of occipital.

Figure 18. Cranium, superior view; note sutures and depressed areas of parietal.

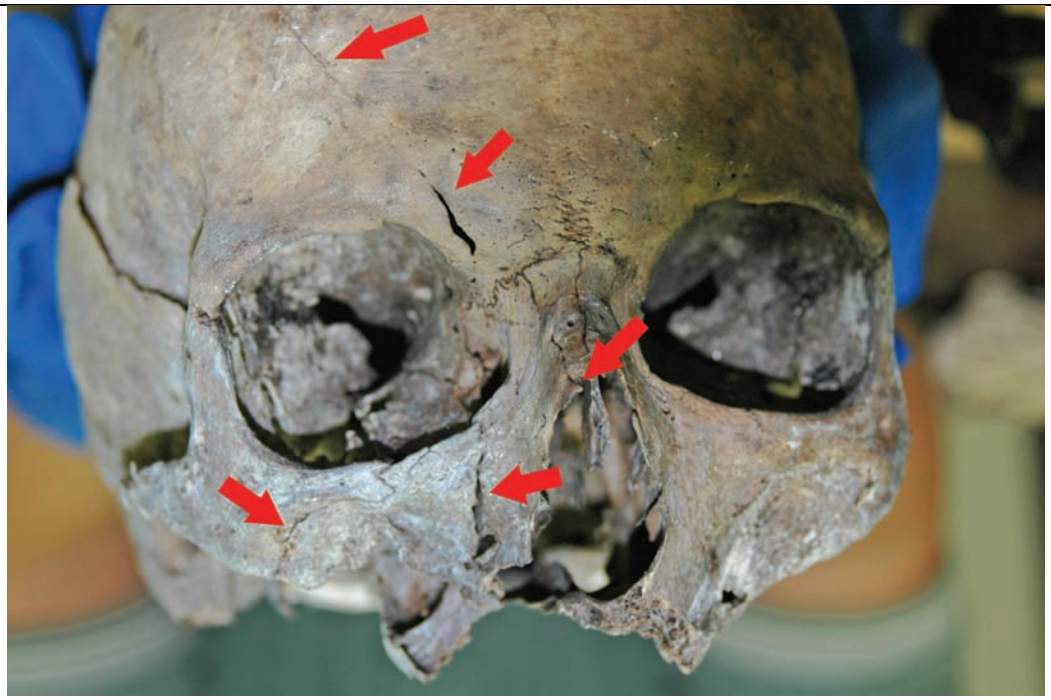

Figure 19. Cranium, anterior view showing healed fractures.

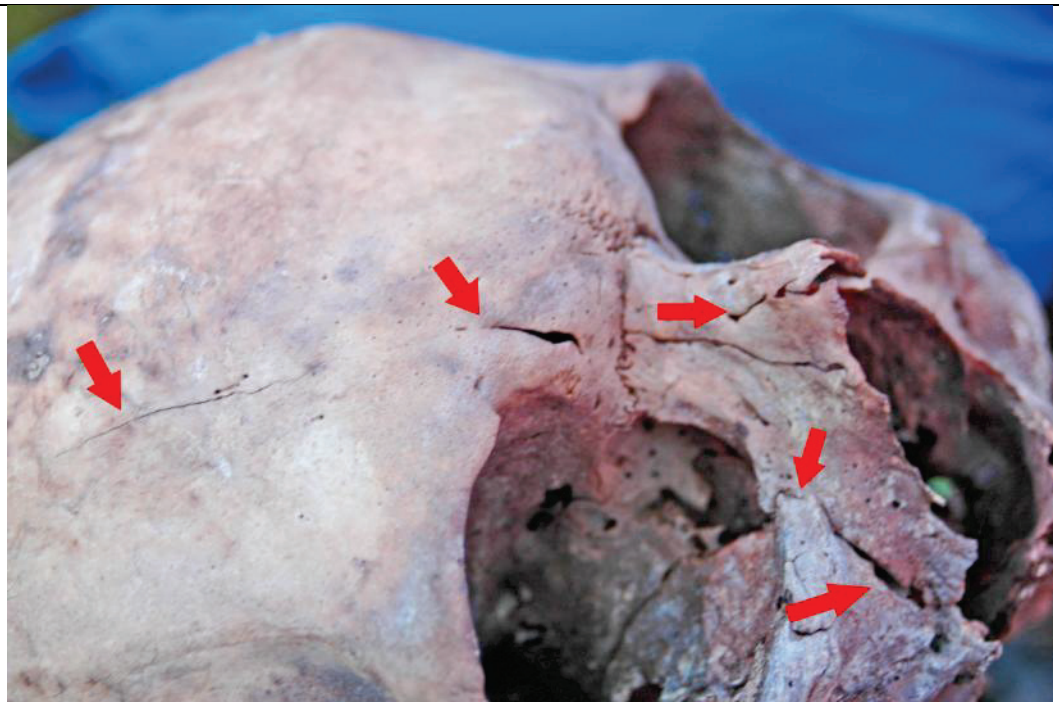

Figure 20. Cranium, medial view showing healed fractures.

Figure 21. Cranium and mandible, medial view; note injured maxilla and missing portion of the right mandible.

Figure 22. Close-up of upper torso; note the extent of lung tissue (appears black).

Figure 23. Close-up of right ribs; note “crab claw” characteristic.

Sources Cited

Bass, William M.
1995 *Human Osteology: A Laboratory and Field Manual.* Missouri Archaeological Society, Columbia, Missouri

Brooks, S. and J.M. Suchey
1990 Skeletal Age Determination Based on the Os Pubis: A Comparison of the Ascadi-Nemeskeri and Suchey-Brooks Methods. *Human Evolution* 5:227-238.

Fiedler, S., F. Buegger, B. Klaubert, K. Zipp, R. Dohrmnn, M. Witteyer, M. Zarei, and M. Graw
2009 Adipocere Withstands 1600 Years of Fluctuating Groundwater Levels in Soil. *Journal of Archaeological Science* 36:1328-1333.

Fiedler, S. and M. Graw
2003 Decomposition of Buried Corpses, with Special Reference to the Formation of Adipocere. *Naturwissenschaften* 90:291-300.

Forbes, Shari L.
2008 Decomposition Chemistry in a Burial Environment. In *Soil Analysis in Forensic Taphonomy: Chemical and Biological Effects of Buried Human Remains*, edited by Mark Tibbett and David O. Carter, pp. 203-224. Taylor and Francis, Boca Raton, Florida.

Forbes, Shari L., Barbara H. Stuart, and Boyd B. Dent
2005a The Effect of the Burial Environment on Adipocere Formation. *Forensic Science International* 154:24-34.

2005b The Effect of the Methods of Burial on Adipocere Formation. *Forensic Science International* 154:44-52.

Helphenstine, R.K., Jr.
1923 *Wood-Using Industries of North Carolina*. North Carolina Geological and Economic Survey, Raleigh.

Kumar, T.S. Mohan, Francis N.P. Monteiro, Prashantha Bhagavath, and Shankar M. Bakkannavar
2009 Early Adipocere Formation: A Case Report and Review of Literature. *Journal of Forensic and Legal Medicine* 16:475-477.

Mann, Robert and David R. Hunt
1990 *Photographic Regional Atlas of Bone Disease.* Charles C. Thomas, Illinois.

Simmons, Roger E.
1912a *Wood-Using Industries of Pennsylvania*. Pennsylvania Department of Forestry, Harrisburg.

1912b *Wood-Using Industries of Virginia*. Virginia Department of Agriculture and Immigration, n.p.

Spitz, Werner U. and Daniel J. Spitz, editors
2006 *Spitz and Fisher's Medicolegal Investigation of Death: Guidelines for the Application of Pathology to Crime Investigation*. Fourth

Edition. Charles C. Thomas, Springfield, Illinois.

Trinkley, Michael and Debi Hacker
2007 Remember Man Thou Art Dust: A Retrospective. Paper presented at the Society for Historical Archaeology Conference, Williamsburg, Virginia.

Ubelaker, Douglas H.
1998 *Human Skeletal Remains: Excavation, Analysis, Interpretation.* Taraxacum, Washington, D.C.

Ubelaker, Douglas H. and Kristina M. Zarenko
2011 Adipocere: What is Known After Over Two Centuries of Research. *Forensic Science International* 208:167-172.

White, Tim D. and Pieter Arend Folkens
2000 *Human Osteology*. Academic Press, New York.

Wolfe, Stanley L.
1913 *Wood-Using Industries of South Carolina*. South Carolina Department of Agriculture, Commerce and Industries and U.S. Forest Service. R.L. Bryan, Columbia.

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